A CASE STUDY: WALNUT TWIG BEETLE, *PITYOPHTHORUS JUGLANDIS* BLACKMAN (COLEOPTERA: CURCULIONIDAE: SCOLYTINAE) IN BUCKS COUNTY, PENNSYLVANIA

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Thousand cankers disease (TCD) is a lethal disease caused by the fungus *Geosmithia morbida* (Tisserat, et al. 2009). The fungus is vectored by the walnut twig beetle (WTB; *Pityophthorus juglandis* Blackman (Coleoptera: Scolytidae)), which carries the fungus as it tunnels beneath the bark, causing small cankers to form (Kolařík, et al. 2011). Repeated beetle attacks and the formation of multiple cankers disrupt the vascular system, leading to dieback and eventually death of the tree. TCD is a threat to both commercial and wildland walnut (*Juglans* spp.) trees. While it has been known to occur throughout much of the southwestern United States, it has only recently been detected in the eastern United States. WTB was first detected in Bucks County, Pennsylvania, in July 2011 when a concerned sawmill owner sent a sample to the plant disease clinic at Pennsylvania State University. By August 2011 the Pennsylvania Department of Agriculture had confirmed the presence of both WTB and its accompanying fungus in Bucks County. Quarantine measures were initiated to prevent the spread of TCD from walnut material originating from Bucks County. Recent molecular tests have shown that the WTB present in Pennsylvania is identical to the WTB in California (S. Seybold, U.S. Forest Service, personal communication). It is believed that the beetles arrived on infected Claro (*J. hindsii*) walnut wood shipped to the sawmill owner in 2001 or 2008. The objectives of this project were to determine: 1) if WTB was established in Bucks County, 2) the distribution of WTB within Bucks county, 3) the spatial distribution of black walnut and WTB around the introduction site, 4) if distance, dbh and other abiotic and biotic factors affect infestation by WTB, and if this information could be used in developing a potential sampling plan for the detection of WTB.