



Urban Pests Fun-time update

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Slides and images
from

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Today's menu (Northern CA, Southern CA, everywhere)

1. Plum bud gall mite

2. Invasive Shothole borers

3. Boxwood blight

4. Walnut Twig Beetle

5. Madrone Leafminer (?)

6. Asian Citrus Psyllid / Huanglongbing

7. Mediterranean oak borer

8. New cockroaches

Plum Bud Gall Mite

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Plum Bud Gall Mite

Acalitus phloecoptes

- Since 2019, SF Bay Area
- Native to Europe and the Middle East, reported on genera *Prunus* and *Cotoneaster*
 - Almond, Apricot, Peach, Plum
 - **But MOSTLY plums or pluots**



PBGM Damage

- injury is variable, host-dependent
- infestations have led to
 - weakened trees
 - decreased yield, or
 - in some cases, the death of the tree
- In other cases, **trees have recovered**, and some cultivars are known to be resistant



Treatment: Homeowners

- Prune affected parts
- Double-bag in a garbage bag
- Solarize the bag (no specific time, but longer is better)
- After several weeks of hot weather, throw in trash
- Sulfur application



Treatment: Commercial

- Spray at the spring emergence of adults and beginning of gall formation
- Sulfur: 8 or 9 sprays, weekly (82-87% effective)
- Sevin SL (Carbaryl) once, (100% effective)
- UC IPM Eriophyid Mite
- Report the finds to the Ag Commissioner





Shothole Borers

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Shothole borers: <https://ucanr.edu/sites/pshb/>

Staffing Plan Web HLB Recommendations Invasive Shot Hole Borers


<https://ucanr.edu/sites/pshb/>

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Invasive Shot Hole Borers

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Polyphagous and Kuroshio Shot Hole Borers



Get PSHB Updates

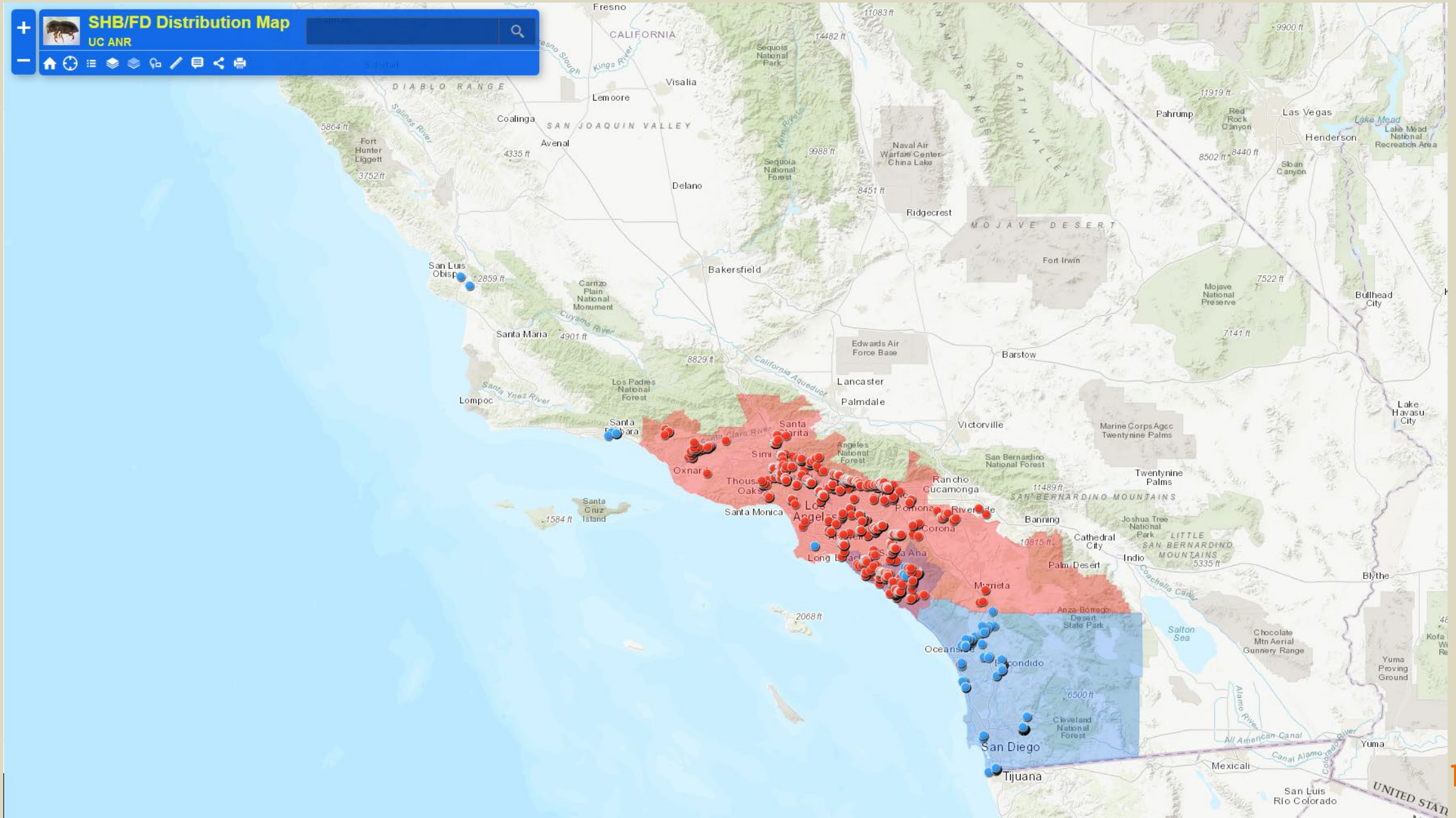
Join the ISHB Email List

For Email Marketing you can trust.

Online Training

ISHB on-line training! The course is served by the

Shothole borers: <https://ucanr.edu/sites/pshb/>



Shothole borers update from John K.

1. Monitoring is key (visual and trapping)
2. So: have a tree inventory before the borers arrive!
3. Amplifier trees: identify and remove
4. Low-to-medium severity: imidacloprid (soil, injection), bifenthrin (bark); dinotefuran?
5. Also, fungicides: tebuconazole, Bac. Subtilis
6. IF monitored, then OK to only treat infested trees
7. Borers LOVE *Botryosphaeria*: so, remove Bot canker-infested branches, and check for Bot!

Boxwood blight

Calonectria pseudonaviculata
(=*Cylindrocladium buxicola*)



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Easily moved by touch
Can sweep through quickly
Needs warm and humid conditions



Signs and Symptoms

Look for the black
stem lesions!

And:

Leaves falling off
(if leaves cling, then
it is something else)



Other Diseases of Boxwood with Similar Symptoms

Volutella



Winter Browning



Phomopsis
dieback



Management: Careful!

- <> Wear disposable PPE (if possible)
- <> Double-bag and transport to landfill
- <> Sanitize all equipment used

Lessons learned: West \neq East

- **not** 100% lethal if treated appropriately
- there are plenty of resistant species/cv.
- the information found online from eastern states is fine, but **does not** accurately portray the situation in the west



Walnut Twig Beetle and the Thousand Cankers Disease



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Steve Seybold
1959-2019
USDA FS &
UC Davis



Walnut Twig Beetle (WTB) *Pityophthorus juglandis*



Developmental hosts: walnuts!

- *J. ailantifolia*
- *J. californica*
- *J. cathayensis*
- *J. cinerea*
- *J. hindsii*
- *J. major*
- *J. mandshurica*
- *J. microcarpa*
- *J. mollis*
- *J. nigra*
- *J. regia*
- *J. sinensis*
- *J. hindsii* x *regia*

Not
confined
to twigs!

Male
WTB



WTB entrance hole on lenticel



Gallery system

In California:

2-3 generations per year
Flies year round with
peaks
in May-June and Aug-Oct

Walnut Twig Beetle (WTB) *is small... really small...*



1.0 mm



Walnut twig beetle
Pityophthorus juglandis



Invasive shot hole borer (F)
Euwallacea spp.



Invasive shot hole borer (M)
Euwallacea spp.



Fruit-tree pinhole borer
Xyleborinus saxeseni



Hypothenemus eruditus



European elm bark beetle
Scolytus multistriatus



Western oak bark beetle
Pseudopityophthorus pubipennis



Yellow-banded ambrosia beetle
Monarthrum fasciatum



Fruit tree shothole borer
Scolytus rugulosus

WTB holes are tiny, but cankers under bark are noticeable



Crown Symptoms



Healthy



Thinning



Dying

Management

- Wood sanitation
 - Many months for beetles to stop emerging
 - Seasoning wood 2-3 years
 - Removal of infested wood and prunings in winter
 - Steam heating 56 C for 40 min (Mayfield et al. 2014)
- No insecticide or fungicide options at this time
- Systemic insecticides are being tested for protecting high-value trees

<http://ipm.ucanr.edu/PMG/menu.thousandcankers.html>



Statewide Integrated Pest Management Program

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Thousand cankers disease and walnut twig beetles in California

Thousand cankers disease, caused by the fungus *Geosmithia morbida*, is killing walnut trees in California and threatens wildland and landscape trees as well as commercial walnuts.

The fungus is spread by a tiny bark beetle, the walnut twig beetle, *Pityophthorus juglandis*. The fungus enters the tree through the feeding or reproductive activities of the beetle, and colonizes and kills the phloem and cambium of the branches and main stem. As the beetles and pathogen spread, small cankers form and coalesce, girdling branches. Thousand cankers disease gets its name from the large number of dark cankers that rapidly develop on affected branches.

Online information

- [Thousand Cankers Disease Overview](#)

Downloadable guides

- [Field Identification Guide: Walnut Twig Beetle and Thousand Cankers Disease](#) (PDF)
- [Quick Guide: Installing, Maintaining, and Servicing Walnut Twig Beetle Pheromone-baited Traps](#) (PDF)
- [Detecting and Identifying the Walnut Twig Beetle: Monitoring Guidelines](#) (3.4 MB PDF)

Videos

[Walnut pest management guidelines](#)



Walnut branch with thousand cankers disease, surface removed to show beetle galleries.

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7. Mediterranean oak borer
8. New cockroaches

Madrone leafminer (no name yet...)

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Madrone leafminer (no name yet...)



Madrone leafminer (no name yet...)



Madrone leafminer (no name yet...)

1. On Madrone,
Strawberry tree,
and Manzanita
2. Causes canopy thinning
3. Pupates in soil,
emerge in May
4. No management
recommendations yet...



Asian Citrus Psyllid and the Citrus Disease Huanglongbing



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Huanglongbing



Photography: M. Rogers, S. Halbert and E. Grafton-Cardwell

ACP/HLB California Situation

ACP (psyllid) first found in 2008

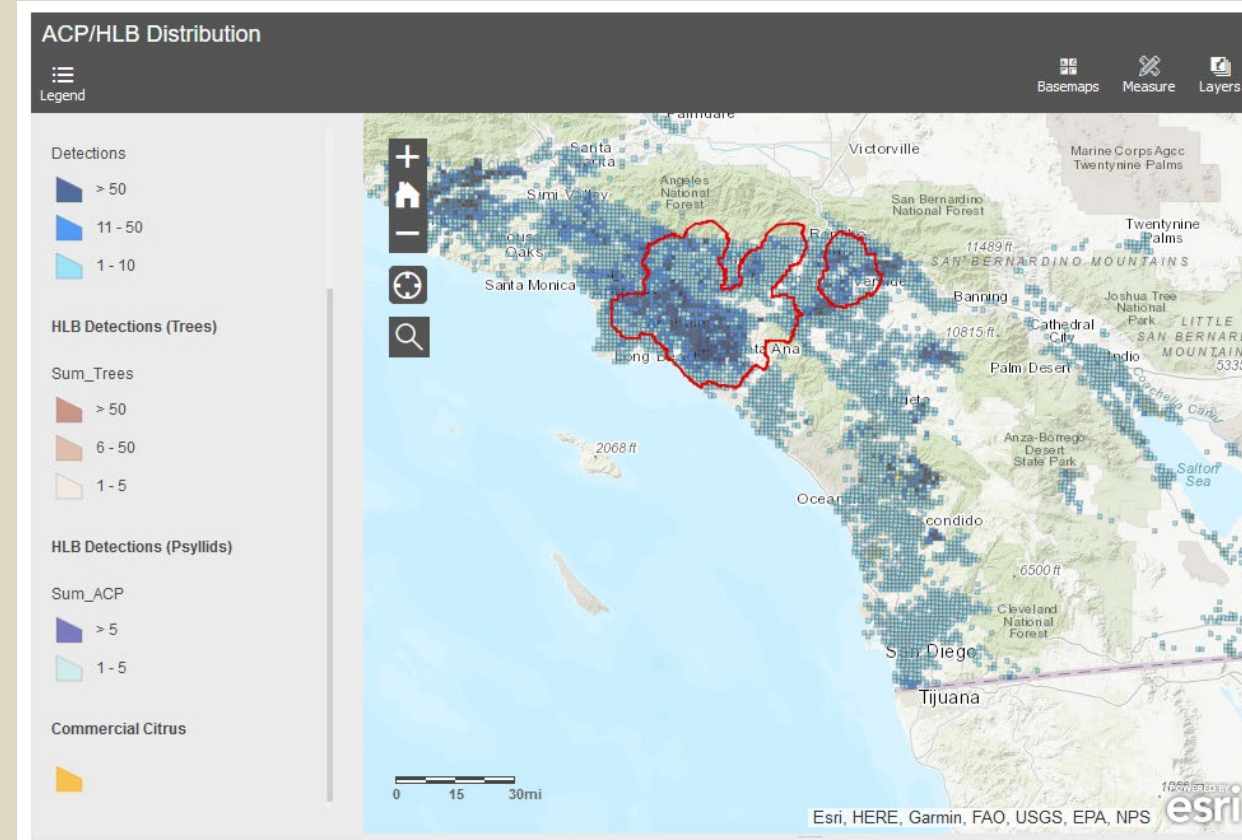
HLB disease first found in 2012

Mandated infected tree removal.

9 years after HLB found, it is accelerating its spread in S CA

Quarantines restrict plant movement (nursery trees & bulk citrus) and slow psyllid spread

<http://ucanr.edu/sites/ACP/>



Asian Citrus Psyllid and Huanglongbing (HLB)



- 1) HLB kills citrus trees, we have no cure, and it's spreading in Southern CA (~~32 73 126~~ >1655 trees)
- 2) HLB is spread by grafting infected plant material and by the Asian citrus psyllid (ACP)
- 3) The goal of local eradication or suppression of ACP is to buy time for the scientists to find a cure for HLB
- 4) If ACP is found, it is important for to support eradication as 60% of Californians have citrus in their yards and HLB is going to destroy those trees
- 5) People play a part in moving psyllids (green waste, plant movement, bulk citrus movement) and so education of the general public is essential

ACP is easily distinguished from other psyllids.

Psyllids Pest Note Photo ID Page

Psyllids in California landscapes:
exotic species inadvertently introduced from other countries

On this page

- [Acacia psyllid](#)
- [Asian citrus psyllid](#)
- [Bluegum psyllid](#)
- [Eugenia psyllid](#)
- [Laurel psyllid](#)
- [Olive psyllid](#)
- [Peppertree psyllid](#)
- [Pittosporum psyllid](#)
- [Redgum lerp psyllid](#)
- [Spottedgum lerp psyllid](#)

More information

- [Psyllids Pest Note \(general\)](#)
- [Asian Citrus Psyllid and Huanglongbing Disease](#) Pest Note
- [Eucalyptus Redgum Lerp Psyllid](#) Pest Note

Click on photos to enlarge



Acacia psyllid adult



Acacia psyllid nymph



Acacia psyllid eggs



<http://ipm.ucanr.edu/PMG/PESTNOTES/pni7423-2.html>

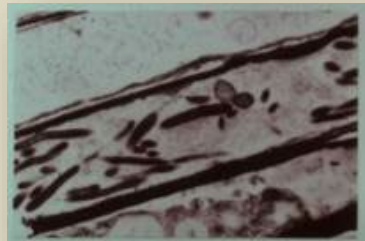
Why are we so worried about this psyllid?

The Asian citrus psyllid can vector Huanglongbing (HLB) disease

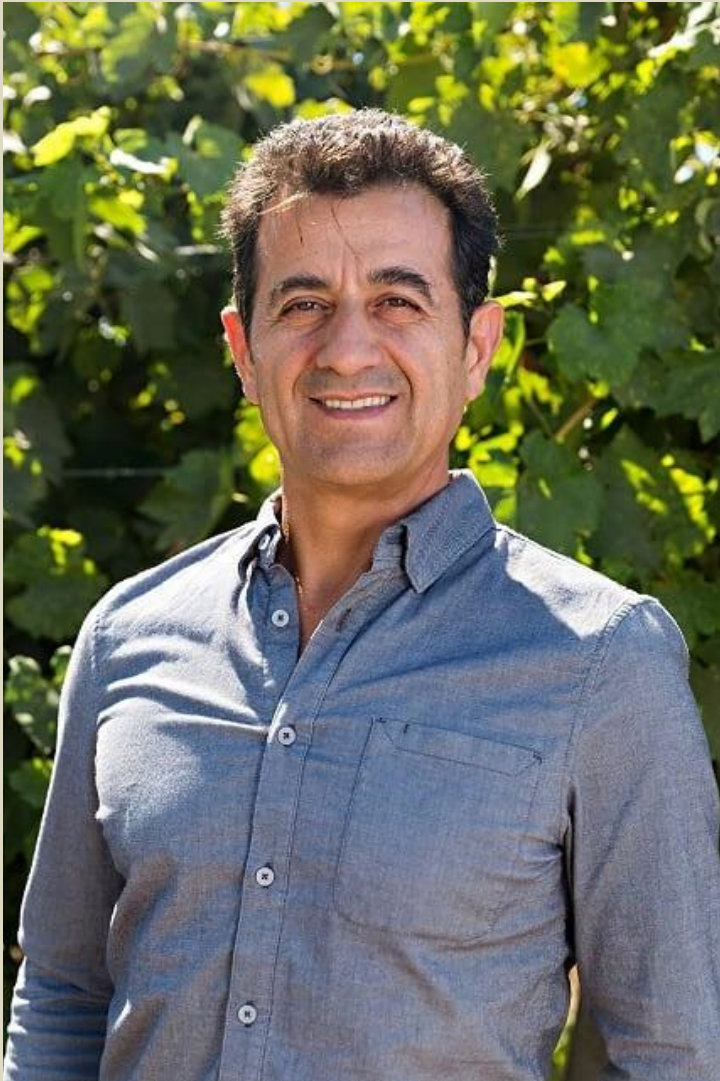
Huanglongbing means “yellow shoot disease” in Chinese.

It causes the leaves on some of the branches of citrus to turn yellow.

Candidatus
Liberibacter
asiaticus



mediterranean oak borer *Xyleborus monographus*



<https://ucanr.edu/sites/mobpc/>



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mediterranean oak borer

Xyleborus monographus

- since 2019, Calistoga, on Valley oak
- native to Europe (?)
- reported on chestnut, oak and beech
 - CA host range unknown (Valley, Blue, Black)
 - In Napa, Sonoma, Lake Counties
- seems prefer stressed trees
 - are your trees stressed? Poll!



mediterranean oak borer

- ambrosia beetle (bores into the wood, carries fungi
 - fungus: *Raffaelea montetyi*)
 - symptoms resemble other ambrosia beetles
 - may attack from the top? (like ISHBs)



← native
ambrosia beetle
(photo: Curtis Ewing, Calfire)

mediterranean
oak borer →



mediterranean oak borer

- Management:

- 1 Report finds (and get lab confirmation)

- either to CDFA

- or to Eskalen lab: <https://ucanr.edu/sites/mobpc>

- 2 Do not move infested wood

- Chip it! (< 3")

- Solarize it! (3-6 weeks where/when hot; 6 months where cool)



mediterranean oak borer

~ **website:** ucanr.edu/sites/mobpc ~

Mediterranean Oak Borer

Pest Overview ▾ Diagnosis & Management ▾ Resources News and Events



A New Threat to California's Oak Trees

The Mediterranean Oak Borer (*Xyleborus monographus*) is an ambrosia beetle that was found infesting several valley oak trees in Calistoga, (Napa County) California in 2019.

The extent of its distribution within Napa County and neighboring Sonoma County is currently undetermined. It is not believed to have spread to other parts of the state. However, there is considerable potential for the beetle's range to expand as they can be moved in infested wood and the females can fly. Native to Europe, the pest is found in a variety of climates, including Mediterranean, and it is likely capable of establishing over much of California.

In Europe, the beetles are known to attack a moderate range of trees in the oak and beech family, but that range could be much narrower or broader in California. They appear to prefer to infest trees that are already suffering from drought or other pests or diseases such as sudden oak death. California forests are periodically under stress from drought, fire, and disease, so they may be especially vulnerable to this beetle.



New outdoor nuisance cockroaches: Turkestan and Three-lined

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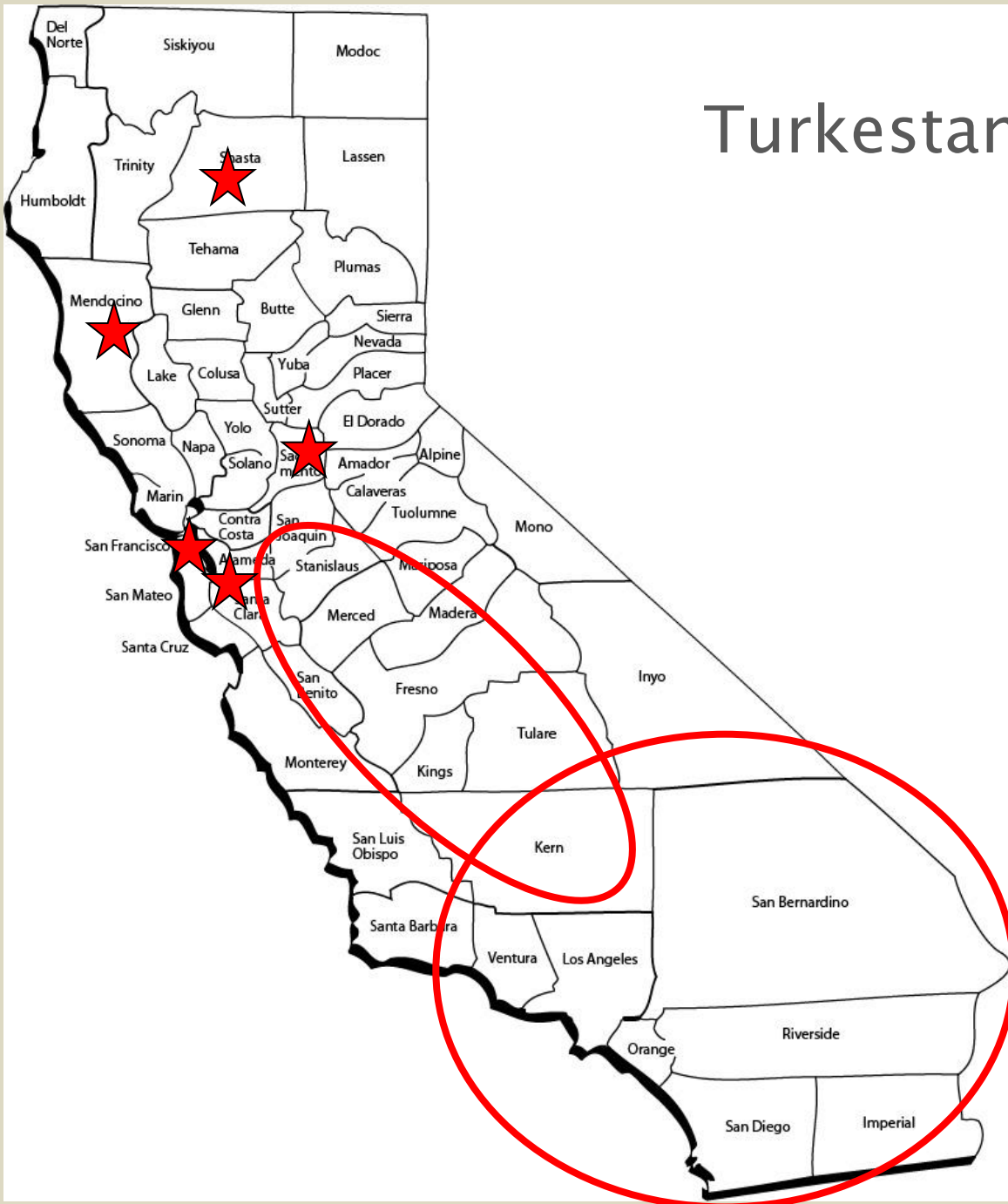
Turkestan cockroaches *Blatta lateralis*



Females: 1", dark brown, flightless
Males: ~ 1", light brown, winged
Nymphs: 1/6" to 1", reddish brown

- Live, breed in dark, damp outdoor locales
- Cannot climb slick surfaces
- Relatively new to CA

Turkestan cockroaches *Blatta lateralis*



- Native to the Middle East
- **Most common outdoor nuisance species in southern CA**
- Becoming more common in Central Valley (Bakersfield to Redding)
- Isolated populations elsewhere (Ukiah)
- displacing Oriental roach in much of the American SW
 - Faster development (250 d vs 500 d)
 - More egg cases produced (25 vs 10)
 - Decreased cuticular water loss

Another new outdoor nuisance species:
Three-lined cockroach *Luridiblatta trivittata*



- Native to Mediterranean
- mis-identified as German cockroach (which is an indoor, public health pest!)

Three-lined cockroach: small, wingless, outdoor detritivore

Very small: adults 7–9 mm (1/3 inch)



SF Bay Area and North Coast CA



IPM for outdoor nuisance cockroaches

- **Prevention**
 - Moisture management
 - Habitat modification
 - Exclusion
- **Monitoring**
 - Sticky traps / glue boards
- **Baits (gels, granules)**
 - Contained within stations when possible, to limit nontarget and human exposure



Urban Pests
Fun-time update:
pew...

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CE

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Thank you!
And special thanks
to →

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