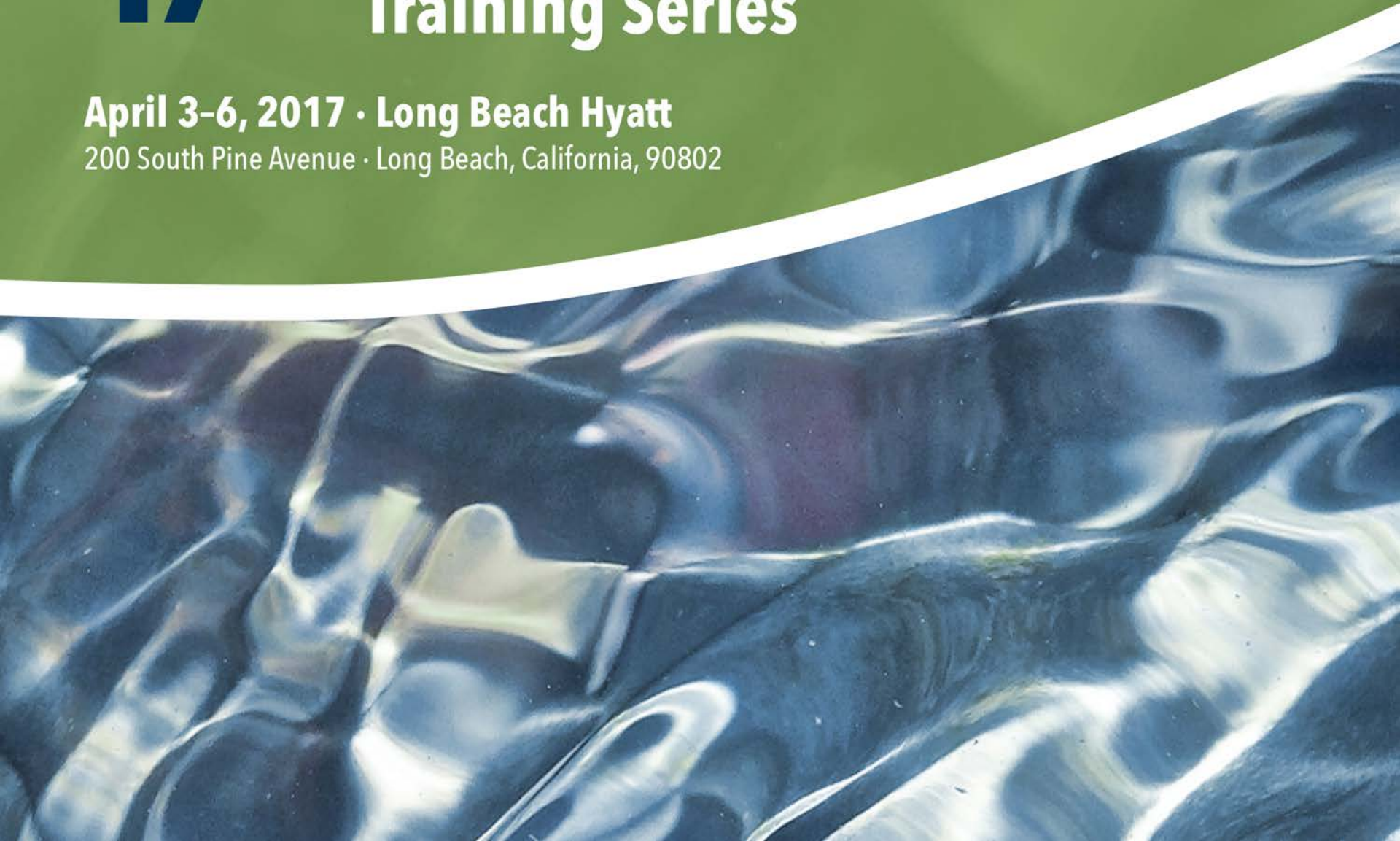


17th Technical Training Series



April 3-6, 2017 · Long Beach Hyatt
200 South Pine Avenue · Long Beach, California, 90802





Pests, Quarantines and Green Materials Movement

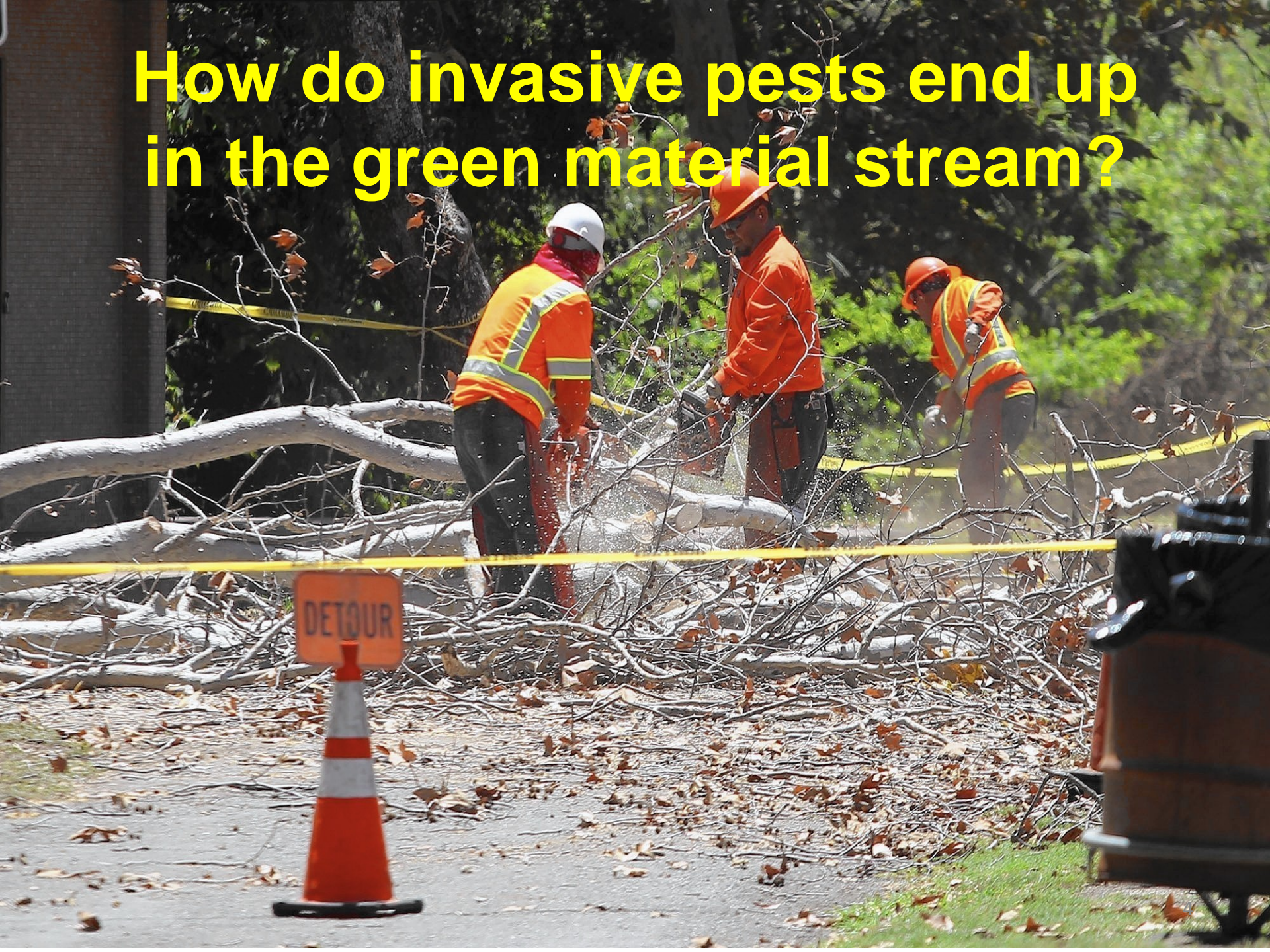


LEA Technical Training Series 2017

This presentation

- Pest Prevention University 2017
- Asian Citrus Psyllid & Huanglongbing
- Fruit flies and moths
- Shot Hole Borers
- Palm Weevils
- Direct Land Application
- Quarantines and compliance agreements

How do invasive pests end up in the green material stream?



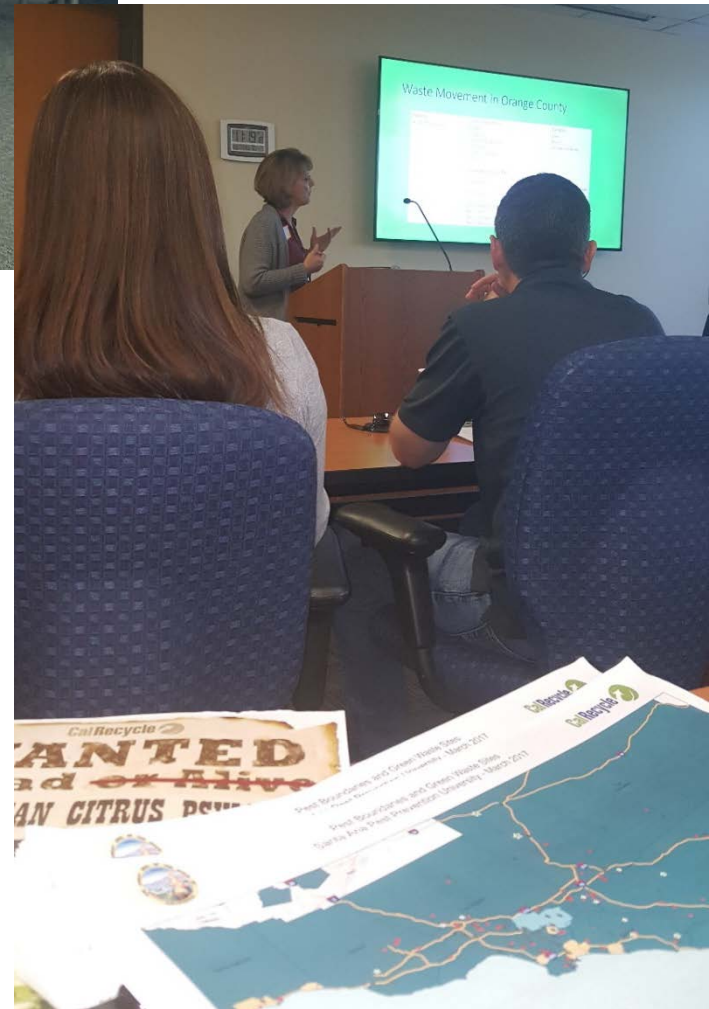
2017 Pest Prevention University

- Annual CDFA training for County Agricultural Commissioner (CAC) Staff
- Co-hosted and supported by CalRecycle
- Focused on green materials movement
- 5 locations around California: Dublin, Tulare, Ventura, Chino & Santa Ana
- Unique opportunity for LEA-CAC discussions



Thank you LEA Community

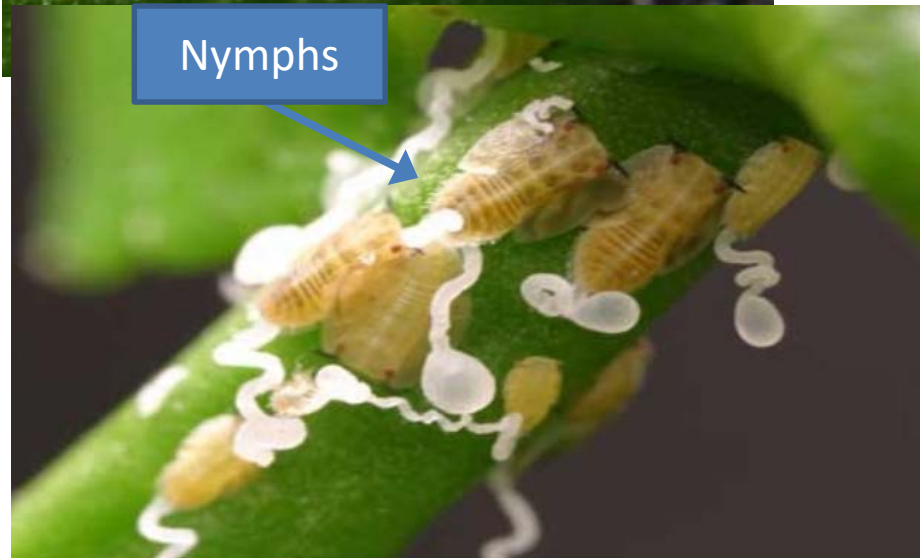
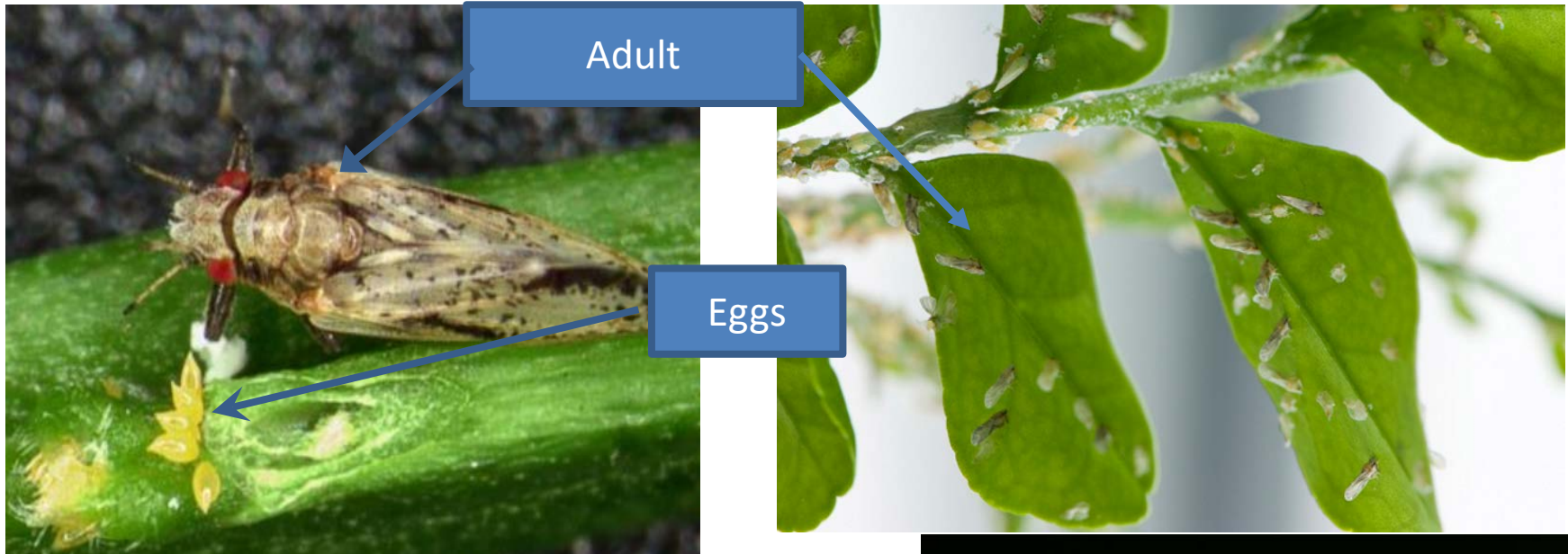
For the tremendous support
and participation at the five Pest
Prevention University events



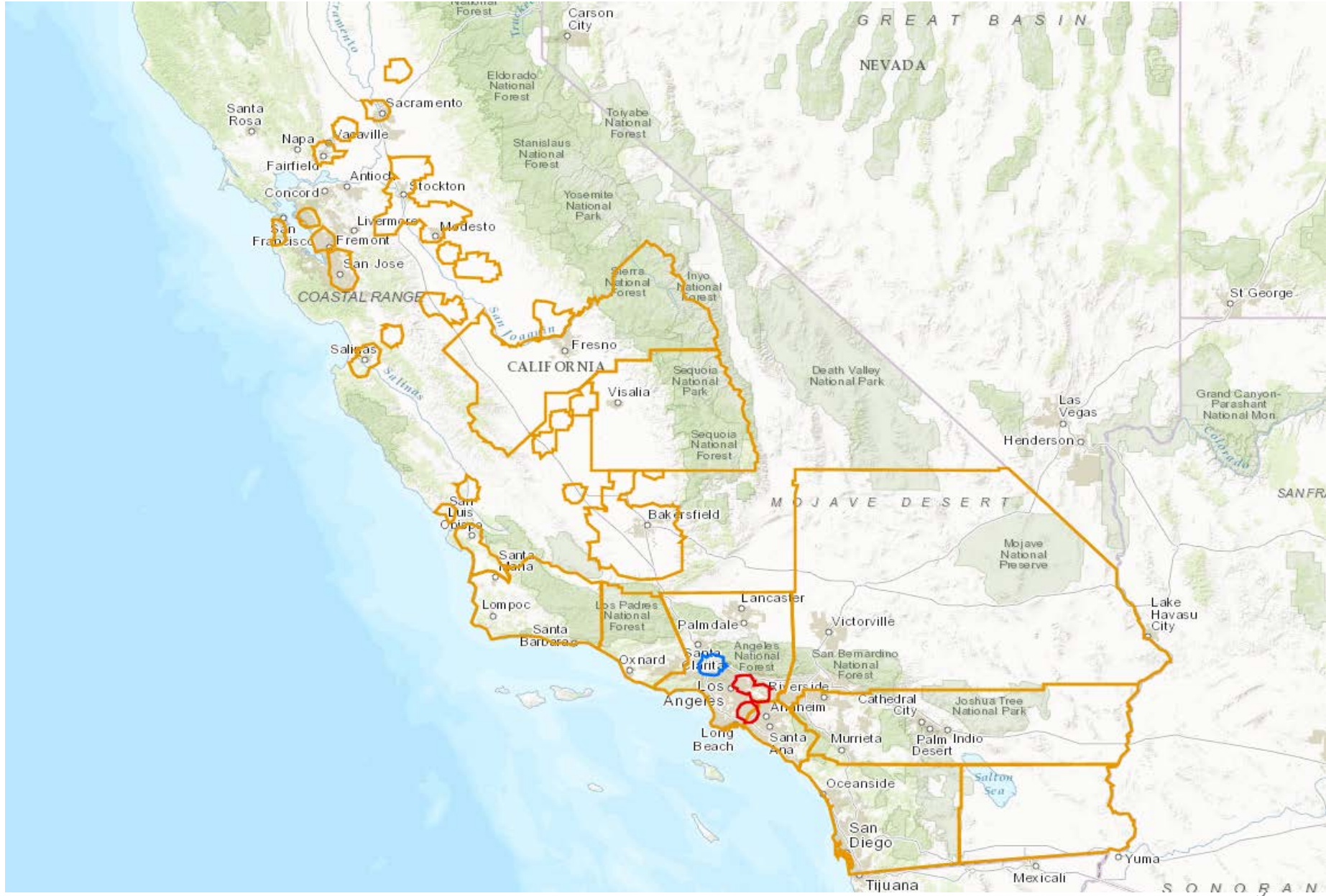
Lessons learned from PPU's

- Significant opportunities for collaboration
- CAC-LEA co-inspections of green material sites can be helpful to both
- Need to prioritize green material sites for quarantine compliance
- Need to get large haulers involved
- Composting is a mitigation practice
- Direct Land Application poses biggest threat

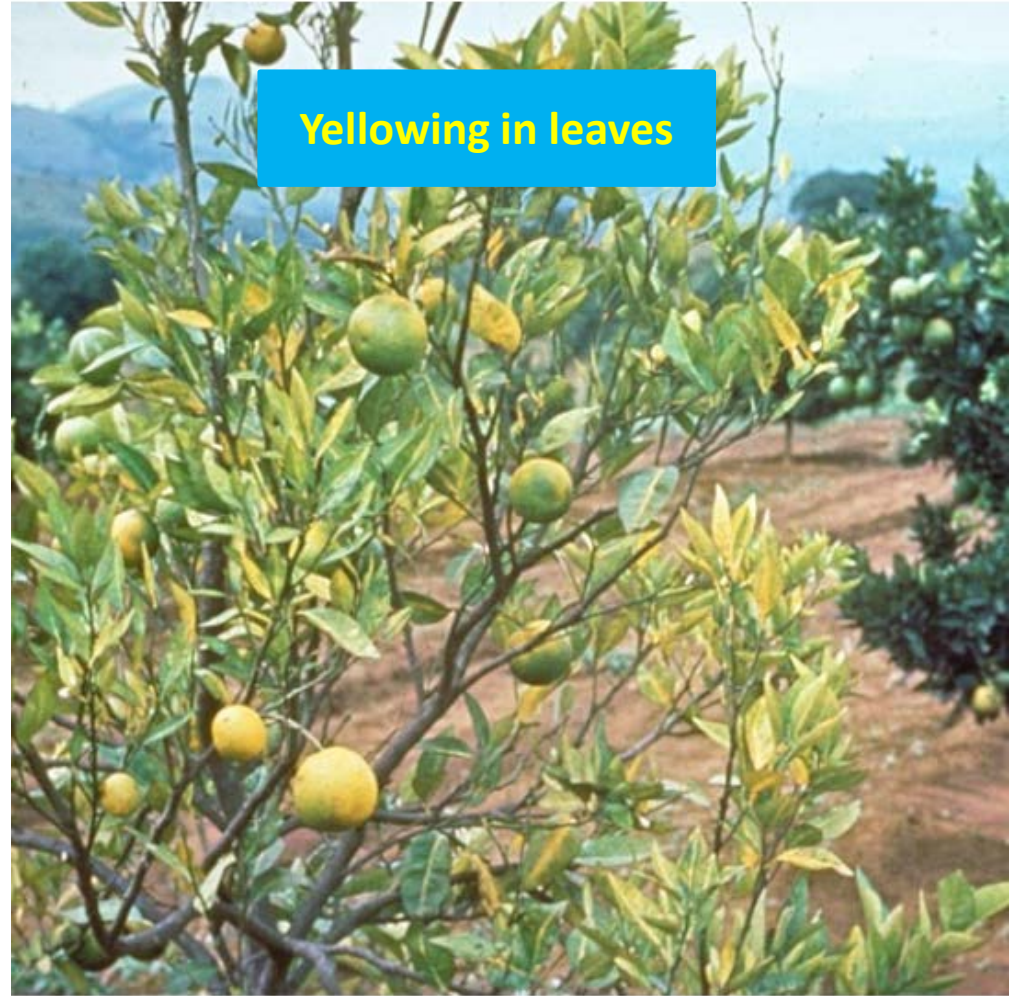
Asian Citrus Psyllid (ACP)



Current Asian Citrus Psyllid Quarantine Zones



Huanglongbing (HLB) Symptoms



Small, misshapen, bitter fruit—NOT SALABLE

Citrus in California

- \$2 billion a year industry; 22,000 jobs
- More residential citrus trees than commercial
- At least half of residential properties in Los Angeles have one or more citrus trees
- Oranges CA's 6th most valuable export

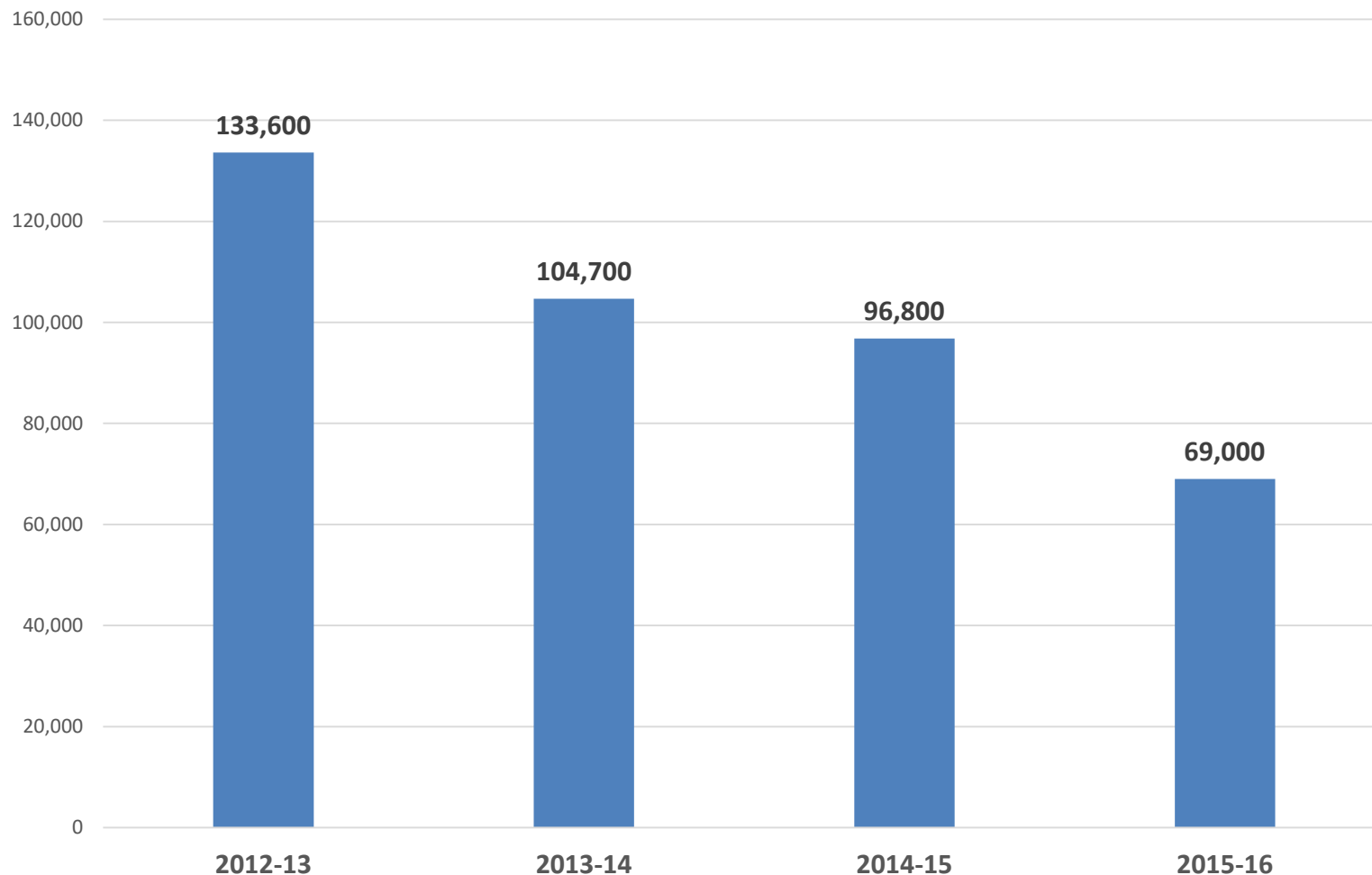


Huanglongbing in California

- Since 2012, >20 instances of HLB (citrus greening) in Southern California
- **ALL on residential trees**
- Neglected or stressed residential trees are perfect ACP hosts
- When sick/infested trees are trimmed, pests can enter green materials stream
- **Citrus stems and leaves** are the quarantined material
- Live psyllids with disease found in LA

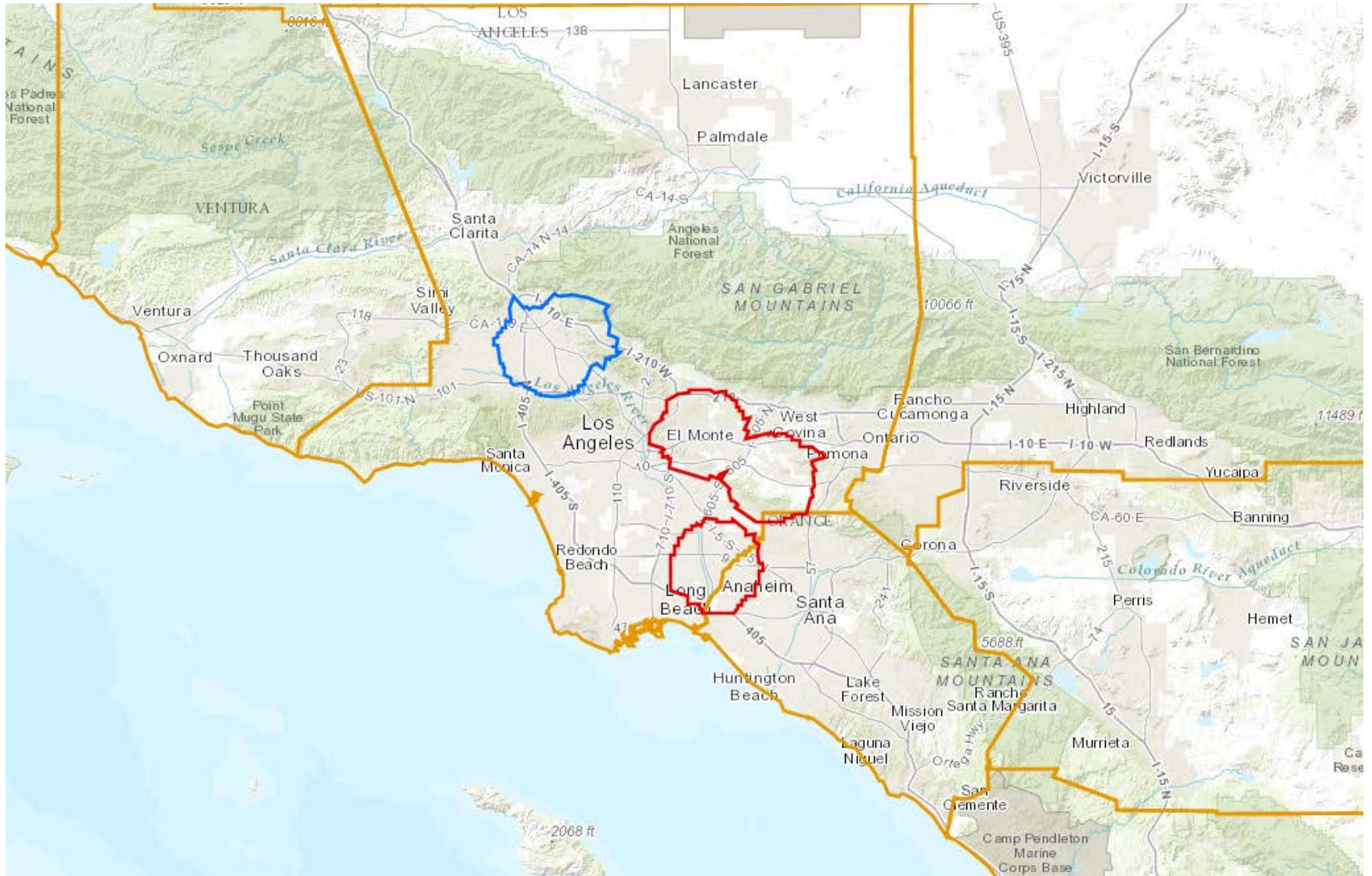
Florida Orange Production, 2012-2016 Seasons

X1000 boxes



Although other factors are present, this is mostly due to the invasion of the ACP and the disease it carries, HLB or citrus greening.

2017 Huanglongbing and Medfly Quarantine zones



Fruit Flies

Mediterranean (Medfly), Melon, Oriental etc.



Medfly



Melon



Oriental

- Attack hundreds of types of fruits, nuts, vegetables, and berries.
- Fruit and soil, **not green materials**, are the quarantined materials

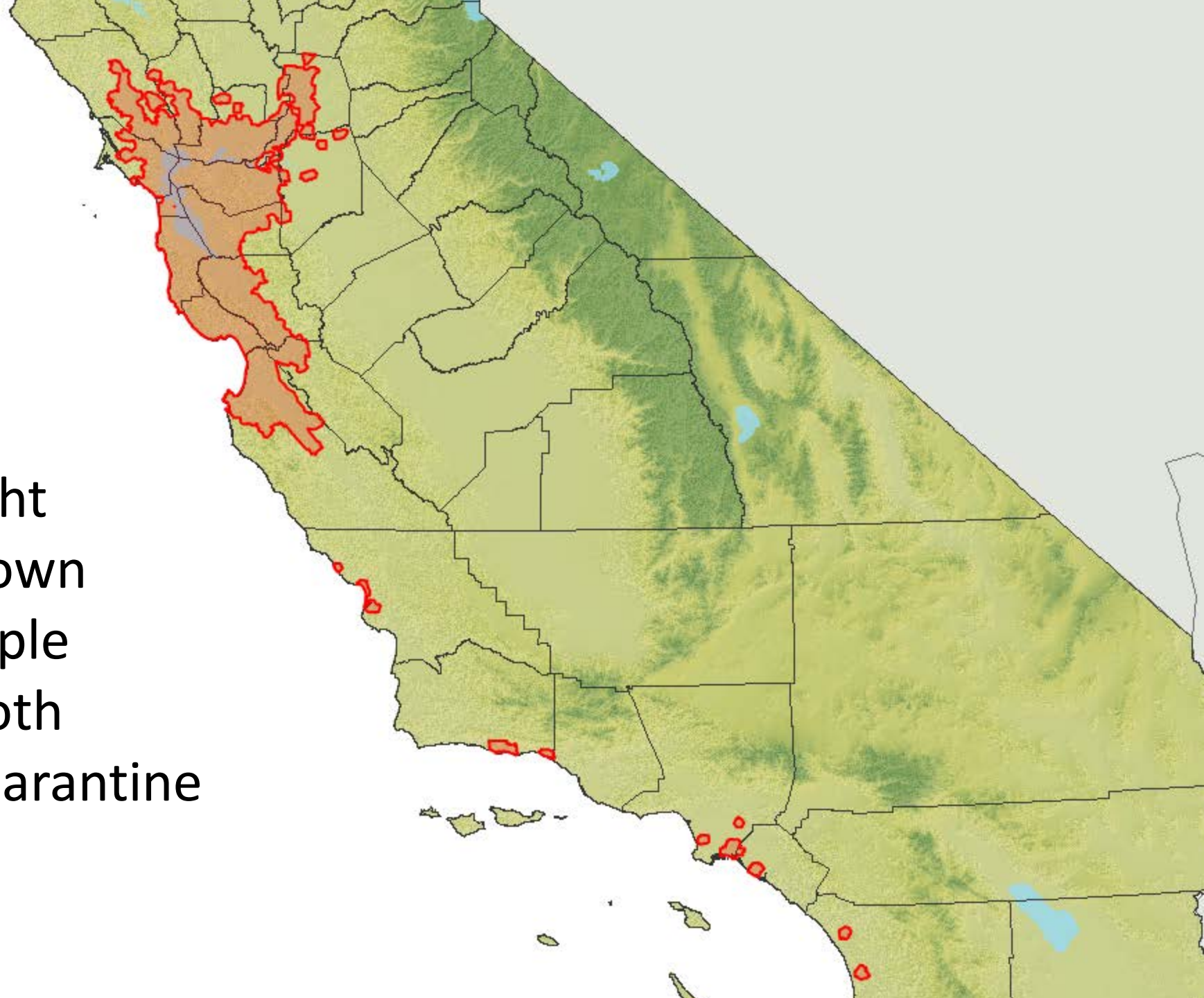
Moths

Light brown
apple moth;
leaves are the
quarantined
material

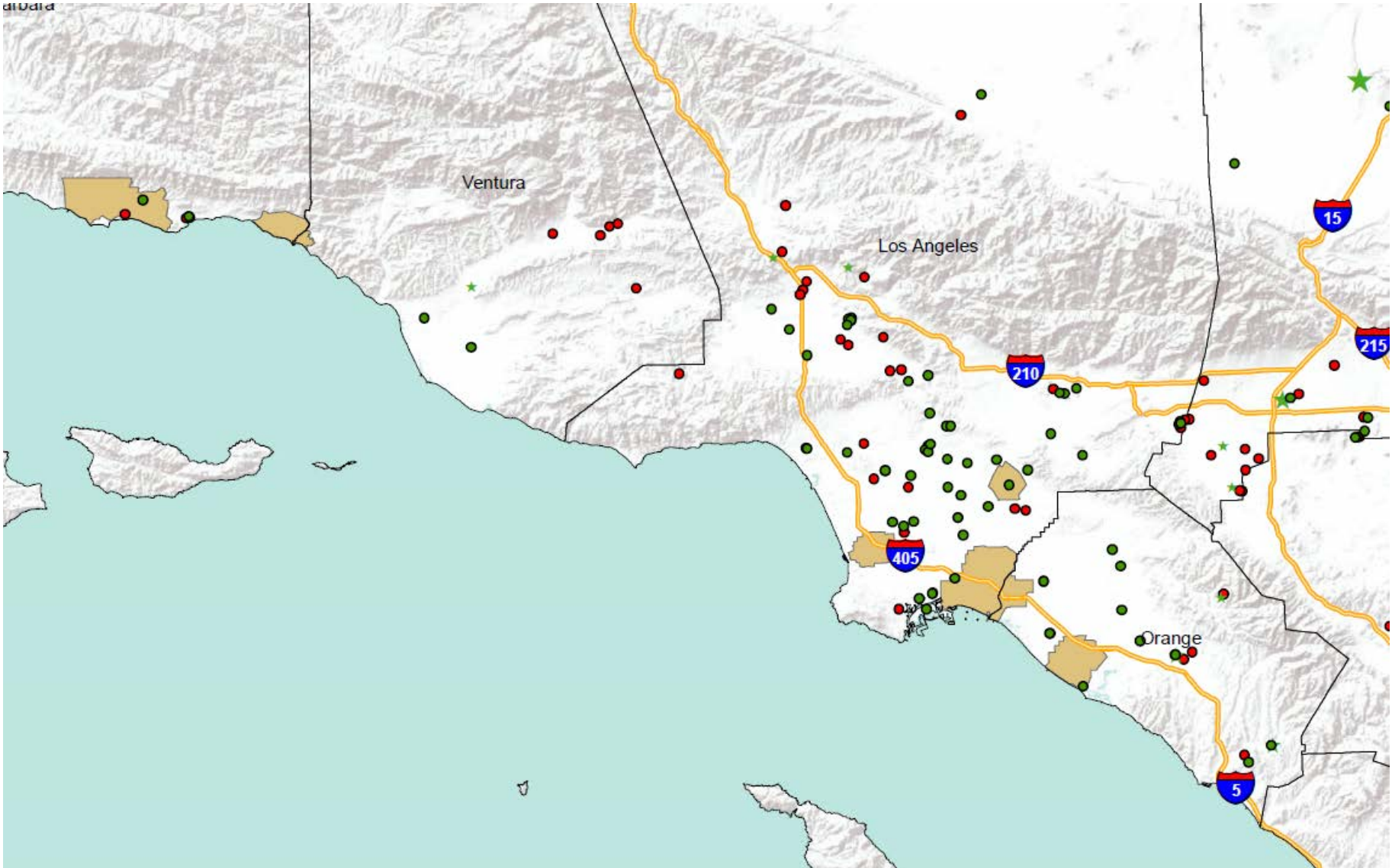


European grape
vine moth
(eradicated!!!)

Light
Brown
Apple
Moth
Quarantine



2017 Southern California Light Brown Apple Moth Quarantine



Shot Hole Borers

(No quarantine established... yet)

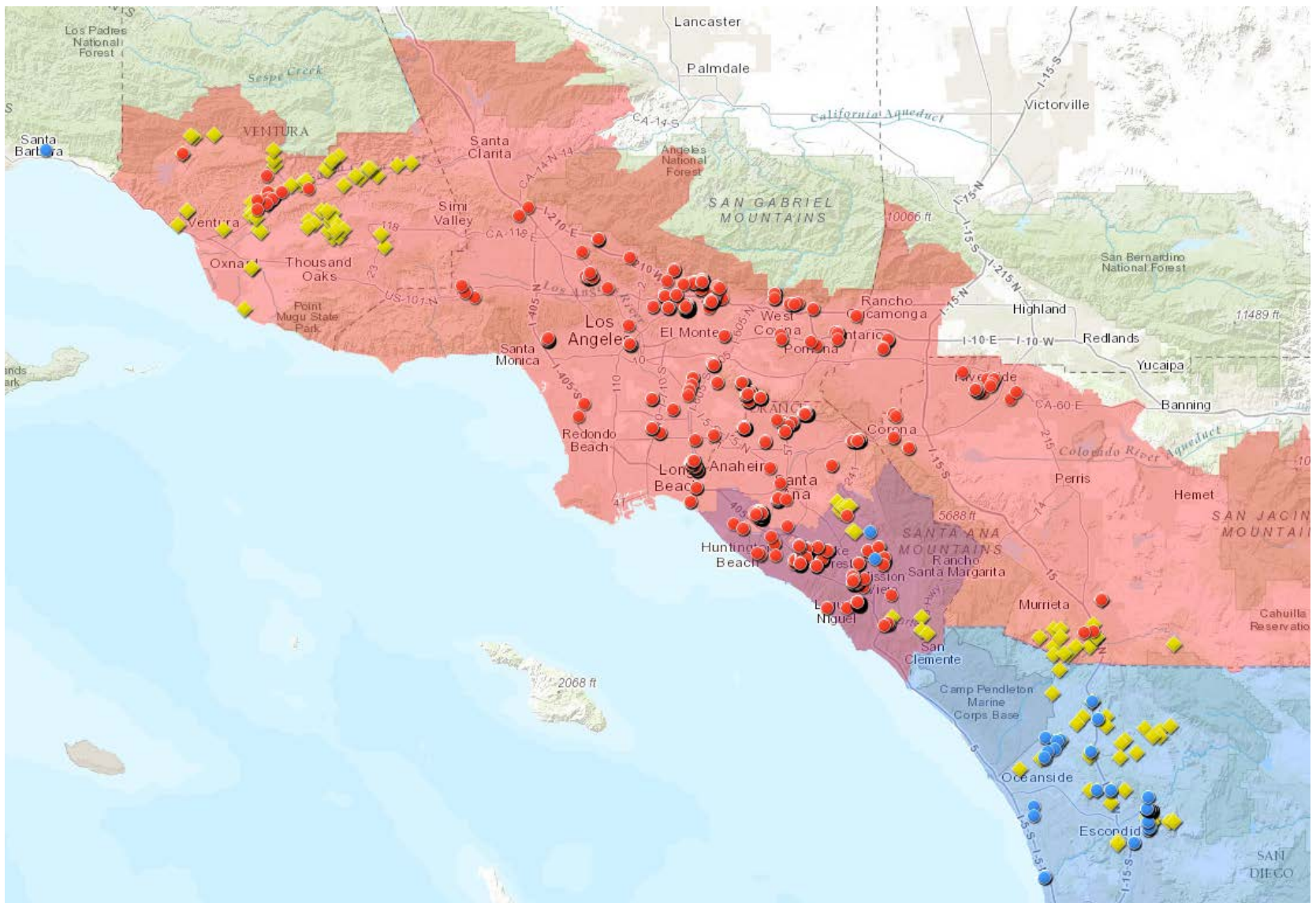


Nearly 1,000 trees removed by Orange County Parks due to shot hole borers; 2,500 more infested



Fusarium dieback caused by fungal pathogens





Shothole borer beetle mapping through 2017

Palm Weevils

- No quarantine; not established in CA
- Established in Northern Mexico
- Adults can fly 25 miles in a day!
- Kill all types of palm trees
- Often cannot see infestation until too late.



Palm Weevil life stages & damage



What is Direct Land Application?

- Spreading uncomposted green materials on farmland or other types of property
- Materials may:
 - come from chip and grind or from transfer stations
 - be ground and/or sifted
 - be picked clean of trash (hopefully)
 - be sold/hailed by middlemen or brokers
- A potential pathway for quarantine violations?

Rules for Direct Land Application

- On land zoned for:
 - **Agriculture only:** up to 3 applications per year not to exceed 12” total depth
 - **All other uses:** 1 application per year not to exceed 12” total depth
- Same pathogen, metal and inert contaminants standards as finished compost
- Must maintain records and provide upon request
- LEA may approve other frequencies/depths in consultation with Regional Water Quality Control Board and/or CDFR

When DLA goes wrong...



Federal/State Quarantines

- Enforced by USDA, CDFA and County Agricultural Commissioners.
- Quarantines prohibit movement of green material unless specific conditions are met.
- Compliance agreements outline specific conditions that allow green materials to move.
- To obtain a Compliance Agreement facility operators contact--or are contacted by--County Agricultural Commissioner.

What is a compliance agreement?

- A binding agreement between a regulatory agency and the handler of regulated materials
- Identifies a handler who needs to transport or distribute quarantined materials
- Affirms that the handler will process or transport materials only under certain conditions.
- States those conditions

Who needs a compliance agreement?

- Green waste haulers picking up materials from active quarantine zones
- Transfer stations where green materials from quarantine zones are aggregated
- Chip and grind sites handling materials from quarantine zones
- Composting sites
- Landfills
- Every entity in the chain of custody!!!

Links

- Calrecycle quarantines info page:
<http://www.calrecycle.ca.gov/organics/threats/>
- Organics publications (including posters)
<http://www.calrecycle.ca.gov/Publications/PublicationsByCategory.aspx?CategoryID=18>
- CDFA Pest Exclusion Branch
<https://www.cdfa.ca.gov/Plant/pe/>

A photograph of an orchard with rows of orange trees. A gravel path leads from the foreground into the distance between the rows of trees. The trees are lush green and have many ripe, orange-colored fruits hanging from their branches. The sky is bright and clear.

Questions?
Suggestions?

Bob Horowitz
916-341-6452

robert.horowitz@calrecycle.ca.gov