Impact of LW on avocado production in South Florida

Jeff Wasielewski, Commercial Tropical Fruit Crops Extension Agent, UF/IFAS Extension Miami-Dade County

Jonathan Crane, Tropical Fruit Crop Specialist, UF/IFAS Tropical Research and Education Center

Edward Evans, Agricultural Economist, UF/IFAS Tropical Research and Education Center

LW-AB California Extension Program 2019

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- *University of Florida/IFAS – Extension and Research*
- *UF/IFAS Extension Miami-Dade County*
- *Florida Avocado Administrative Committee*
- *Florida Department of Agriculture and Consumer Services – Division of Plant Industry*
- *California Avocado Commission*
- *University of California Extension*

Today's agenda

Speaker	Topic
Jeff Wasielewski	*The current status of laurel wilt in South Florida*
Romina Gazis	*Laurel wilt epidemiology and management*
Bruce Schaffer	*Vascular physiology and anatomy of different avocado genotypes relative to laurel wilt susceptibility*
Daniel Carrillo	*Laurel wilt vectors: biology and management*
Fredy Ballen	*Economic impact and economics of control strategies*
Jonathan Crane	*Current control strategies, recommendations and issues*
Questions - answers	

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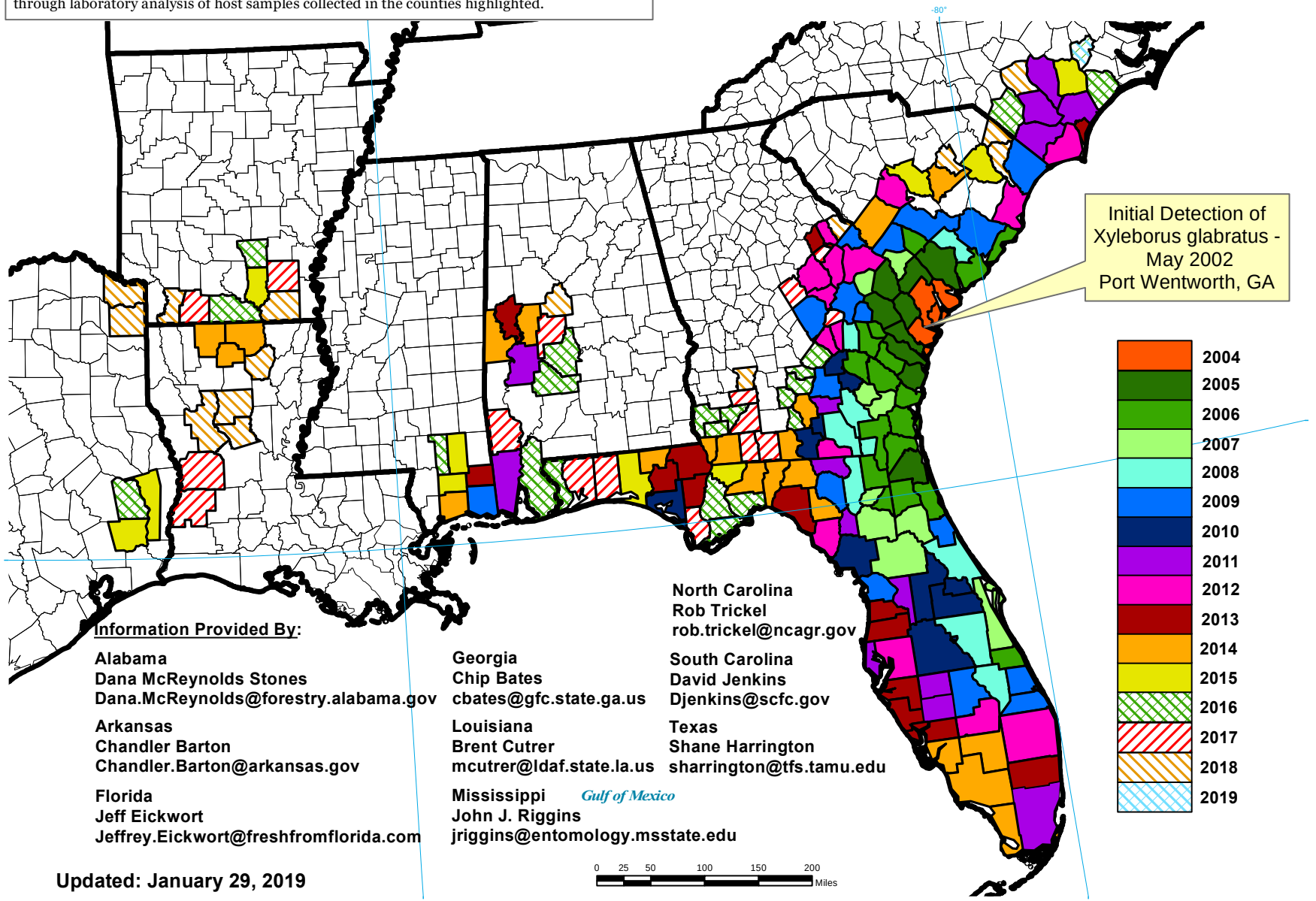
LW has been detected in eleven southern states

Distribution of Counties with Laurel Wilt Disease* by year of Initial Detection

* Laurel Wilt Disease is a destructive disease of redbay (Persea borbonia), and other species within the laurel family (Lauraceae) caused by a vascular wilt fungus (Raffaelea lauricola) that is vectored by the redbay ambrosia beetle (Xyleborus glabratus).The pathogen has been confirmed through laboratory analysis of host samples collected in the counties highlighted.



Information Provided By:

Alabama
Dana McReynolds Stones
Dana.McReynolds@forestry.alabama.gov

Arkansas
Chandler Barton
Chandler.Barton@arkansas.gov

Florida
Jeff Eickwort
Jeffrey.Eickwort@freshfromflorida.com

Georgia
Chip Bates
cbates@gfc.state.ga.us

Louisiana
Brent Cutrer
mcutrer@ldaf.state.la.us

Mississippi
John J. Riggins
jriggins@entomology.msstate.edu

North Carolina
Rob Trickel
rob.trickel@ncagr.gov

South Carolina
David Jenkins
Djenkins@scfc.gov

Texas
Shane Harrington
sharrington@tfs.tamu.edu

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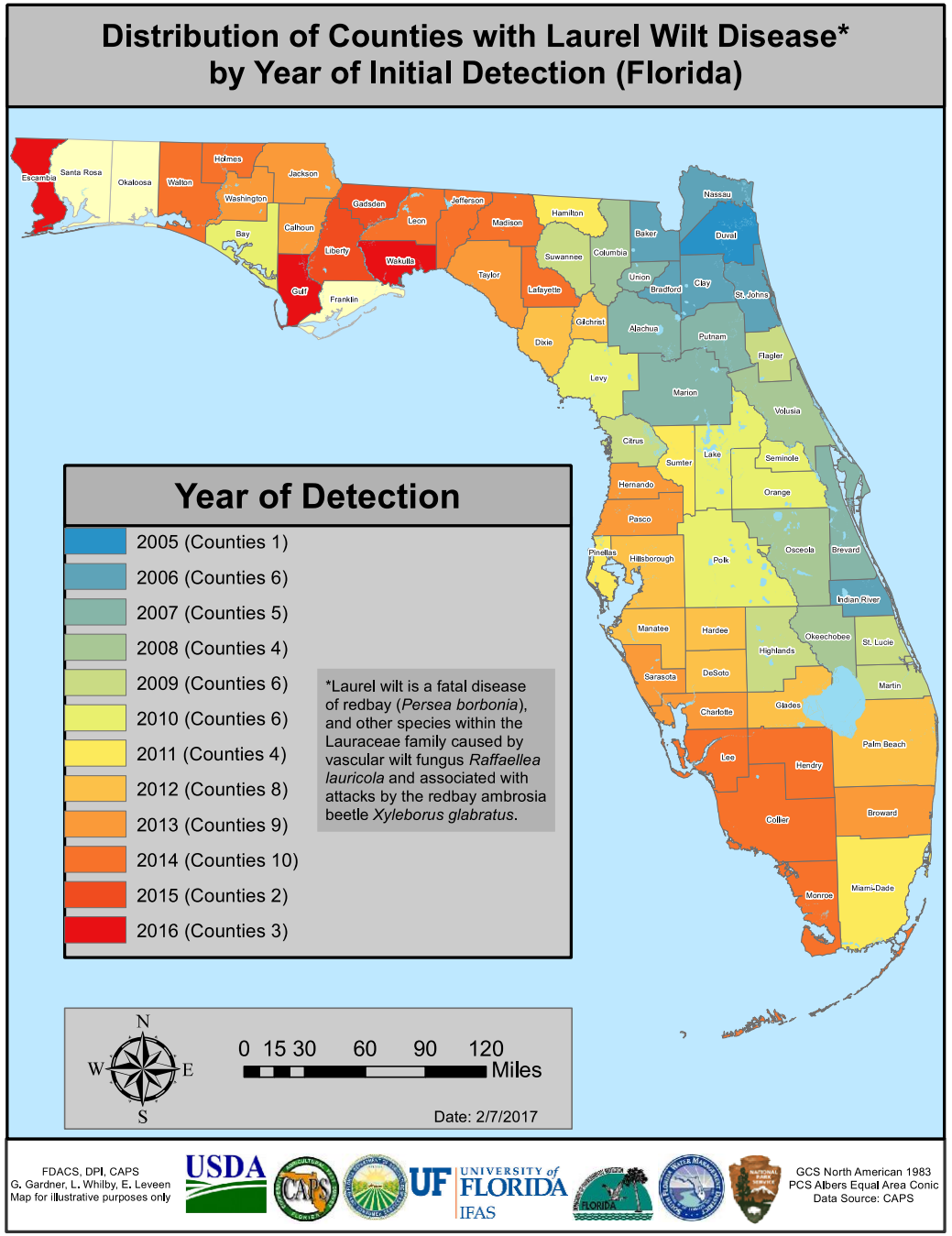
LW has been detected everywhere in Florida



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Save the Avocado

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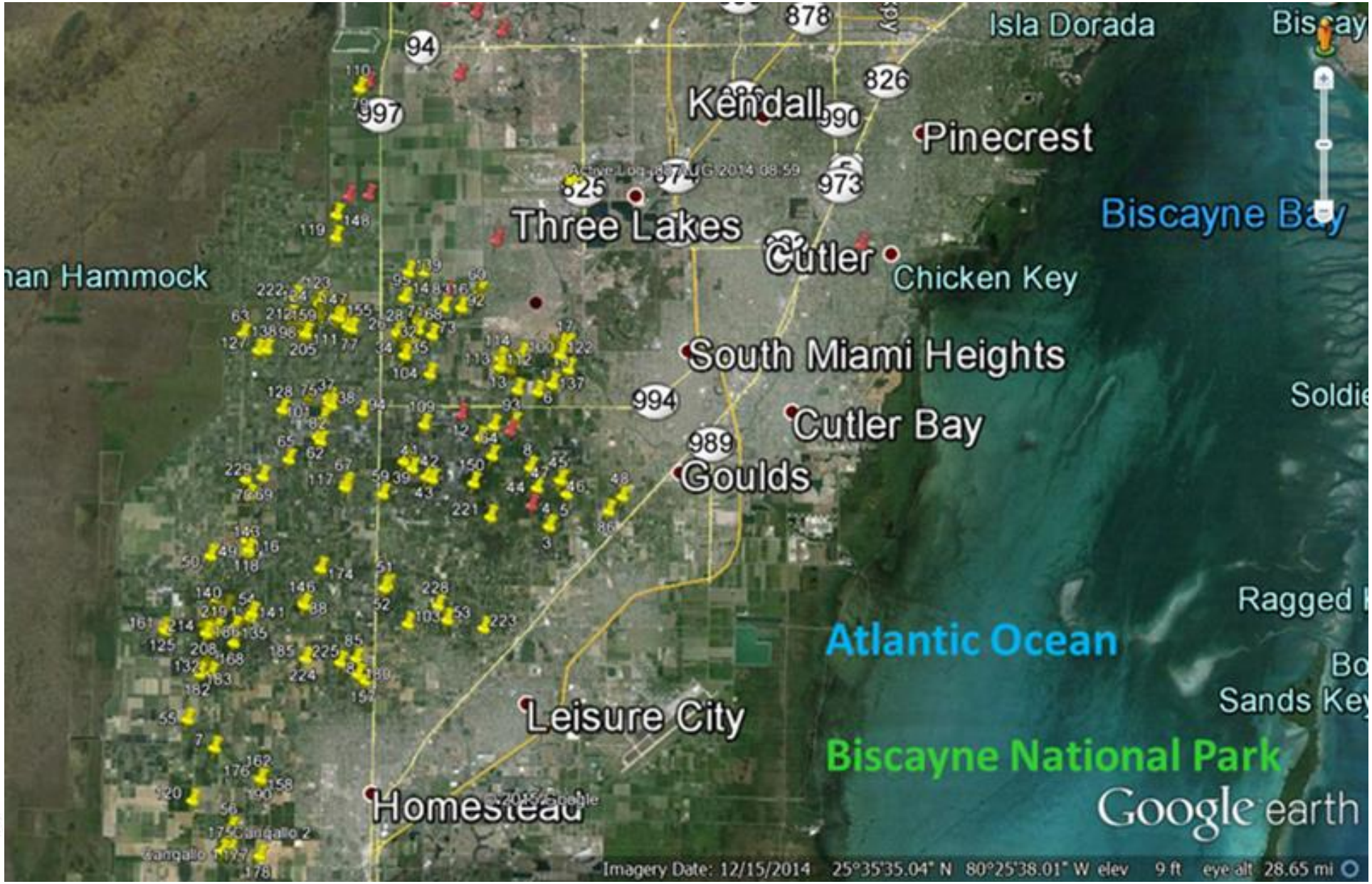
LW has been detected everywhere in the avocado production area



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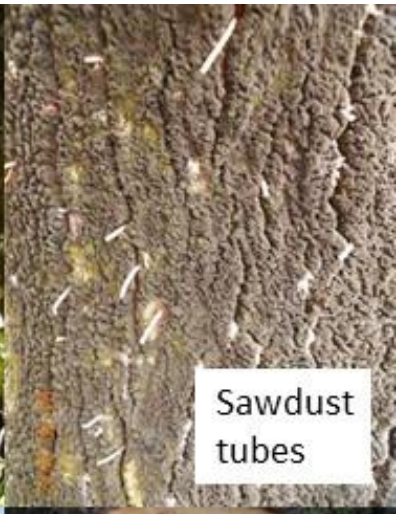
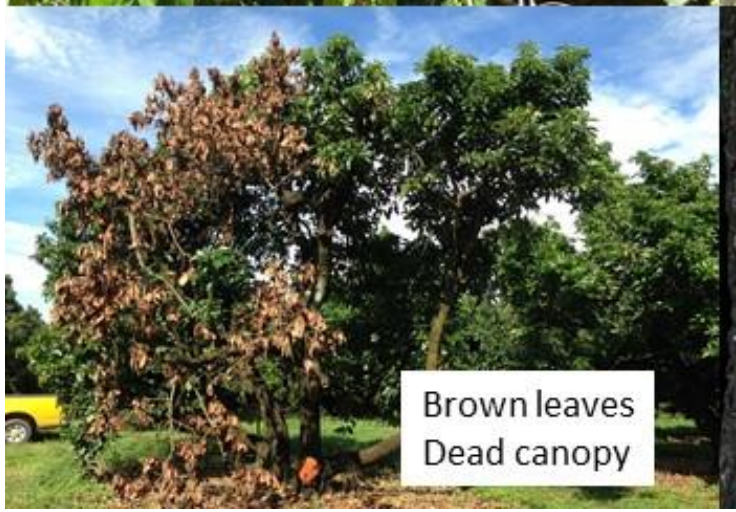
Symptoms

Sectorial - common

Typical symptoms





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Ambrosia beetle symptoms

Sawdust

Boring - galleries

Photo credit: D. Carrillo, UF/IFAS TREC

Gallery intensity

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Symptoms

Healthy avocado sapwood, white or off-white in color

Unhealthy avocado sapwood, brown-black streaks

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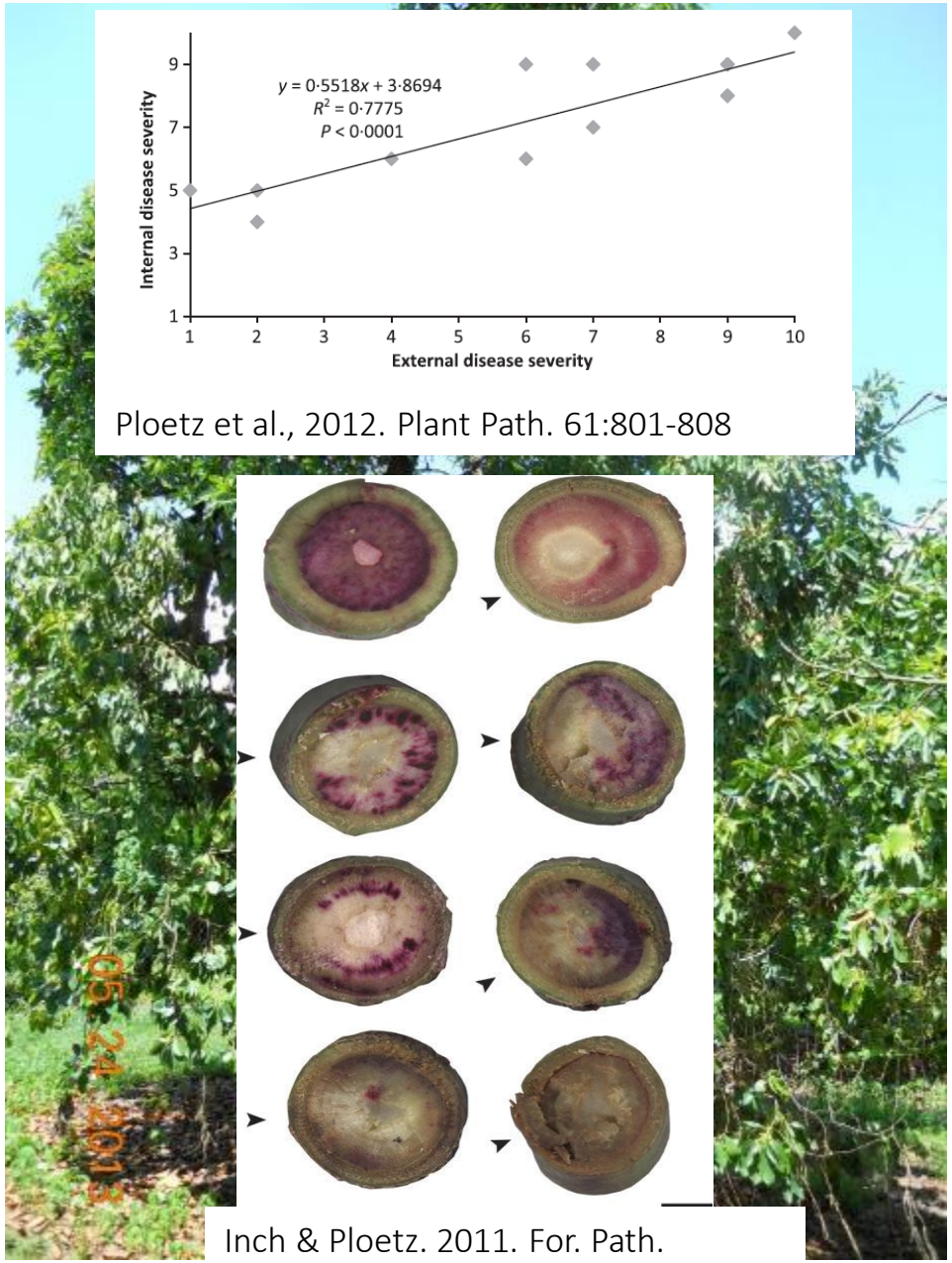

Ploetz et al., 2012. Plant Path. 61:801-808

Inch & Ploetz. 2011. For. Path.
doi: 10.1111/j.1439-0329.2011.0049.x

The do-nothing approach

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Spread continues – root-grafts and ambrosia beetles

Root-grafts

Ambrosia beetles

Improved, less expensive tree removal system

New method, knock tree over and grind ($65/tree); <30 min.

Older tree-destruct method $75-$150/tree; days

Cultivars affected

- No resistance found
- Thirty-two documented mature tree avocado cultivar LW hosts
- Disease progress varies
  - ‘Simmonds’ vs ‘Monroe’

Arue	WI	Choquette	G-WI
Bernecker	WI	Hall	G-WI
Day	WI	Loretta	G-WI
Donnie	WI	Lula	G-WI
Dupuis	WI	Miguel	G-WI
Hardee	WI	Monroe	G-WI
Peterson	WI	Nadir	G-WI
Pollock	WI	Nesbitt	G-WI
Russell	WI	Tonnage	G-WI
Simmonds	WI	Tower-2	G-WI
Waldin	WI	Wheeling	G-WI
Beta	G-WI	Brogdon	G-M-WI
Booth 7	G-WI	Marcus Pumpkin	G
Booth 8	G-WI	Winter Mexican	G-M
Brooks Late	G-WI	Toni	Nd
Buck II	G-WI	Jim Lapeck	Nd

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Florida avocado industry

- Avocado, Florida's fourth largest fruit crop (citrus>strawberry>blueberry>avocado)

Florida's avocado industry (125 sq mi area)

- ~7,400 acres in 2012 down to 6,200 acres in 2019 (~16% loss; all causes)
- ~430 growers, 35 handlers
- Wholesale value, US $35 million
- Overall economic impact, ~US $100 million
- About ~1,200 acres lost

Evans et al., 2010. Potential economic impact of laurel wilt disease on the Florida avocado industry. HortTech. 20:234-238; Evans et al., 2015. Cost-benefit analysis of area-wide management of laurel wilt disease in Florida commercial avocado production area. Actas Proc., VIII Congreso Mundial de la Palta. p.467-470 and; Evans, E.A. and J.H. Crane. 2016. Estimates of the replacement costs of commercial and backyard avocado trees in south Florida. Food and Resource Econ. Dept., UF/IFAS Extension. 3 pages. [https://edis.ifas.ufl.edu/fe825].

Economic impacts

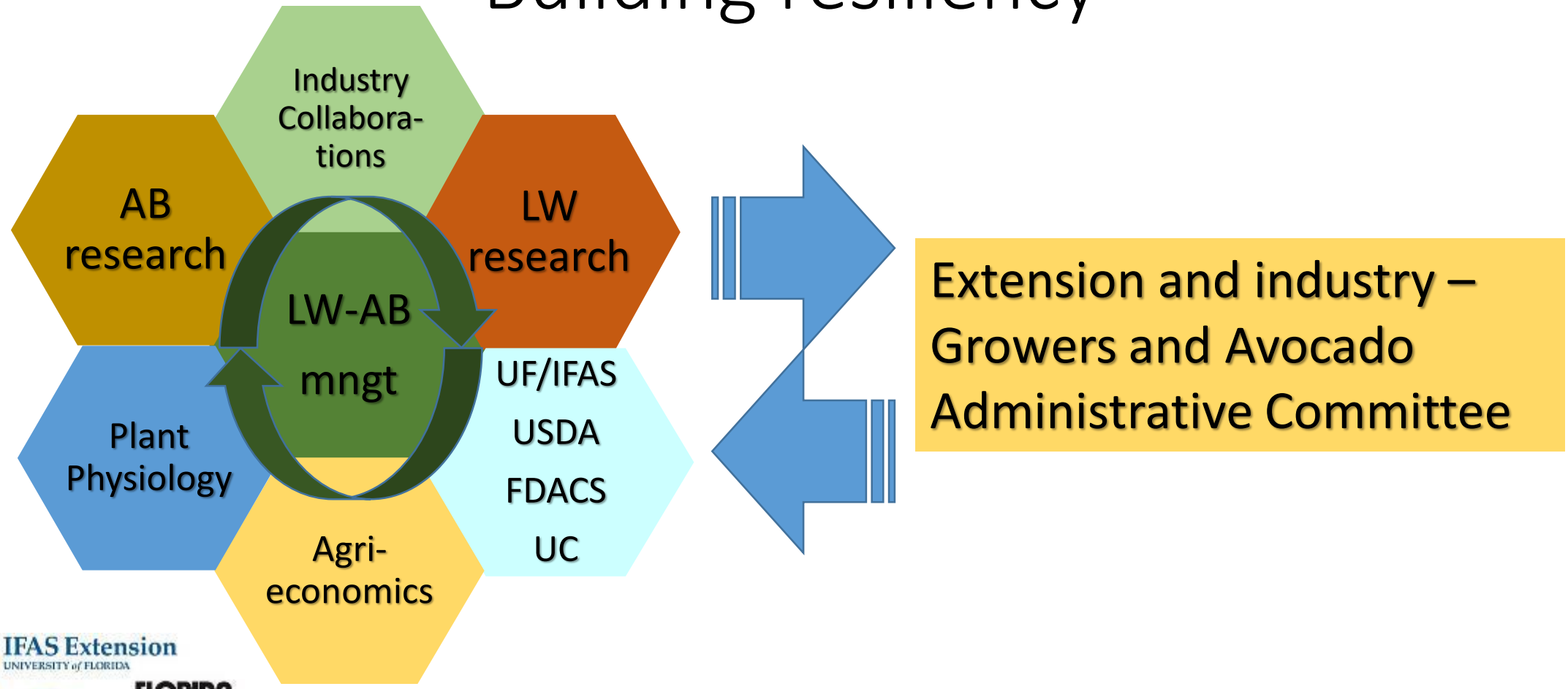
- The loss of an estimated 120,000 commercial avocado trees may be attributed to LW
  - Succumb to LW pathogen
  - Adjacent trees
  - Abandoned/removed sections of groves (or groves)
  - Pre-emptive grove removal

- Value commercial tree brought to full production, ~$350
  - $42 million tree loss value
- Assume ~165 bu/acre and value of ~$20/bu
  - ~$3.96 million avocado sales loss

Evans & Crane. 2013. EDIS FE825. 3 pages.

Evans & Lozano. 2014. EDIS FE837. 6 pages.

The way forward – continued collaborations Building resiliency



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FDACS/DPI Helpline, 888-397-1517

DPI links

www.fl-dpi.com
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