New and Unusual

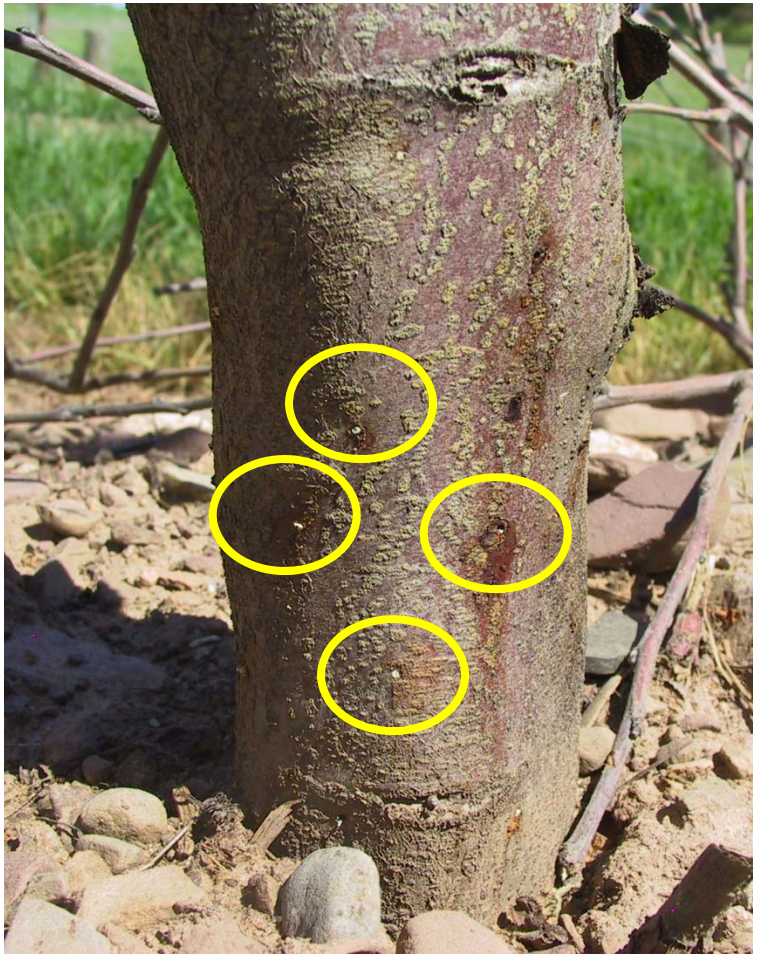
Deborah Breth, Art Agnello,
Kerik Cox, Dan Gilrein

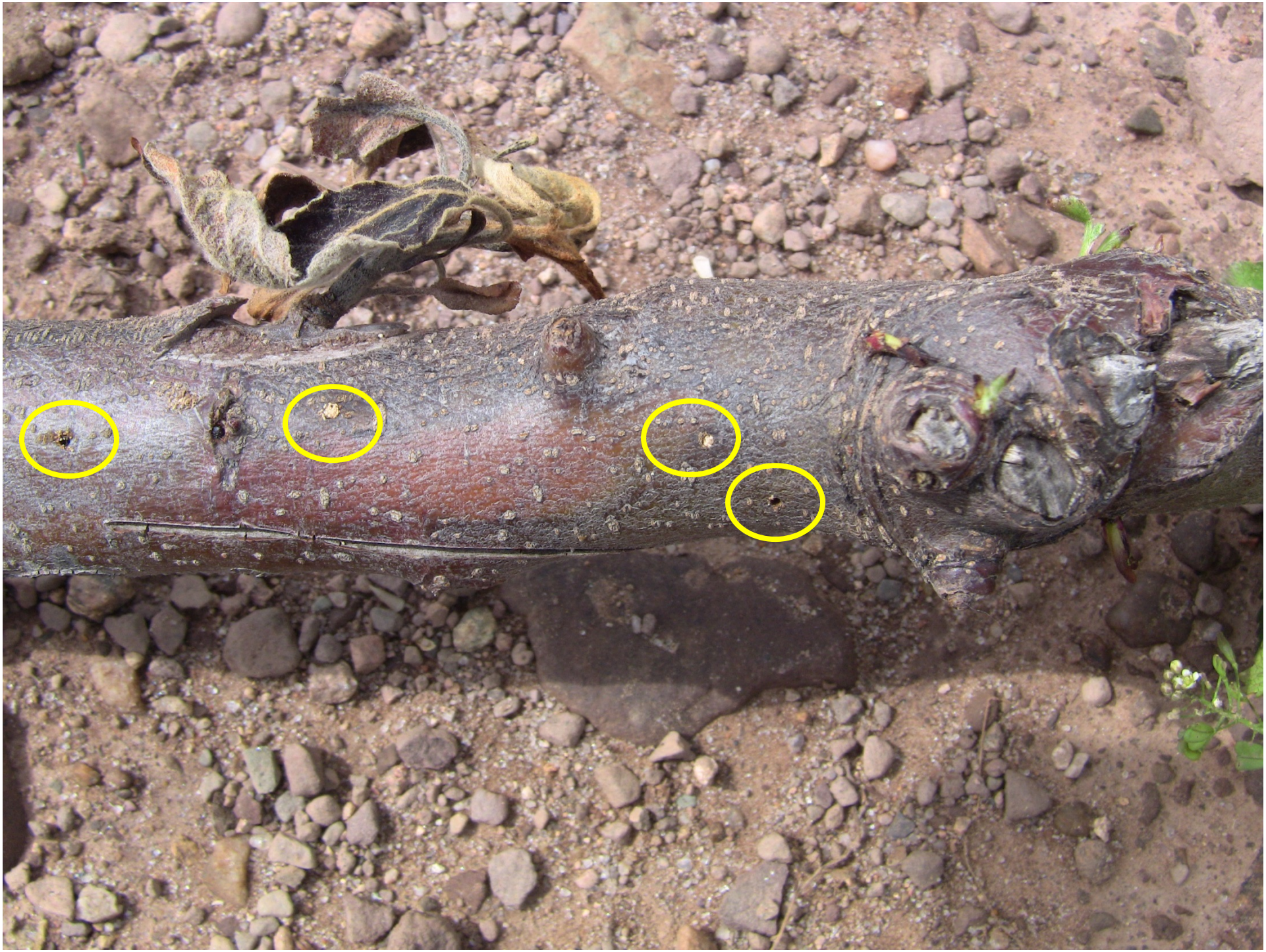
Grower sent this picture on May 1, ‘13 Fuji/Pajam 2 in 4th leaf.

Frass coming from 1 mm holes
100’s of trees infested

Shot hole borers – 5 sites

Which came first? Fire blight or Shot hole borers?






Liz Tee 2013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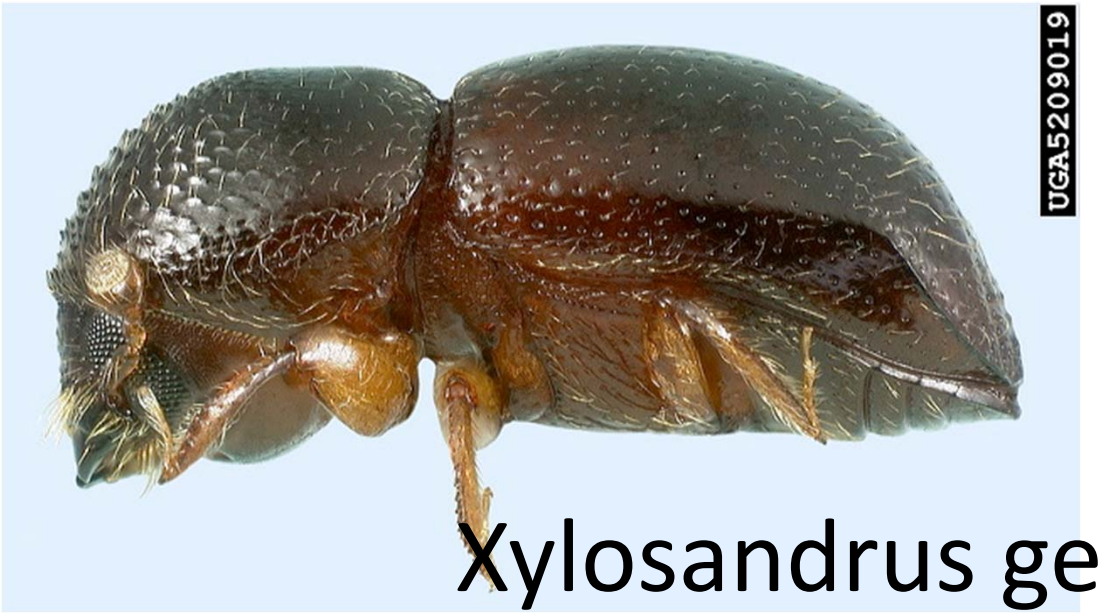
Eggs/larvae in brood chamber
Jun 26, ‘13



Keyed out by Dan Gilrein

Xylosandrus germanus – **black stem borer**

J.R. Baker & S.B. Bambara, North Carolina State University, Bugwood.org - See more at: http://www.forestryimages.org/browse/detail.cfm?imgnum=5159039#sthash.CkGlyPun.dpuf

An Ambrosia beetle

- Taxonomy - Coleoptera: Scolytidae: Scolytinae: Scolytini: Xyleborina
- First introduced from Asia into Long Island in 1932, reported in NY, CT, MD, NJ, RI, AL, OK, GA, MS, TN, TX, OR, BC.
- Reputation for attacking apparently healthy plants
- Attacks 1-50 cm diameter stems
- Toothpick like frass tubes
- http://oregonstate.edu/Dept/nurspest/Xylosandrusgermanus.htm - Jul 12, 2006
- Recorded in Japan (‘81)and US in apple in 1982. Cherries in 1982.
- Can fly 2 km, and spread 10’s of Km per year

Life cycle – 2 generations/year

- Adults overwinter in galleries at base of trees
- Emerging adults in the spring fly low to the ground – trap at 1 m off the ground.
- Flight begins in mid-April in Illinois and through mid-Jun. NY? We saw eggs late June in WNY in 2013.
- Each female can produce 1-53 eggs, and the sex ratio was 10 females:1 male. Eggs stage is 6 days.
- Female enter bark, 1 mm hole, extended horizontally into the wood 2-3 mm more, then widen the tunnel for the brood chamber which goes vertically 7-12 mm long.
- Larvae continue to develop in brood chamber and branch channels feeding on the Ambrosia fungus lining the galleries. Larval stage is 18 days; pupal stage for 25 days.
- Larvae go through 3 instars.

Control Recommendations?

- Prevent stress
- Removed and destroy infested wood
- Monitor flight
- Ambrosia beetles are difficult to control with insecticides - insecticides must either be closely timed with beetle attacks, be applied repeatedly, or have long residual activity (Oliver and Mannion, 2001).
- Insecticides appropriately labeled as bark treatments may be used against new attacks, but systemic insecticides are not effective.

Summary for 2013

- Growers complained of trees dying.
- Found *X. germanus* in 6 sites in WNY.
- Collected samples and tested for FB – 4 of 6 sites have SmREa ?
- 2014 - Ethanol-baited traps used to detect and monitor the presence of *X. germanus* in Europe, Asia and North America
- Traps are significantly less attractive to *X. germanus* than to other ambrosia beetles, and are only suited to monitor the presence of the species, not its abundance.

Fire blight or ?

Leopard moth -***Zeuzera pyrina*** **(L.)**

Leopard moth

Leopard moth larva responsible for a few trees deaths in young plantings near woods edges.

Internal lep in WNY

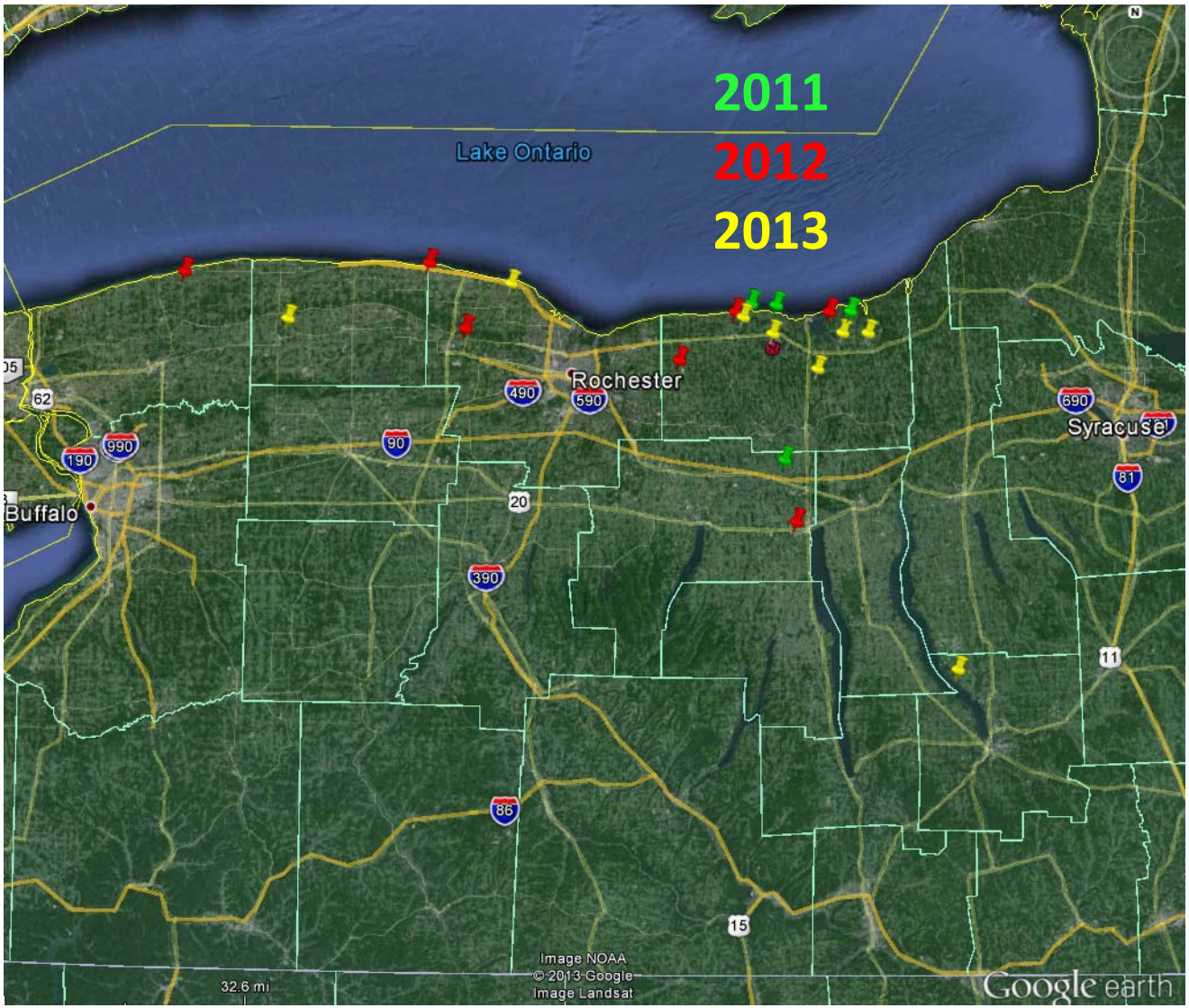
- 67 loads to date
- 78 apples
- 85 worms, 10 OFM/LAW and 75 CM
- Compared to over 500 loads in 2012 and 1200 worms

- SUCCESS!!!

Fire blight – Strep resistant survey

- 2013 – 8 new farms with 18 samples resistant to strep
- 2012 – 9 farms
- 2011 – 5 farms

Streptomycin resistant strains of Ea



Fruit Russett ?