City of Garden Grove

WEEKLY CITY MANAGER'S MEMO

September 26, 2019

TO: Honorable Mayor and City Council Members

FROM: Scott C. Stiles, City Manager

I. ITEMS FROM OTHER GOVERNMENTAL AGENCIES, OUTSIDE AGENCIES, BUSINESSES AND INDIVIDUALS

A. Survey request from Orange County Transit Authority regarding Beach Boulevard.

B. *Amendment to the Proclamation of an Emergency Program against the Huanglongbing Disease* and *Amendment to the Notice of Treatment for the Asian Citrus Psyllid* from the California Department of Food and Agriculture.

• OTHER ITEMS

- SOCIAL MEDIA HIGHLIGHTS AND NEWSPAPER ARTICLES
  Copies of the week's social media posts and local newspaper articles are attached for your information.

- MISCELLANEOUS ITEMS
  Items of interest are included.

Maria Stipe for

Scott C. Stiles
City Manager

Attachment I. A.
Mgrs. Memo 9/26/19

Zimbra

Fwd: Help Transform Beach Boulevard!

From : Meena Yoo <meenay@ggcity.org> Thu, Sep 26, 2019 01:48 PM
Subject: Fwd: Help Transform Beach Boulevard!

From: "Orange County Transportation Authority" <mespino@octa.net>
To: sstiles@ci.garden-grove.ca.us
Sent: Wednesday, September 25, 2019 2:30:14 PM
Subject: Help Transform Beach Boulevard!

HELP TRANSFORM BEACH BOULEVARD

Last May, we asked you and other Beach Boulevard users how to improve the major street, which runs from Huntington Beach to La Habra. Now, we are asking for additional public feedback through a short online survey. Your response will help build a better Beach Boulevard for all.

www.beach-survey.com

Study Information

The Orange County Transportation Authority (OCTA) and State of California Department of Transportation (Caltrans) District 12 are working to "Transform Beach Boulevard" into a cohesive vision of a modern roadway. The findings will guide and enhance local planning initiatives that support future economic growth and a sense of community from the coast to Whittier Boulevard.

Learn more about the study and view the study map at www.octa.net/beachstudy.

Stay Connected

Marissa Espino
Community Relations Officer
(714) 560-5607
mespino@octa.net
octa.net/beachstudy

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

AMENDMENT TO THE PROCLAMATION OF AN EMERGENCY PROGRAM AGAINST THE HUANGLONGBING DISEASE

FOR THE CITIES OF ANAHEIM, FULLERTON, GARDEN GROVE, HUNTINGTON BEACH, LA HABRA, NORTH TUSTIN, PLACENTIA, ORANGE, SANTA ANA, TUSTIN, WESTMINSTER, AND YORBA LINDA OF ORANGE COUNTY

Between June 14, 2017 and September 13, 2019, the California Department of Food and Agriculture (CDFA) confirmed the presence of the causative bacterial agent of the citrus disease huanglongbing (HLB) in citrus tree tissue collected from the cities of Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Placentia, Orange, Santa Ana, Tustin, Westminster, and Yorba Linda, in Orange County.

HLB is a devastating disease of citrus and is spread through feeding action by populations of the Asian citrus psyllid (ACP), *Diaphorina citri* Kuwayama. In order to determine the extent of the infestation, and to define an appropriate response area, additional surveys took place for several days over a one quarter-square mile area, centered on the detection sites. Based on the results of the surveys, implementation of the CDFA's ACP and HLB emergency response strategies are necessary for eradication and control. Notice of Treatment is valid until September 13, 2020, which is the amount of time necessary to determine that the treatment was successful.

HLB is considered the most devastating disease of citrus in the world. In the United States, HLB's unchecked spread in Florida starting in 2006 resulted in devastating impacts on the environment and economy. Symptoms of HLB include yellow shoots with mottling and chlorosis of the leaves, misshapen fruit, fruit that does not fully color, and fruit that has a very bitter taste, which makes it unfit for human consumption. These symptoms often do not appear until two years after infection, making this particular disease difficult to contain and suppress. The bacterium that causes the disease, namely *Candidatus* Liberibacter asiaticus, blocks the flow of nutrients within the tree, causing the tree to starve to death. There is no cure, and trees infected with the disease will die two to five years after infection. The undesirable symptoms of HLB-infected trees result in the trees' loss of commercial and aesthetic value while they remain hosts for spreading HLB to ACP and other plants. These effects would be catastrophic to California's natural environment, agriculture, and economy. For example, the effect of HLB's establishment in Florida resulted in a citrus industry loss of $7 billion. Similar consequences could be expected in California, where the citrus industry is valued at $7.1 billion.

ACP feeds on members of the plant family Rutaceae, primarily on *Citrus* and *Murraya* species, but is also known to attack several other genera, including over forty species of plant that act as hosts and possible carriers. The most serious damage to the environment and property caused by ACP—the death and loss in value of host plants--is due to its vectoring the phloem-inhabiting bacteria in the genus *Candidatus* Liberibacter. However, the psyllids also cause injury to their host plants via the withdrawal of large amounts of sap as they feed, and via the production of large amounts of honeydew, which coats the leaves of the tree and encourages the growth of sooty mold. Sooty mold blocks sunlight from reaching the leaves.

On November 22, 2017, the University of California and the United States Department of Agriculture (USDA) released a briefing paper that indicates, beginning in June 2017, a sharp increase in HLB and HLB-positive ACP detections, cities containing HLB, and ACP nymphs. Prior to the release of the November 22, 2017 briefing paper, the level of HLB risk in California was thought to be relatively stable. Following the release of the November 22, 2017 briefing paper, the Department has become aware of the exponential intensification of the HLB epidemic, as demonstrated by the indicators contained in the paper.

Considering the exponential intensification of the HLB epidemic, emergency action is needed to protect California from the negative environmental and economic impact HLB will cause should it be allowed to remain in this area. The emergency program is based on recommendations developed in consultation with the California HLB Task Force, USDA experts on HLB and ACP, the Primary State Entomologist, the Primary State Plant Pathologist, and the affected counties agricultural commissioners' representatives who are knowledgeable on HLB and ACP Incorporating these experts' recommendations and findings, the program requires removal of all HLB-infected trees.

In determining how to respond to this emergency, the CDFA employs integrated pest management (IPM) principles. IPM includes cultural, biological, physical, and chemical control methods. The CDFA considered all relevant factors, data and science and determined that cultural, biological, and chemical control methods would not abate the imminent threat posed by HLB-positive trees or meet its statutory obligations. Therefore, a physical method was selected, which includes removal of any infected host plant. This option was selected based upon minimal impacts to the environment, biological effectiveness, minimal public intrusiveness, and cost.

The November 22, 2017 briefing paper revealed the exponential intensification of the HLB epidemic, which necessitates immediate action to address the epidemic's imminent threat to California's natural environment, agriculture and economy. More specifically, in addition to citrus, the HLB/ACP complex threatens loss and damage to native wildlife, private and public property, and food supplies.

In addition, the Secretary is mandated to: thoroughly investigate the existence of the disease; determine the probability that the disease will spread; adopt regulations as are reasonably necessary to carry out the provisions of this code (title 3, California Code of Regulations, section 3591.21); abate the disease from the established treatment area; and prevent further economic damage. *See* FAC sections 401, 403, 408, 5401-5405 and 5761-5763.

A Program Environmental Impact Report (PEIR) has been prepared which analyzes the ACP and HLB treatment program in accordance with Public Resources Code (PRC), Sections 21000 et seq. The PEIR was certified in December 2014, and is available at http://www.cdfa.ca.gov/plant/peir/.

The treatment plan for the HLB infestation shall be implemented as follows:

1. Physical Control. All host plants found to be infected with HLB will be removed and destroyed using mechanical means in order to stop the spread of the disease.

Public Notification:

Residents of affected properties shall be invited to a public meeting where officials from CDFA, the Department of Pesticide Regulation, the Office of Environmental Health Hazard Assessment, and the county agricultural commissioner's office shall be available to address

residents' questions and concerns.

Residents shall be notified in writing at least 48 hours in advance of any treatment in accordance with the Food and Agricultural Code section 5771-5779 and 5421-5436. For any questions related to this program, please contact the CDFA toll-free telephone number at 800-491-1899 for assistance. This telephone number is also listed on all treatment notices. Treatment information is posted at http://cdfa.ca.gov/plant/acp/treatment_maps.html.

Following the treatment, completion notices are left with the residents detailing precautions to take and post-harvest intervals applicable to the citrus fruit on the property.

Press releases, if issued, are prepared by the CDFA information officer and the county agricultural commissioner in close coordination with the program leader responsible for treatment. Either the county agricultural commissioner or the public information officer serves as the primary contact to the media.

Information concerning the HLB/ACP program shall be conveyed directly to local and State political representatives and authorities via letters, emails, and/or faxes.

Enclosed are the findings regarding the treatment plan, the November 22, 2017 UC and USDA briefing paper, a map of the treatment area, work plan, integrated pest management analysis of alternative treatment methods, and a pest profile.

Attachments

FINDINGS OF AN EMERGENCY
FOR
ASIAN CITRUS PSYLLID / HUANGLONGBING
Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Placentia, Orange, Santa Ana, Tustin, Westminster, and Yorba Linda, Orange County
Program AM-3856

Between June 14, 2017 and September 13, 2019, the California Department of Food and Agriculture (CDFA) confirmed the presence of the causative bacterial agent of the citrus disease huanglongbing (HLB) from citrus tree tissue collected in the cities of Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Orange, Santa Ana, Tustin, Westminster, and Yorba Linda, in Orange County. HLB is a devastating disease of citrus and is spread through feeding action by populations of the Asian citrus psyllid (ACP), *Diaphorina citri* Kuwayama.

In order to determine the extent of the infestation in Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Orange, Santa Ana, Tustin, Westminster, and Yorba Linda, in Orange County, and to define an appropriate response area, an additional survey took place for several days over a one quarter-square mile area, centered on the following detections: June 14, 2017, Fullerton; May 25, 2018, Yorba Linda; July 3, 2019, La Habra; July 15, 2019, Westminster; July 19, 2019, North Tustin; July 26, 2019, Placentia; July 31, 2019, Huntington Beach; August 7, 2019, Tustin; September 13, 2019, Anaheim, Garden Grove, Orange, and Santa Ana. Based on this survey, and findings and recommendations from California's HLB Task Force the Primary State Entomologist, the Primary State Plant Pathologist, USDA experts on HLB and ACP, and County Agricultural Commissioner representatives who are knowledgeable on HLB and ACP, I have determined that HLB poses a statewide imminent danger to the environment and economy.

The results of the additional survey also indicated that the local infestation is amenable to CDFA's ACP and HLB emergency response strategies, which include removal of any infected host plant. This option was selected based upon minimal impacts to the natural environment, biological effectiveness, minimal public intrusiveness, and cost.

HLB is considered one of the most devastating diseases of citrus in the world. The bacterium that causes the disease, namely *Candidatus* Liberibacter asiaticus, blocks the flow of nutrients within the tree and causes the tree to starve to death within two to five years of infection. There is no cure. Symptoms of HLB include yellow shoots with mottling and chlorosis of the leaves, misshapen fruit, fruit that does not fully color, and fruit that has a very bitter taste, which makes it inedible for human consumption. These symptoms often do not appear until two years after infection, making this particular disease difficult to contain and suppress. These undesirable symptoms of HLB-infected trees result in the trees' loss of commercial and aesthetic value while at the same time they are hosts for spreading HLB.

ACP is an insect pest that is native to Asia. It has appeared in Central and South America, the Caribbean, and Mexico. In the United States, ACP has been found in Alabama, Arizona, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, and Texas. In California, ACP has been found in twenty-six counties.

ACP feeds on members of the plant family Rutaceae, primarily on *Citrus* and *Murraya* species, but is also known to attack several other genera, including over forty species of plant that act as hosts and possible carriers. The most serious damage to the environment and property caused by ACP – the death and loss in value of host plants – is due to its vectoring the phloem-inhabiting bacteria in the genus *Candidatus* Liberibacter. In addition, the psyllids also cause injury to their host plants via the withdrawal of large amounts of sap as they feed and via the production of large amounts of honeydew, which coats the leaves of the tree and encourages the growth of sooty mold. Sooty mold blocks sunlight from reaching the leaves.

These pests present a significant and imminent threat to the natural environment, agriculture, and economy of California. For example, unabated spread of HLB would have severe consequences to both the citrus industry and to the urban landscape via the decline and the death of citrus trees. The value of California citrus production in the 2016-17 marketing year was $3.389 billion. The total economic impact of the industry on California's economy in 2016-17 was $7.1 billion. The California citrus industry added $1.695 billion to California's state GDP in 2016. Estimated full time equivalent jobs in the California citrus industry in 2016-2017 totaled 21,674. Estimated wages paid by the California citrus industry income in 2016-17 totaled $452 million. A 20 percent reduction in California citrus acreage would cause a loss of 7,350 jobs, $127 million in employee income, and reduce state GDP by $501 million.

Additionally, if unabated, the establishment of HLB in California would harm the natural environment as commercial and residential citrus growers would be forced to increase pesticide use. And, the establishment of HLB could lead to enforcement of quarantine restrictions by the USDA and our international trading partners. Such restrictions would jeopardize California's citrus exports, which are valued at over $800 million per year.

The causative bacteria of HLB was first detected in Los Angeles in 2012. It has subsequently been detected in Orange, Riverside, and San Bernardino counties. Prior to November 2017, the level of HLB risk in California was thought to be relatively stable. However, on November 22, 2017, the University of California and the United States Department of Agriculture released a briefing paper that indicates, beginning in June 2017, a sharp increase in HLB and HLB-positive ACP detections, cities containing HLB, and ACP nymphs. Following the release of the November 22, 2017 briefing paper, the Department has become aware of the exponential intensification of the HLB epidemic, as demonstrated by the indicators contained in the paper.

Infected trees are destroyed as soon as they are discovered. However, due to the length of time it takes for symptoms to appear on infected trees, new infestations continue to be discovered. If the current infestation is not abated immediately, HLB will likely become established in neighboring counties and could pave the way for a statewide HLB infestation.

The CDFA has evaluated possible treatment methods in accordance with integrated pest management (IPM) principles. As part of these principles, I have considered the following treatments for control of HLB: 1) physical controls; 2) cultural controls; 3) biological controls; and 4) chemical controls. Upon careful evaluation of each these options, I have determined that it is necessary to address the imminent threat posed by HLB using currently available technology in a manner that is recommended by the HLB Task Force.

Based upon input from the HLB Task Force, the Primary State Entomologist, the Primary State Plant Pathologist, USDA experts on HLB and ACP, and county agricultural commissioner representatives who are knowledgeable on ACP and HLB, I find there are no cultural, chemical or biological control methods that are both effective against HLB-positive trees and allow CDFA to meet its statutory obligations, and therefore it is necessary to conduct physical and chemical treatments to abate this threat. As a result, I am ordering removal of all HLB-infected trees.

A Program Environmental Impact Report (PEIR) has been prepared which analyzes the ACP and HLB treatment program in accordance with Public Resources Code (PRC), Sections 21000 et seq. The PEIR was certified in December 2014, and is available at http://www.cdfa.ca.gov/plant/peir/. The PEIR addresses the treatment of the ACP and HLB at the program level and provides guidance on future actions against the ACP and HLB. It identifies feasible alternatives and possible mitigation measures to be implemented for individual ACP and HLB treatment activities. The ACP and HLB program has

incorporated the mitigation measures and integrated pest management techniques as described in the PEIR. In accordance with PRC Section 21105, this PEIR has been filed with the appropriate local planning agency of all affected cities and counties. No local conditions have been detected which would justify or necessitate preparation of a site-specific plan.

Sensitive Areas

The CDFA has consulted with the California Department of Fish and Wildlife's California Natural Diversity Database for threatened or endangered species, the United States Fish and Wildlife Service, the National Marine Fisheries Service and the California Department of Fish and Wildlife when rare and endangered species are located within the treatment area. Mitigation measures for rare and endangered species will be implemented as needed. The CDFA shall not apply pesticides to bodies of water or undeveloped areas of native vegetation. All treatment shall be applied to residential properties, common areas within residential development, non-agricultural commercial properties, and rights-of-way.

Work Plan

The proposed treatment area encompasses those portions of Orange County which fall within a 400-meters radius area around the property on which HLB has been detected, and any subsequent detection sites within the treatment area boundaries. Notice of Treatment is valid until September 13, 2020, which is the amount of time necessary to determine that the treatment was successful. A map of the treatment area boundaries is attached. The work plan consists of the following elements:

1. Physical Control. All host plants found to be infected with HLB shall be destroyed. Infected host plants shall be removed and destroyed using mechanical means.

Public Information

The resident of an affected property is provided a confirmation letter informing them that a tree on their property is infected with HLB and it is subject to mandatory removal. Residents are directed to contact the CDFA toll-free telephone number at 800-491-1899 for assistance.

Findings

HLB poses a significant, imminent threat to California's natural environment, agriculture, public and private property, and its economy.

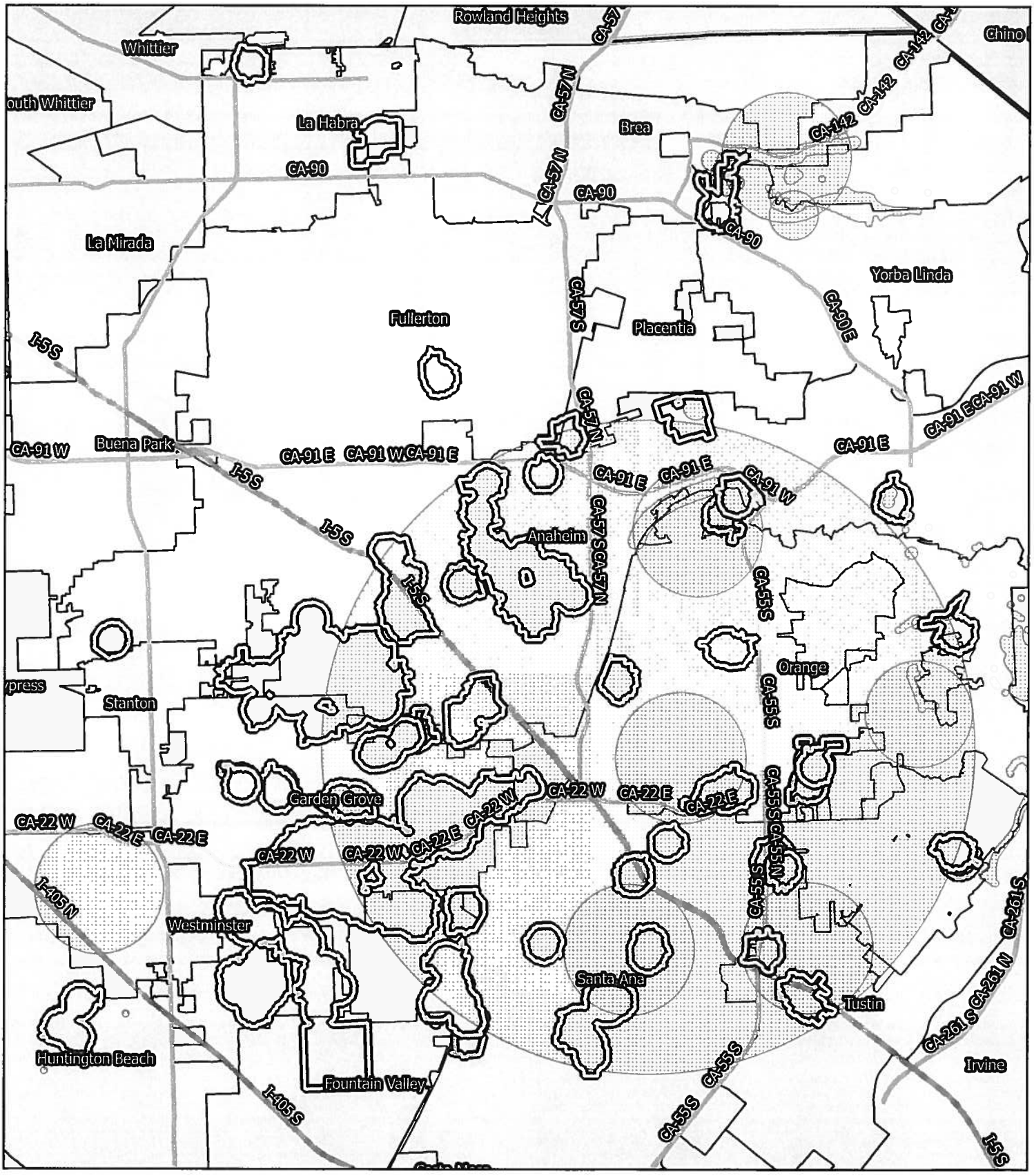
The work plan involving physical control of this pest is necessary to prevent loss and damage to California's natural environment, citrus industry, native wildlife, private and public property, and food supplies.

My decision to adopt findings and take action is based on Sections 24.5, 401.5, 403, 407, 408, 5401-5405, and 5761-5764 of the FAC.

Jennifer Moffitt, for
Karen Ross, Secretary

9/10/2019
Date

Huanglongbing Program
Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Orange, Placentia, Santa Ana, Tustin, Westminster, Yorba Linda, Orange County Amendment
2019



cdfa

0 2 4 6 mi

Existing 400m Treatment Area

New 400m Treatment Area

Sensitive Environmental Area/Treatment Mitigations In Place

N W S

Asian Citrus Psyllid/ Huanglongbing Work Plan
December 2018

I. Trapping and Visual Survey

A. Urban and Rural Residential Detection Trapping and Visual Survey

This is a cooperative State/County trapping program for the Asian citrus psyllid (ACP) to provide early detection of an infestation in a county. Traps are serviced by agricultural inspectors. The trap used for ACP detection is the yellow panel trap, which is a cardboard panel coated with stickum on each side. ACP becomes entangled on the sticky surface and cannot move off the trap. Yellow panel traps have proven successful at detecting infestations of ACP. At all locations where traps are placed, the host plant is visually inspected for ACP. If ACP is detected, the host will be visually surveyed for additional ACP and symptoms of huanglongbing (HLB).

- Trap Density: Five to 16 traps/square mile.
- Trap Servicing Interval: Every two to four weeks.
- Trap Relocation and Replacement: Traps should be replaced and relocated every four to eight weeks to another host at least 500 feet away, if other hosts are available.
- Visual surveys and/or tap sampling are conducted once at each trapping site when the trap is placed.

B. Delimitation Trapping and Visual Survey Outside of the Generally Infested Area

The protocols below are the actions in response to the detection of ACP in counties north of Santa Barbara County and the Tehachapi Mountains.

1. Response to the collection one or more ACP

a. Trapping

Density will be 50 traps per square mile in a four-square mile delimitation area centered on the detection site. Traps will be serviced weekly for one month. If no additional ACP are detected, the traps will be serviced monthly for one year past the identification date. Additional detections may increase the size of the delimitation survey area and will restart the one-year clock on the trap servicing requirement.

b. Visual Survey

All find sites and adjacent properties will be visually surveyed for ACP and HLB. Additional sites may be surveyed as part of the risk-based survey.

C. Commercial Grove Trapping

In counties with substantial commercial citrus production and are not generally infested with ACP, traps are placed within the groves at the density of one trap per 40 acres. Traps are replaced every month and submitted for screening.

In areas that are generally infested with ACP, agricultural inspectors visually survey commercial groves for plant tissue displaying symptoms of HLB and collect ACP which are tested for HLB.

D. Transect Survey

If high or scattered ACP populations are found in the initial inspections, a transect survey may be implemented to rapidly determine the extent of the infestation. This involves

inspecting a minimum of 20 properties per square mile and/or placing 20 traps per square mile along eight radii in the cardinal directions (e.g., north, northeast, etc.). Transect surveys extend between five and 20 miles beyond a detection site, depending on the situation.

II. Treatment

CDFA's treatment activities for ACP vary throughout the state and depend on multiple factors. Factors CDFA considers prior to treatment include:

- Determination if suppression of ACP is feasible;
- The proximity of the ACP infestation to commercial citrus;
- Whether growers are conducting coordinated treatment activities;
- The level of HLB risk;
- Consistency with the overall goal of protecting the state's commercial citrus production.

Treatment scenarios throughout the state in which treatment will occur:

- In areas with commercial citrus production that are generally infested with ACP, and where all growers are treating on a coordinated schedule; CDFA may conduct residential buffer treatments to suppress ACP populations.
- In areas with commercial citrus production that are not generally infested with ACP; CDFA will conduct residential treatments in response to ACP detections.
- In areas where HLB is detected, CDFA will conduct residential treatments to suppress ACP populations.
- In areas where ACP has not been previously detected, or where ACP has been detected at low densities, CDFA will conduct residential treatments to prevent ACP establishment or suppress populations.
- In areas where ACP has been detected along the California-Mexico border, CDFA will conduct residential treatments in response to ACP detections to suppress ACP populations.

CDFA's current policy is to not conduct treatments in areas that are generally infested if there is limited or no commercial citrus production in the area, or if all growers in the area are not treating.

1. Treatment Protocols

A Program Environmental Impact Report (PEIR) has been certified which analyzes the ACP treatment program in accordance with Public Resources Code, Sections 21000 et seq. The PEIR is available at http://www.cdfa.ca.gov/plant/peir. The treatment activities described below are consistent with the PEIR.

In accordance with the integrated pest management principles, the CDFA has evaluated possible treatment methods and determined that there are no physical, cultural, or biological control available to eliminate ACP from an area.

In general, when treatment has been deemed appropriate, CDFA applies insecticides to host trees in the residential (urban) areas in a 50 to 800-meter radius around each detection site. Only ACP host plants are treated.

a. Within two miles of International Border with Mexico

- CDFA will treat residential citrus host plants within a 400-meter buffer of the border if ACP have been detected within one mile of the border within one year.
- A NOT will be issued.
- A public meeting will be held at least once per year.

b. Within a Generally Infested Area with Commercial Citrus Production

- CDFA will treat residential citrus host plants within a 400-meter buffer surrounding commercial citrus groves if the growers are conducting coordinated treatments in 90 percent of the designated Psyllid Management Area and if ACP have been detected within one mile of the commercial citrus groves within one year.
    - The exception is Imperial County, which has fewer residential properties, and therefore residential citrus host plants will be treated within 800 meters of commercial citrus.
- A NOT will be issued.
- A public meeting will be held at least once per year.

c. Outside of the Generally Infested Area

The actions below are in response to the detection of one or more ACP in counties north of Santa Barbara County and the Tehachapi Mountains.

- Detection of one ACP - All properties with hosts within a 50-meter radius of the detection site will be treated.
- Detection of two or more ACP - All properties with hosts within a 400-meter radius of the detection site will be treated.
- A NOT will be issued.
- A public meeting will be held at least once per year.

The actions below are in response to the detection of two or more ACP in Fresno, Madera, Kern, Kings, and Tulare counties.

- Detection of two or more ACP on one trap or one or more ACP detected on separate traps within 400 meters of each other within a six-month period – All properties with hosts within a 400-meter radius will be treated.
- In a commercial citrus environment, where there are few residences in the area, CDFA will treat the residential area within an 800-meter buffer surrounding commercial citrus groves if the growers are conducting coordinated treatments.
- A NOT will be issued.
- A public meeting will be held at least once per year.

d. In response to an HLB Detection

- All properties within a 400-meter radius of the detection site will be treated.
- A NOT will be issued.
- All host plants found to be infected with HLB shall be destroyed.

- Infected host plants shall be removed and destroyed by mechanical means.

- A Proclamation of an Emergency Program (PEP) will be issued.
- A public meeting will be held at least once per year.

2. Treatment Methodology

The treatment protocol consists of both a foliar and a systemic insecticide. The foliar insecticide is used for immediate reduction of the adult population in order to prevent the adults from dispersal. The systemic insecticide is a soil treatment used to kill the sedentary nymphs and provide long term protection against reinfestation. Treatment frequency is dependent on the insecticide applied and severity of the infestation. Treatments will end no later than two years after the last psyllid detection in the treatment area.

CDFA uses registered pesticides and follows the label directions. The treatment protocol may be adjusted to use only the foliar or the systemic insecticide to allow for mitigations in special situations.

a. Foliar Treatment

Tempo® SC Ultra (cyfluthrin) is a pyrethroid contact insecticide. Treatment will initially occur once, and subsequent applications may occur for up to three times annually if additional psyllids are detected. This material will be applied to the foliage of all host plants using hydraulic spray or hand spray equipment.

b. Soil Treatment

A systemic soil application will be made using either Merit® 2F or CoreTect™.

- Merit® 2F (imidacloprid), is a neonicotinoid systemic insecticide. Treatment will initially occur once, and a subsequent application may occur once on an annual basis if additional psyllids are detected. This material will be applied to the soil within the root zone of host plants.

- CoreTect™ (imidacloprid) is a neonicotinoid systemic insecticide. It is used in place of Merit® 2F in situations where there are environmental concerns about soil surface runoff of the liquid Merit® 2F formulation, such as host plants growing next to ponds and other environmentally sensitive areas. Treatment will initially occur once, with a subsequent application once on an annual basis if additional psyllids are detected. This material is a pelletized tablet and is inserted into the soil and watered in within the root zone of host plants.

INTEGRATED PEST MANAGEMENT ANALYSIS OF ALTERNATIVE TREATMENT METHODS FOR CONTROL OF THE ASIAN CITRUS PSYLLID AND HUANGLONGBING
May 2018

The treatment program used by the California Department of Food and Agriculture (CDFA) for control of the Asian citrus psyllid (ACP), *Diaphorina citri* (Hemiptera: Psyllidae), and the disease it transmits, namely Huanglongbing, *Candidatus* Liberibacter asiaticus, targets multiple life stages. A contact insecticide is used for an immediate control of ACP adults in order to prevent spread, and a systemic insecticide is used to control developing ACP nymphs and to give the plant long term protection from re-infestation. The contact insecticide preferentially used contains the synthetic pyrethroid cyfluthrin, while the systemic insecticide contains the synthetic neonicotinoid imidacloprid. Both products have been shown to be effective against ACP elsewhere, particularly in Florida. In addition, HLB-infected plants are removed in their entirety and destroyed, in order to remove a reservoir for the disease. The California Huanglongbing Task Force, a joint government, university, and industry group formed in 2007 to provide guidance to the CDFA on matters pertaining to ACP and HLB has endorsed the use of these chemicals in the CDFA's treatment program.

Below is an evaluation of alternative treatment methods to control ACP and HLB which have been considered for treatment programs in California.

A. PHYSICAL CONTROL

Mass Trapping. Mass trapping of adults involves placing a high density of traps in an area in an attempt to physically remove them before they can reproduce. The current available trapping system for ACP relies on short distance visual stimulus, and is not considered effective enough to use in a mass trapping program.

Active Psyllid Removal. Adult ACPs are mobile daytime fliers, and adults could theoretically be netted or collected off of foliage. However, due to their ability to fly when disturbed, and the laborious and time-prohibitive task of collecting minute insects from several properties by hand, it would be highly unlikely that all adults could be captured and removed. Nymphs attach themselves to developing leaves and stems via their proboscis. Therefore, physical removal of the nymphs would entail removal of the growing shoots which will stunt the tree and reduce fruit production. For these reasons, mechanical control is not considered to be an effective alternative.

Host Removal. Removal of host plants for ACP would involve the large-scale destruction of plants and their roots by either physical removal or phytotoxic herbicides. Additionally, host removal could promote dispersal of female psyllids in search of hosts outside of the treatment area, thus spreading the infestation. For these reasons, host removal is considered inefficient and too intrusive to use over the entirety of the treatment areas used for ACP. However, physical host removal of HLB-infected plants in their entirety is used for HLB control, because it is limited in scope to just the infected tree and it is effective at eliminating the disease reservoir, thereby preventing further spread of the disease by ACP.

B. CULTURAL CONTROL

Cultural Control. Cultural controls involve the manipulation of cultivation practices to reduce the prevalence of pest populations. These include crop rotation, using pest-resistant varieties, and intercropping with pest-repellent plants. None of these options are applicable for ACP control in an urban environment, and may only serve to drive the psyllids outside the treatment area, thus spreading the infestation.

C. BIOLOGICAL CONTROL

Microorganisms. No single-celled microorganisms, such as bacteria, are currently available to control ACP.

Nematodes. Entomopathogenic nematodes can be effective for control of some soil-inhabiting insects, but are not effective, nor are they used, against above ground insects such as psyllids.

Parasites and Predators. There have been two parasites released in Florida against ACP, but only one of these are considered somewhat successful there, namely *Tamarixia radiata* (Hymenoptera: Eulophidae). This insect has been released into the environment in southern California. The CDFA is working with the citrus industry to pursue options for incorporating this parasite into treatment programs statewide. In addition, a second wasp has been recently released by the University of California Riverside, *Diaphorencyrtus aligarhensis*.

Sterile Insect Technique (SIT). SIT involves the release of reproductively sterile insects which then mate with the wild population, resulting in the production of infertile eggs. SIT has neither been researched nor developed for ACP, nor has it been developed for any species of psyllids, and is therefore unavailable.

D. CHEMICAL CONTROL

Foliar Treatment. A number of contact insecticides have been researched for use against ACP elsewhere, particularly in Florida. Contact insecticides are more effective against adult ACPs than the sedentary nymphs because adults actively move around on plants, thereby coming into contact with residues, whereas nymphs have to be directly sprayed in order for them to come into contact. The following product has been identified for use by the CDFA, based on a combination of effectiveness against ACP, worker and environmental safety, and California registration status.

Tempo® SC Ultra is a formulation of cyfluthrin which is applied to the foliage of all host plants. Tempo® SC Ultra is a broad-spectrum synthetic pyrethroid insecticide which kills insects on contact. Tempo® SC Ultra has no preharvest interval, which makes it compatible with residential fruit-growing practices.

Soil Treatment. A number of systemic insecticides have been researched for use against ACP elsewhere, particularly in Florida. Systemic insecticides are particularly effective against psyllid nymphs because nymphs spend much of their time feeding, thereby acquiring a lethal dose. The following products have been identified for use by the CDFA, based on a combination of effectiveness against ACP, worker and environmental safety, and California registration status.

Merit® 2F is a formulation of imidacloprid which is applied to the root system of all host plants via a soil drench. Imidacloprid is a synthetic neonicotinoid insecticide which controls a number of other phloem feeding pests such as psyllids, aphids, mealybugs, etc.

CoreTect™ is a formulation of imidacloprid which is applied to the root system of all host plants via insertion of a tablet into the soil, followed by watering. It is used in place of Merit® 2F in situations where there are environmental concerns about soil surface runoff of the liquid Merit® 2F formulation, such as host plants growing next to ponds and other environmentally sensitive areas.

E. RESOURCES

Grafton-Cardwell, E. E. and M. P. Daugherty. 2013. Asian citrus psyllid and huanglongbing disease. Pest Notes Publication 74155. University of California, Division of Agriculture and Natural Resources Publication 8205. 5 pp. http://www.ipm.ucdavis.edu/PDF/PESTNOTES/pnasiancitruspsyllid.pdf.

Grafton-Cardwell, E. E., J. G. Morse, N. V. O'Connell, P. A. Phillips, C. E. Kallsen, and D. R. Haviland. 2013. UC IPM Management Guidelines: Citrus. Asian Citrus Psyllid. Pest Notes Publication 74155. University of California, Division of Agriculture and Natural Resources. http://www.ipm.ucdavis.edu/PMG/r107304411.html.

PEST PROFILE

Common Name: Asian Citrus Psyllid

Scientific Name: *Diaphorina citri* Kuwayama

Order and Family: Hemiptera, Psyllidae

Description: The Asian citrus psyllid (ACP) is 3 to 4 millimeters long with a brown mottled body. The head is light brown. The wings are broadest in the apical half, mottled, and with a dark brown band extending around the periphery of the outer half of the wing. The insect is covered with a whitish waxy secretion, making it appear dusty. Nymphs are generally yellowish orange in color, with large filaments confined to an apical plate of the abdomen. The eggs are approximately 0.3 millimeters long, elongated, and almond-shaped. Fresh eggs are pale in color, then, turn yellow, and finally orange at the time of hatching. Eggs are placed on plant tissue with the long axis vertical to the surface of the plant.

History: Asian citrus psyllid was first found in the United States in Palm Beach County, Florida, in June 1998 in backyard plantings of orange jasmine. By 2001, it had spread to 31 counties in Florida, with much of the spread due to movement of infested nursery plants. In the spring of 2001, Asian citrus psyllid was accidentally introduced into the Rio Grande Valley, Texas on potted nursery stock from Florida. It was subsequently found in Hawaii in 2006, in Alabama, Georgia, Louisiana, Mississippi, and South Carolina in 2008. ACP was first found in California on August 27, 2008 in San Diego County. Subsequent to this initial detection in San Diego County, the ACP has been detected in Fresno, Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara, Tulare, Ventura, Marin, Monterey, San Francisco, and Santa Clara counties. The ACP has the potential to establish itself throughout California wherever citrus is grown.

Distribution: ACP is found in tropical and subtropical Asia, Afghanistan, Saudi Arabia, Reunion, Mauritius, parts of South and Central America, Mexico, the Caribbean, and in the U.S. (Alabama, Arizona, California, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, and Texas).

Life Cycle: Eggs are laid on tips of growing shoots; on and between unfurling leaves. Females may lay more than 800 eggs during their lives. Nymphs pass through five instars. The total life cycle requires from 15 to 47 days, depending on environmental factors such as temperature and season. The adults may live for several months. There is no diapause, but populations are low in the winter or during dry periods. There are nine to ten generations a year, with up to 16 noted under observation in field cages.

Hosts and Economic Importance: ACP feeds mainly on *Citrus* spp., at least two species of *Murraya*, and at least three other genera, all in the family Rutaceae. Damage from the psyllids occurs in two ways: the first by drawing out of large amounts of sap from the plant as they feed and, secondly, the psyllids produce copious amounts of honeydew. The honeydew then coats the leaves of the tree, encouraging sooty mold to grow which blocks sunlight to the leaves. However, the most serious damage caused by ACP is due to its ability to effectively vector three phloem-inhabiting bacteria in the genus *Candidatus* Liberibacter, the most widespread being *Candidatus* Liberibacter asiaticus. These bacteria cause a disease known as huanglongbing, or citrus greening. In the past, these bacteria have been extremely difficult to detect and

characterize. In recent years, however, DNA probes, electron microscopy, and enzyme-linked immunosorbent assay tests (ELISA) have been developed that have improved detection. Symptoms of huanglongbing include yellow shoots, with mottling and chlorosis of the leaves. The juice of the infected fruit has a bitter taste. Fruit does not color properly, hence the term "greening" is sometimes used in reference to the disease. Huanglongbing is one of the most devastating diseases of citrus in the world. Once infected, there is no cure for disease and infected trees will die within ten years. The once flourishing citrus industry in India is slowly being wiped out by dieback. This dieback has multiple causes, but the major reason is due to HLB.

Host List

SCIENTIFIC NAME	**COMMON NAMES**
Aegle marmelos	bael, Bengal quince, golden apple, bela, milva
Aeglopsis chevalieri	Chevalier's aeglopsis
Afraegle gabonensis	Gabon powder-flask
Afraegle paniculata	Nigerian powder-flask
Amyris madrensis	mountain torchwood
Atalantia monophylla	Indian atalantia
Atalantia spp.	
Balsamocitrus dawei	Uganda powder-flask
Bergia (=*Murraya*) *koenigii*	curry leaf
Calodendrum capense	Cape chestnut
X Citroncirus webberi	
Choisya arizonica	Arizonia orange
Choisya ternate	Mexican or mock orange
Citropsis articulata	Katimboro, Muboro, West African cherry orange
Citropsis gilletiana	cherry-orange
Citropsis schweinfurthii	African cherry-orange
Citrus aurantiifolia	lime, Key lime, Persian lime, lima, limón agrio, limón ceutí, lima mejicana, limero
Citrus aurantium	sour orange, Seville orange, bigarde, marmalade orange, naranja agria, naranja amarga
Citrus hystrix	Mauritius papeda, Kaffir lime
Citrus jambhiri	rough lemon, jambhiri-orange, limón rugoso, rugoso
Citrus limon	lemon, limón, limonero
Citrus madurensis (=X *Citrofortunella microcarpa*)	calamondin
Citrus maxima	pummelo, pomelo, shaddock, pompelmous, toronja
Citrus medica	citron, cidra, cidro, toronja
Citrus meyeri	Meyer lemon, dwarf lemon
Citrus × *nobilis*	king mandarin, tangor, Florida orange, King-of-Siam
Citrus × *paradisi*	grapefruit, pomelo, toronja
Citrus reticulata	mandarin, tangerine, mandarina
Citrus sinensis	sweet orange, orange, naranja, naranja dulce
Citrus spp.	
Clausena anisum-olens	anis
Clausena excavata	clausena
Clausena indica	clausena
Clausena lansium	wampi, wampee

Clymenia polyandra	a-mulis
Eremocitrus glauca	Australian desert lime
Eremocitrus hybrid	
Esenbeckia berlandieri	Berlandier's jopoy
Fortunella crassifolia	Meiwa kumquat
Fortunella margarita	Nagami kumquat, oval kumquat
Fortunella polyandra	Malayan kumquat
Fortunella spp.	
Limonia acidissima	Indian wood apple
Merrillia caloxylon	flowering merrillia
Microcitrus australasica	finger-lime
Microcitrus australis	Australian round-lime
Microcitrus papuana	desert-lime
X *Microcitronella* spp.	
Murraya spp.	curry leaf, orange-jasmine, Chinese-box, naranjo jazmín
Naringi crenulata	naringi
Pamburus missionis	
Poncirus trifoliata	trifoliate orange, naranjo trébol
Severinia buxifolia	Chinese box-orange
Swinglea glutinosa	tabog
Tetradium ruticarpum	evodia, wu zhu yu
Toddalia asiatica	orange climber
Triphasia trifolia	trifoliate limeberry, triphasia
Vepris (=*Toddalia*) *lanceolata*	white ironwood
Zanthoxylum fagara	wild lime, lime prickly-ash

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USDA United States Department of Agriculture
Animal and Plant Health Inspection Service

USDA United States Department of Agriculture
Agricultural Research Service

Briefing Paper: Recent changes in the ACP/HLB invasion in California and implications for regional quarantines

Date: 11/22/2017

Neil McRoberts, Carla Thomas, Brianna McGuire
Quantitative Biology & Epidemiology Lab, Plant Pathology Department, UC Davis, CA 95616

Beth Grafton Cardwell
Department of Entomology, UC Riverside & UC Lindcove Research and Extension Center, Exeter, CA 93221

David Bartels
USDA-APHIS-PPQ, Field Operations – Data Analysis, Risk, and Targeting, 2150 Centre Ave., Bldg B., 3E14, Fort Collins, CO 80526

Tim Gottwald
USDA-ARS, U.S. Horticultural Research Laboratory, 2001 S. Rock Road, Fort Pierce, FL 34945

State-wide background risk level for HLB

Since 2012, a background risk level for HLB in both residential and commercial citrus in each square mile of interest has been calculated 2-3 times per year using a risk model developed in Florida and adapted for use in California (Gottwald et al., 2014). The model uses a range of risk variables including census data, topography, land use, and known incidence of both HLB and Asian Citrus Psyllid (ACP) to produce a risk value ranging from 0 (extremely low risk) to 1 (very high risk) that applies to each square mile. Figure 1 shows the current risk status across the state at a county level, where the risk level applied to the county is the highest value for any individual square mile within that county

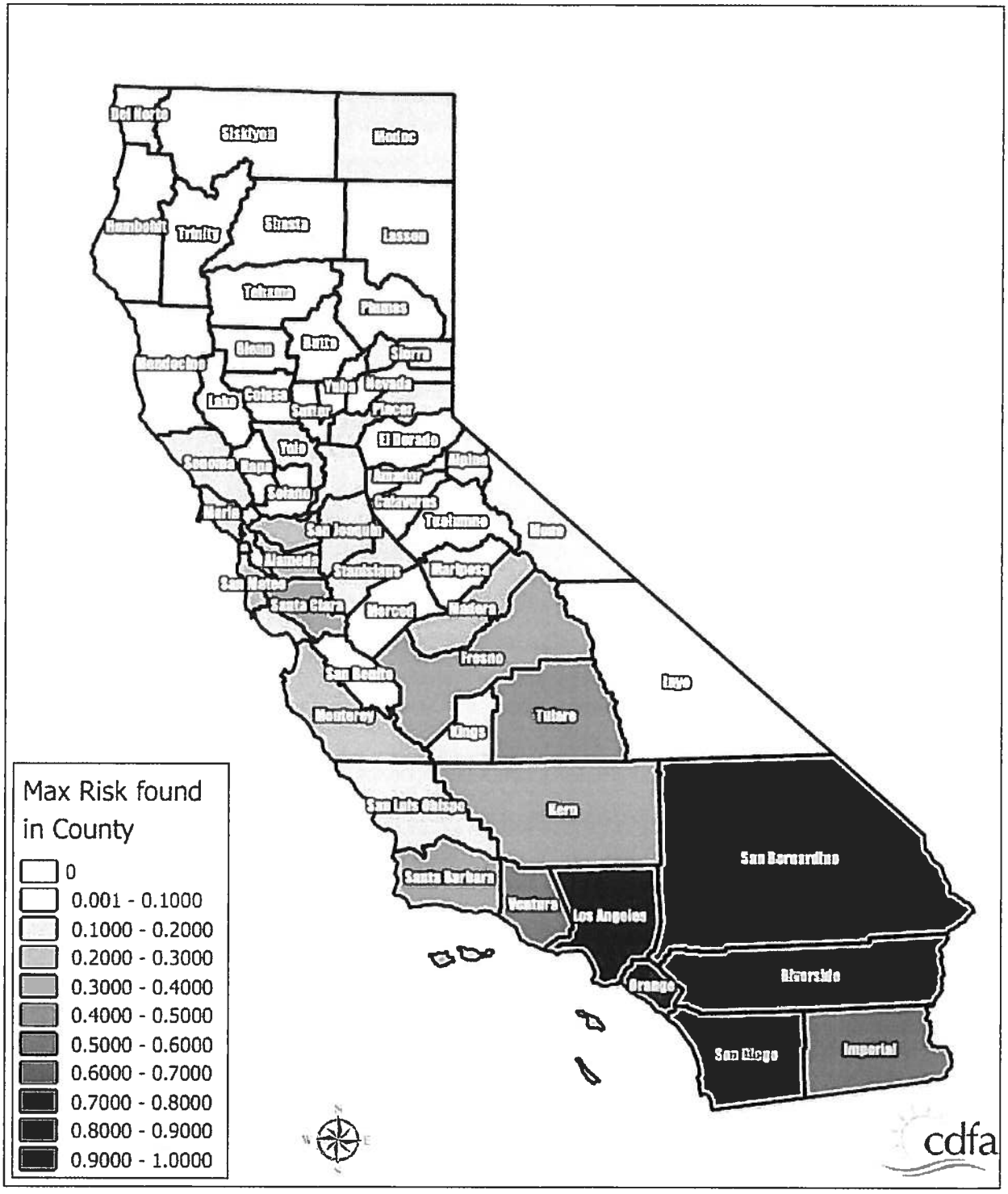


Figure 1. Maximum HLB risk level by county across California as estimated by the USDA-ARS HLB risk model.

In Figure 1 note that the risk level is generally higher in the south than north, because of the known presence of HLB and large ACP population in the southern counties. Note also that in northern California even counties with only a few ACP detections – for example Santa Clara County – may still have

relatively high risk levels because of population census data that indicate the background risk of the presence of infected citrus in private yards is relatively high. To illustrate this point further, Figure 2 shows the San Francisco Bay Area in more detail.

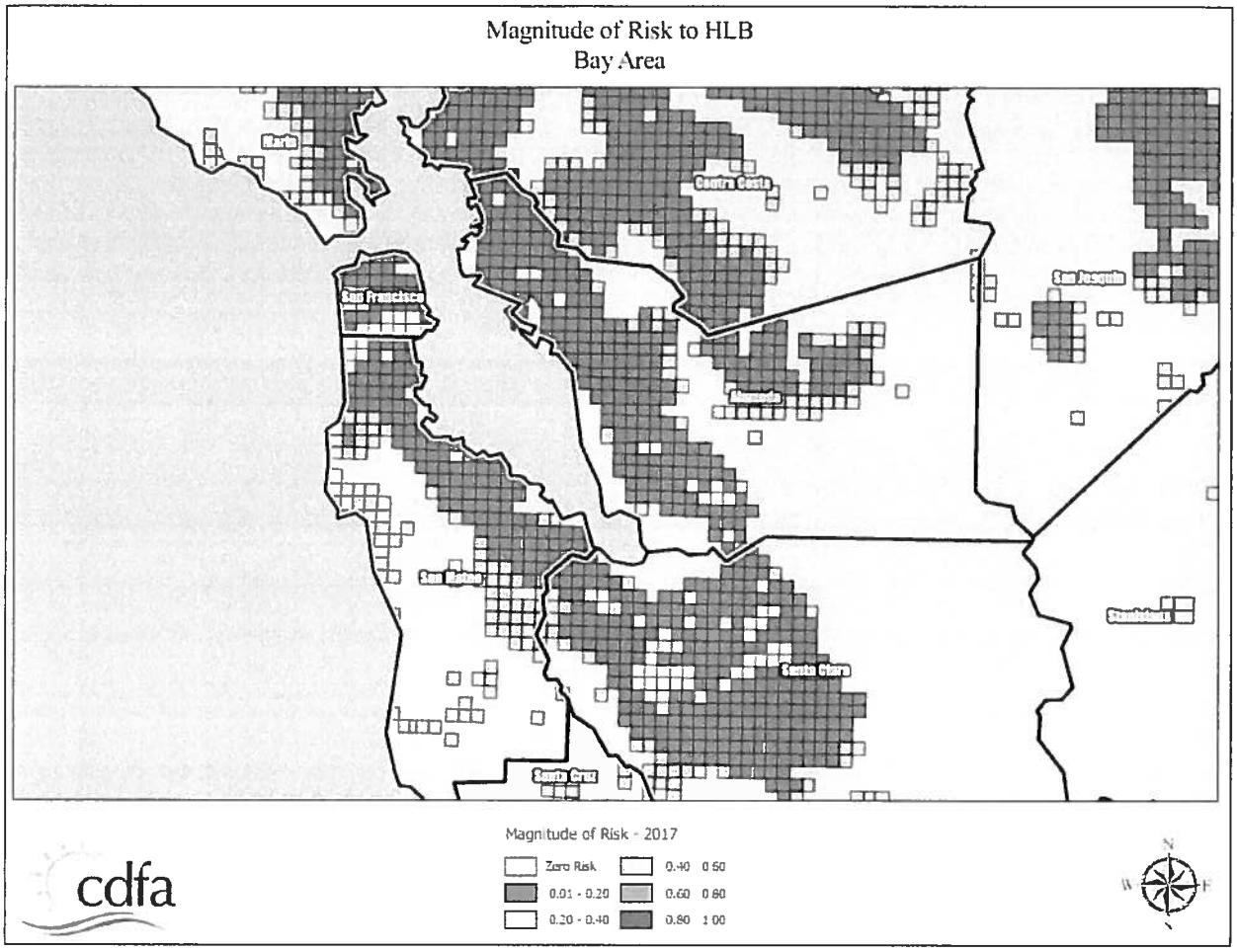


Figure 2. Individual square mile HLB risk levels for the San Francisco Bay Area. Note that the general risk level is low, but there are pockets of moderately high risk in San Francisco itself, and more noticeably in San Jose, associated with population census risk factors; ACP detections in this area is still low and sporadic.

While the background risk of HLB is strongly dependent on factors which are either static (e.g. topography) or change only slowly (e.g. human socio-economic factors) the presence of the ACP vector of the pathogen introduces a large dynamic component into the risk level across the state. To illustrate the impact of the vector population on changing risk status for HLB Figure 3 shows changes in HLB risk for the proposed quarantine areas 5 (San Diego, Imperial and Eastern Riverside) and 6 (LA. Western Riverside, San Bernardino and Orange). The risk level is shown as a blue-to-red heat map with higher risk indicated by darker red color and lower risk indicated by darker blue color; a time series of six periods is shown for each area.

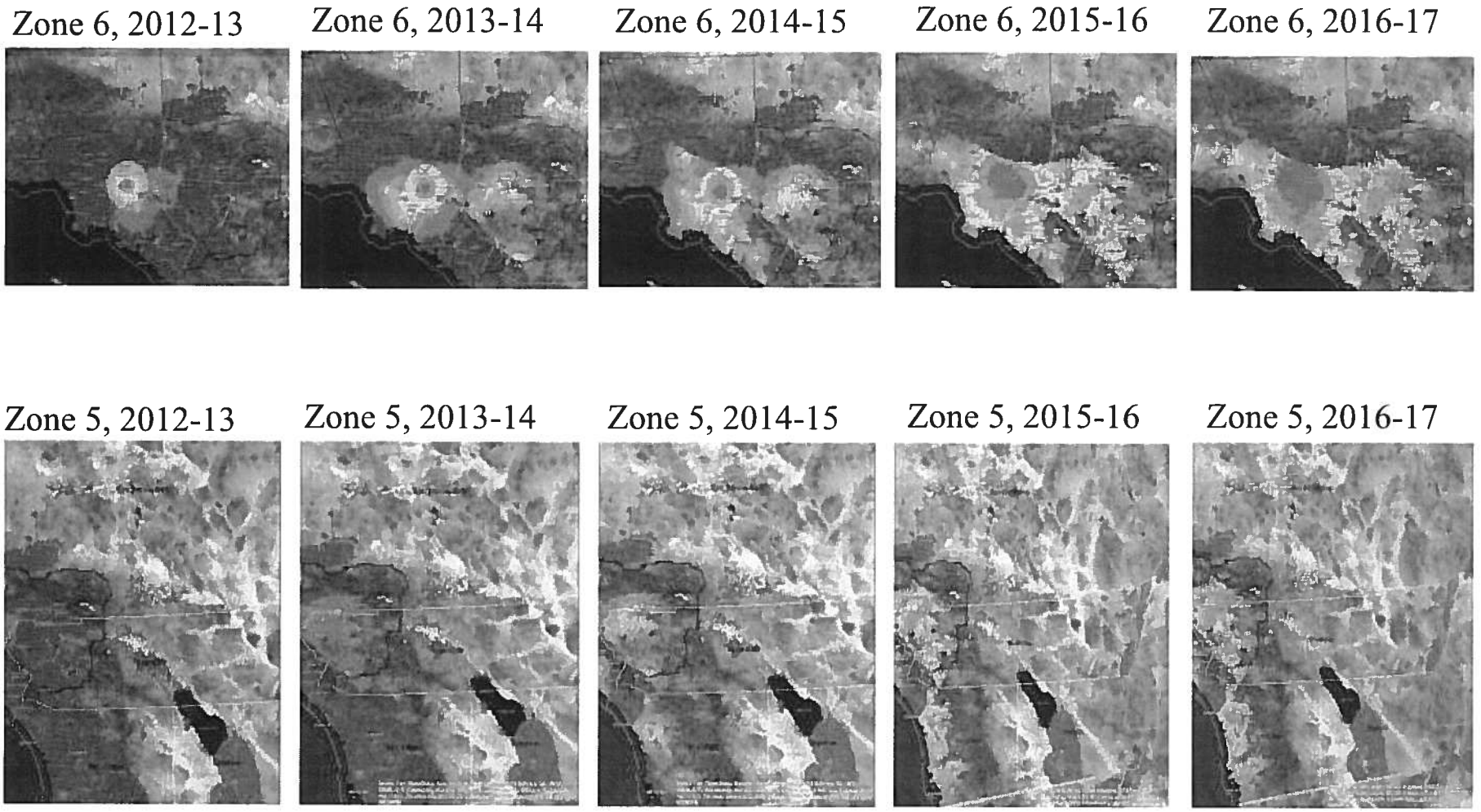


Figure 3. Changes in background risk of HLB in proposed quarantine areas 5 and 6 from 2012 to present. Red color indicates high risk, blue indicates low risk. Note that the location of the early HLB detections in Hacienda Heights and San Gabriel falls inside the single high-risk area predicted in 2012. The progressive increase in risk in both areas is apparent with the passage of time. All known cases of HLB are in proposed Quarantine Area 6.

Figure 3 tells us at least two useful things about HLB risk. First, note that in 2012-13 the only area of predicted high risk was centered on Hacienda Heights and San Gabriel, the locations of the first HLB discoveries in California; in other words, the risk model correctly anticipated the presence of HLB. Also note that the model also highlighted the focus of high risk in the city of Riverside as early as 2013-14; this outbreak emerged in 2017. These results are important for interpreting the presence of areas of elevated risk in places such as San Jose. Second, the pattern of change in risk in both areas 5 and 6 is a steady increase, spreading out from the original high risk area in LA, but also with additional foci developing at locations quite distant from the original focus. These changes are associated mainly with the spread of ACP through the region and the patterns of population density of the insect recorded in the risk-based surveys.

Taken together the results presented in this section highlight two important aspects of HLB risk that are relevant to quarantine regulations:

1. Because HLB-affected citrus plant material can be propagated and spread by human activity, the risk of HLB and ACP are to some extent independent, particularly in areas that are not generally infested with ACP.
2. **The risk of HLB can exist before the arrival of the vector** in an area because HLB-affected plant material is often brought to an area by human activities.

After ACP infests an area with pre-existing infected trees present, the vector population eventually comes into contact with the infected trees and foci of disease begin to build around them. This is because ACP acquires the pathogen from the infected trees and establishes a recurring cycle of infection and acquisition. Because trees remain asymptomatic for a long period of time, spread in the absence of detection and tree removal can occur.

Reducing disease spread by quarantines

The basic principle of underlying the use of quarantines is to restrict the spread of disease by sub-dividing an area into smaller regions and limiting the opportunities for disease to spread from one region to another. In the case of invasive and highly mobile diseases, quarantines should be applied early and rigorously to have the largest effect on disease spread. Importantly, quarantines do not have to be 100% effective to be worth imposing. If the incursion of the disease into generally uninfected areas can be limited to a low rate, and psyllid populations can be kept low, local eradications can be achieved when new incursions are detected.

The basic idea of setting up quarantine regions within the state is an ecological analogue of the idea of constructing a ship using multiple watertight compartments; even if one compartment is flooded, as long as the flow of water is negligible to the other compartments the ship won't sink. In instituting a quarantine policy, the aim is to limit the flow of vectors and disease throughout the state and thus safeguard the industry and homeowners as a whole.

Recent changes in the dynamics of HLB/ACP detections

Until recently, the rate of accumulation of new positive ACP and tree detections had been relatively stable. Over the last 6 months there has been a dramatic increase in the rate of new detections of HLB infections in both ACP and citrus trees. In addition, there has been a recent increase in the number of cities in which positive finds have been reported and a sharp increase in the number of ACP nymph detections. These results are summarized in Figures 4 through 7.

Taken together the results indicate an exponential increase in the intensity of the HLB epidemic at multiple scales. The pathogen is becoming more prevalent in the vector population and in the tree population. At the same time, the upswing in nymphal detections indicates that the transmission rate is increasing and the increase in the number of cities with positive detections indicates that the geographic extent of the epidemic is increasing rapidly.

Most of these changes have become apparent only in the last 6 months. Given the very sharp increase in the intensity of the epidemic, a rapid response is needed to implement additional measures to slow the rate of spread of HLB beyond its current range before the opportunity is lost.

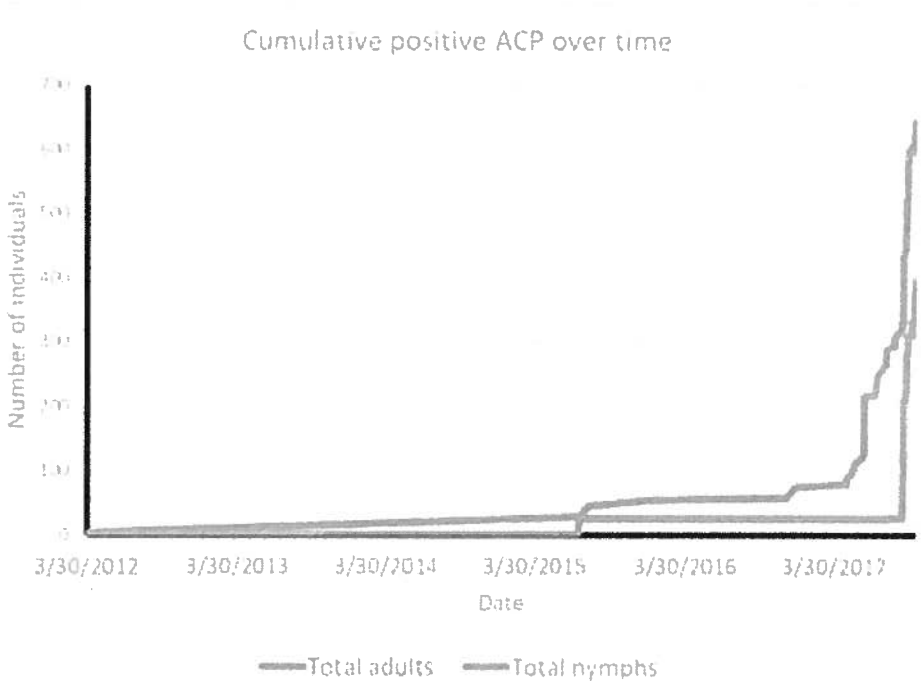


Figure 4: Cumulative counts of PCR-positive ACP samples collected in California over time since 2012. Note the sharp increase in the rate of accumulation from mid-2017 onwards.

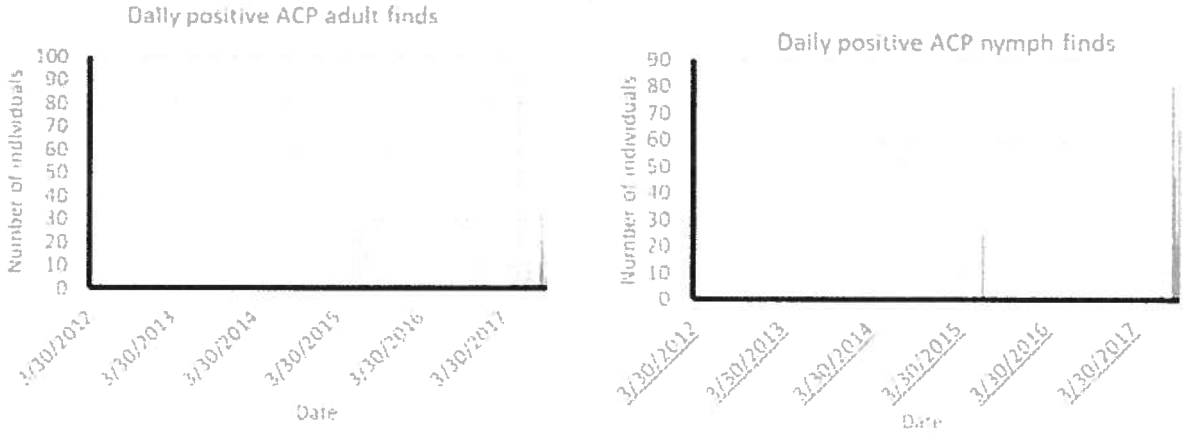


Figure 5: Daily discovery rate for PCR-positive ACP (adults and nymphs are shown separately). Note the sharp increase in finds toward the end of 2017, particularly for nymphs which had largely been absent from positive samples until recent detections.

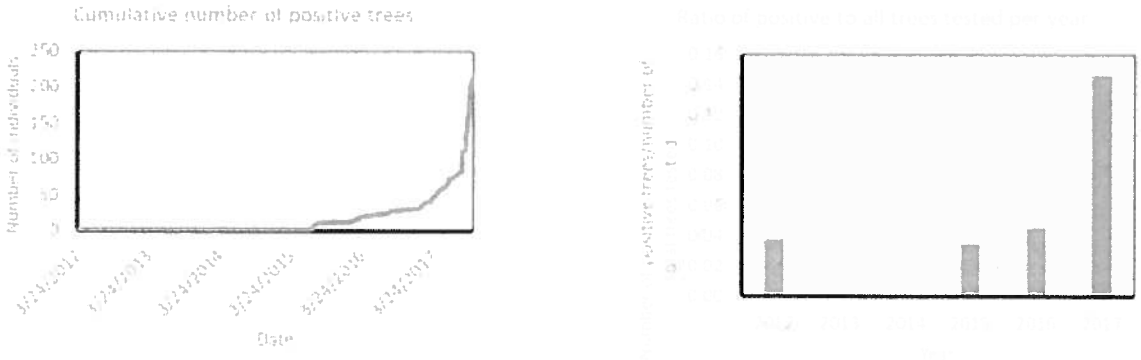


Figure 6: PCR-positive tree detections over time. In the left panel the cumulative number of detections is shown, highlighting the exponential increase in 2017. In the right panel the ratio of positive trees to all trees tested per year is shown. Note that until 2017 the ratio had been more or less stable at approximately 5%, but has nearly tripled in 2017 to just under 15%.

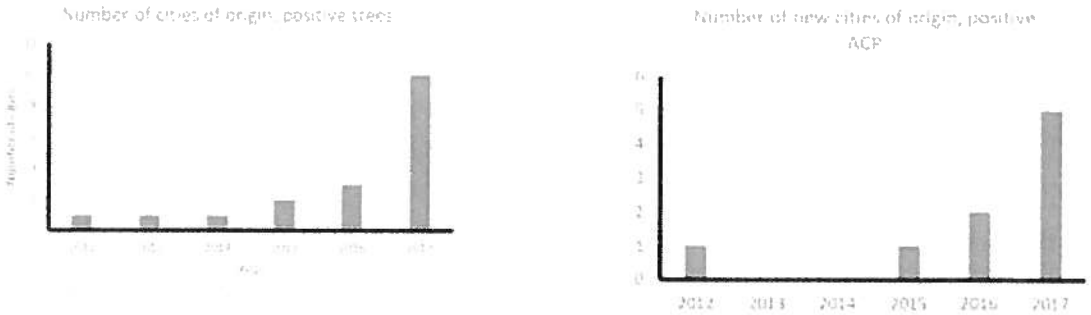


Figure 7: Numbers of citites with PCR-positive ACP detections over time. The left panel shows the cumulative figure, the right panel shows the number of new cities per year. Mirroring the results for trees and for ACP, note the sharp increase in 2017. These results indicate that the epidemic is intensifying across several spatial scales at a very high rate.

Changes in diagnostic results on tested Asian Citrus Psyllids

The previous section detailed the recent sharp increases in PCR detections for ACP and trees. These increases indicate that the pathogen population is growing and this can be seen directly by considering the Ct values in qPCR tests. Results highlighting the increase in the pathogen population are shown here in Figures 8 and 9.

Figure 8 shows the data for qPCR Ct values obtained from psyllid samples collected in different sampling cycles of the survey program. The data are sub-divided into samples obtained from inside and outside the existing HLB quarantine areas. It can be seen that the Ct values obtained from ACP samples inside the quarantine areas are showing a much faster increase in the proportion of low values (CT <32 to 33), indicating an intensification of the pathogen population in the vector population.

The presence of some ACP with low qPCR Ct values outside the existing quarantine areas highlights the risk of ACP moving the disease around and the need for quarantine regulations that apply at a larger scale than the current radius around confirmed HLB-positive trees.

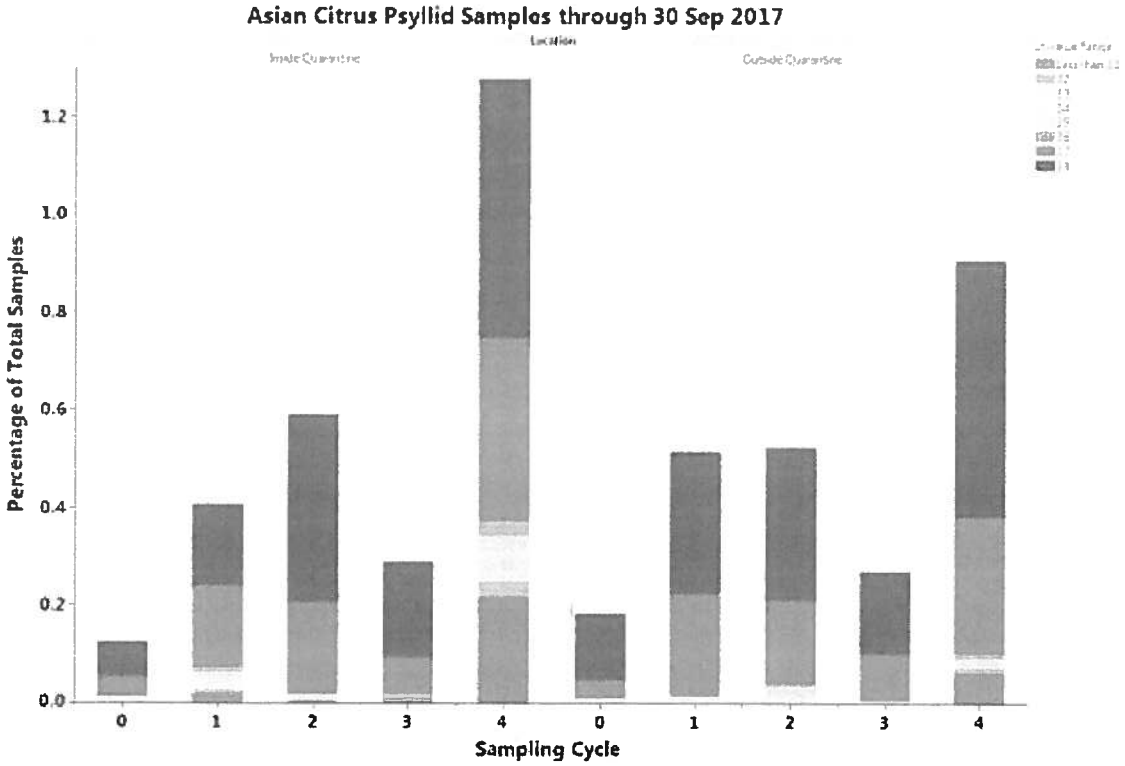


Figure 8: qPCR test results on ACP samples tested by CDFA through 30 September 2017. Note that the proportion of light blue and red (indicating presence of the HLB pathogen) in the samples from inside the quarantine areas (left panel) has increased over time, whereas no corresponding change is apparent in samples outside the quarantine areas (right panel).

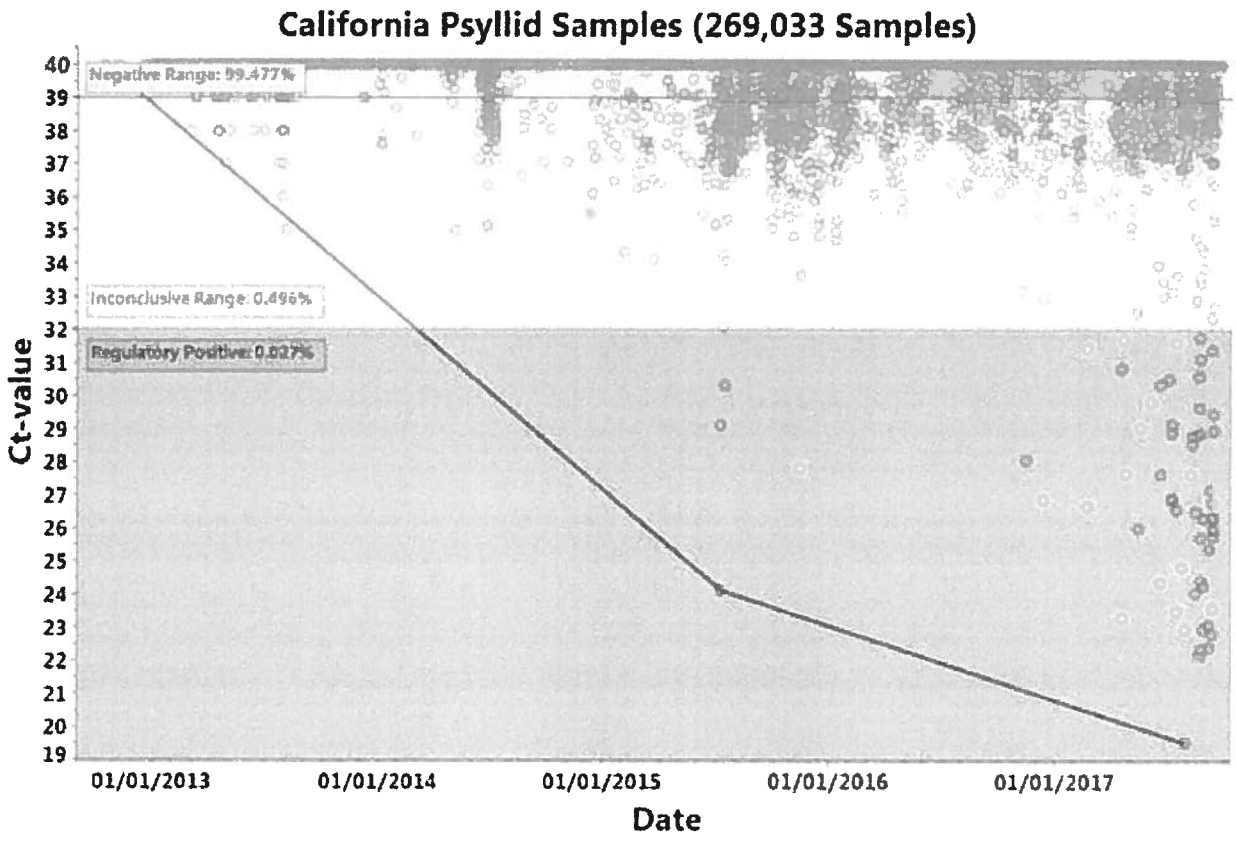


Figure 9: qPCR regulatory results recorded since the detection of HLB in California over time compared to the concentration of the pathogen in the sample (Ct < 32.1= HLB positive (red zone), Ct 32.1-38.9 = suspect (yellow zone), Ct > 38.9=HLB not detected (green zone)). The lower the Ct value, the higher the concentration of the HLB bacterium. Note the trend towards lower Ct values over time and the increase in numbers of HLB positive psyllids starting in 2015 and continuing through 2017 indicating that the titre (concentration) of HLB DNA in the psyllids is increasing.

Implications of changes in the dynamics and recommendations

To summarize the recent changes in the dynamics of HLB/ACP detections in trees and psyllids:

1. The number of HLB positive citrus trees detected has increased exponentially in the last 4 months as compared to the previous 6 years.
2. The number of HLB positive and infectious Asian citrus psyllids has increased exponentially in the last four months as compared to the previous 6 years.
3. These HLB infectious psyllids are spreading to new communities in the LA basin at a significantly escalated rate compared to the previous 6 years.
4. These infectious psyllids can be spread by movement of ACP-host nursery stock, bulk citrus, and other possible carriers of ACP.

Given the above developments in the California HLB epidemic it is of the utmost urgency to further compartmentalize the state using quarantine zones defined by HLB risk to commercial citrus (rather than 5 mile and county wide quarantines). This will help to reduce the potential for spread of HLB to zones where HLB has not been detected in citrus trees, nor has Asian citrus psyllid become established in some cases. The proposal to divide the state into 7 zones for bulk citrus movement and three zones for nursery stock, will serve to restrict the dispersal of HLB and its ACP vectors. Currently all known HLB infected trees are inside a single quarantine zone – zone 6. However, with the exponential escalation of the number of infected ACP and citrus trees requires an immediate regulatory response to restrict spread before the opportunity for such measures to be effective is lost.

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

OFFICIAL NOTICE
FOR THE COMMUNITIES OF
ANAHEIM, FULLERTON, GARDEN GROVE, HUNTINGTON BEACH, LA HABRA, NORTH TUSTIN, PLACENTIA, ORANGE, SANTA ANA, TUSTIN, WESTMINSTER, AND YORBA LINDA IN ORANGE COUNTY
PLEASE READ IMMEDIATELY

AMENDMENT TO THE NOTICE OF TREATMENT FOR THE ASIAN CITRUS PSYLLID

Between June 14, 2017 and September 13, 2019, the California Department of Food and Agriculture (CDFA) confirmed the presence of the causative bacterial agent of the citrus disease huanglongbing (HLB) in citrus tree tissue and insect vectors collected in the cities of Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Placentia, Orange, Santa Ana, Tustin, Westminster, and Yorba Linda in Orange County. HLB is a devastating disease of citrus and is spread through feeding action by populations of the Asian citrus psyllid (ACP), *Diaphorina citri* Kuwayama. In order to determine the extent of the infestation, and to define an appropriate response area, additional surveys took place for several days over a one quarter-square mile area, centered on the detection sites. Based on the results of the surveys, implementation of the CDFA's current ACP and HLB response strategies, which include treatment for ACP, are necessary for eradication and control.

A Program Environmental Impact Report (PEIR) has been certified which analyzes the ACP and HLB treatment program in accordance with Public Resources Code, Sections 21000 et seq. The PEIR is available at http://www.cdfa.ca.gov/plant/peir/. The treatment activities described below are consistent with the PEIR.

In accordance with integrated pest management principles, CDFA has evaluated possible treatment methods and determined that there are no physical, cultural or biological control methods available to control ACP in this area. Notice of Treatment is valid until September 13, 2020, which is the amount of time necessary to determine that the treatment was successful.

The treatment plan for the ACP infestation will be implemented within a 400-meter radius of each detection site, as follows:

- Tempo® SC Ultra (cyfluthrin), a contact insecticide for controlling the adults and nymphs of ACP, will be applied from the ground using hydraulic spray equipment to the foliage of host plants; and

- Merit® 2F or CoreTect™ (imidacloprid), a systemic insecticide for controlling the immature life stages of ACP, will be applied to the soil underneath host plants. Merit® 2F is applied from the ground using hydraulic spray equipment. CoreTect™, which is used in place of Merit® 2F in situations where there are environmental concerns about soil surface runoff of liquid Merit® 2F, is applied by inserting tablets into the ground and watering the soil beneath the host plants.

Public Notification:
Residents of affected properties shall be invited to a public meeting where officials from CDFA,

the Department of Pesticide Regulation, the Office of Environmental Health Hazard Assessment, and the county agricultural commissioner's office shall be available to address residents' questions and concerns.

Residents are notified in writing at least 48 hours in advance of any treatment in accordance with the Food and Agricultural Code sections 5771-5779 and 5421-5436.

Following the treatment, completion notices are left with the residents detailing precautions to take and post-harvest intervals applicable to the citrus fruit on the property.

Treatment information is posted at http://cdfa.ca.gov/plant/acp/treatment_maps.html. Press releases, if issued, are prepared by the CDFA information officer and the county agricultural commissioner, in close coordination with the program leader responsible for treatment. Either the county agricultural commissioner or the public information officer serves as the primary contact to the media.

Information concerning the HLB/ACP program shall be conveyed directly to local and State political representatives and authorities via letters, emails, and/or faxes.

For any questions related to this program, please contact the CDFA toll-free telephone number at 800-491-1899 for assistance. This telephone number is also listed on all treatment notices.

Enclosed are the findings regarding the treatment plan, a November 22, 2017 University of California and United States Department of Agriculture briefing paper on the increasing detection rate of ACP/HLB, a map of the treatment area, work plan, integrated pest management analysis of alternative treatment methods, and a pest profile.

Attachments

FINDINGS REGARDING A TREATMENT PLAN FOR
THE ASIAN CITRUS PSYLLID
Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Placentia, Orange, Santa Ana, Tustin, Westminster, and Yorba Linda, Orange County
Program AM-3856

Between June 14, 2017 and September 13, 2019, the California Department of Food and Agriculture (CDFA) confirmed the presence of the causative bacterial agent of the citrus disease huanglongbing (HLB) in citrus tree tissue and insect vectors collected in the cities of Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Placentia, Orange, Santa Ana, Tustin, Westminster, and Yorba Linda in Orange County. HLB is a devastating disease of citrus and is spread through feeding action by populations of the Asian citrus psyllid (ACP), *Diaphorina citri* Kuwayama.

In order to determine the extent of the infestation in Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Placentia, Orange, Santa Ana, Tustin, Westminster, and Yorba Linda, and to define an appropriate response area, an additional survey took place for several days over a one quarter-square mile area, centered on the following detections: June 14, 2017, Fullerton; May 25, 2018, Yorba Linda; July 3, 2019, La Habra; July 15, 2019, Westminster; July 19, 2019, North Tustin; July 26, 2019, Placentia; July 31, 2019, Huntington Beach; August 23, 2019, Tustin; September 13, 2019, Anaheim, Garden Grove, Orange, and Santa Ana. Based on this survey, pest biology, findings and recommendations from California's HLB Task Force, the Primary State Entomologist, the Primary State Plant Pathologist, United States Department of Agriculture (USDA) experts on HLB and ACP, county agricultural commissioner representatives who are knowledgeable on HLB and ACP, and experience gained from USDA's control efforts in the southeastern United States, I have determined that an infestation of HLB exists and it poses a statewide imminent danger to the environment and economy.

The results of the additional survey also indicated that the local infestation is amenable to CDFA's ACP and HLB emergency response strategies, which include chemical control treatment. This option was selected based upon minimal impacts to the natural environment, biological effectiveness, minimal public intrusiveness, and cost.

HLB is considered one of the most devastating diseases of citrus in the world. The bacterium that causes the disease, *Candidatus* Liberibacter asiaticus, blocks the flow of nutrients within the tree and causes the tree to starve to death within two to five years of infection. There is no cure. Symptoms of HLB include yellow shoots with mottling and chlorosis of the leaves, misshapen fruit, fruit that does not fully color, and fruit that has a very bitter taste, which makes it inedible for human consumption. These symptoms often do not appear until two years after infection, making this particular disease difficult to contain and suppress. These undesirable symptoms of HLB-infected trees result in the trees' loss of commercial and aesthetic value while at the same time such trees are hosts for spreading HLB.

ACP is an insect pest that is native to Asia. It has appeared in Central and South America. In the United States, ACP has been found in Alabama, Arizona, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, and Texas. In California, ACP has been found in twenty-six counties.

ACP feeds on members of the plant family Rutaceae, primarily on *Citrus* and *Murraya* species, but is also known to attack several other genera, including over forty species of plant that act as hosts and possible carriers. The most serious damage to the environment and property caused by ACP – the death and loss in value of host plants – is due to its vectoring HLB. In addition, the psyllids also cause injury to their host plants via the withdrawal of large amounts of sap as they feed and via the production

of large amounts of honeydew, which coats the leaves of the tree and encourages the growth of sooty mold. Sooty mold blocks sunlight from reaching the leaves.

These pests present a significant and imminent threat to the natural environment, agriculture, and economy of California. For example, unabated spread of HLB would have severe consequences to both the citrus industry and to the urban landscape via the decline and the death of citrus trees. The value of California citrus production in the 2016-17 marketing year was $3.389 billion. The total economic impact of the industry on California's economy in 2016-17 was $7.1 billion. The California citrus industry added $1.695 billion to California's state GDP in 2016. Estimated full time equivalent jobs in the California citrus industry in 2016-17 totaled 21,674. Estimated wages paid by the California citrus industry income in 2016-17 totaled $452 million. A 20 percent reduction in California citrus acreage would cause a loss of 7,350 jobs, $127 million in employee income, and reduce state GDP by $501 million.

Additionally, if unabated, the establishment of HLB in California would harm the natural environment as commercial and residential citrus growers would be forced to increase pesticide use. And, the establishment of HLB could lead to enforcement of quarantine restrictions by the USDA and our international trading partners. Such restrictions would jeopardize California's citrus exports, which are valued at over $800 million per year.

The causative bacteria of HLB was first detected in Los Angeles in 2012. It has subsequently been detected in Orange, Riverside, and San Bernardino counties. Prior to November 2017, the level of HLB risk in California was thought to be relatively stable. However, on November 22, 2017, the University of California and the United States Department of Agriculture released a briefing paper that indicates, beginning in June 2017, a sharp increase in HLB and HLB-positive ACP detections, cities containing HLB, and ACP nymphs. With the release of the November 22, 2017 briefing paper, the Department became aware of the exponential intensification of the HLB epidemic, as demonstrated by the indicators contained in the paper.

Infected trees are destroyed as soon as they are discovered. However, due to the length of time it takes for symptoms to appear on infected trees, new infestations continue to be discovered. If the current infestation is not abated immediately, ACP will likely become established in neighboring counties and could pave the way for a statewide HLB infestation.

CDFA has evaluated possible treatment methods in accordance with integrated pest management (IPM) principles. As part of these principles, I have considered the following treatments for control of ACP: 1) physical controls; 2) cultural controls; 3) biological controls; and 4) chemical controls. Upon careful evaluation of each these options, I have determined that it is necessary to address the imminent threat posed by HLB using currently available technology in a manner that is recommended by the HLB Task Force.

Based upon input from the HLB Task Force, the Primary State Entomologist, the Primary State Plant Pathologist, USDA experts on HLB and ACP, and county agricultural commissioner representatives who are knowledgeable on ACP and HLB, I find there are no physical, cultural or biological control methods that are both effective against ACP and allow CDFA to meet its statutory obligations, and therefore it is necessary to conduct chemical treatments to abate this threat. As a result, I am ordering insecticide treatments for ACP using ground-based equipment within a 400-meter radius around each HLB detection site and any subsequent sites.

A Program Environmental Impact Report (PEIR) has been prepared which analyzes the ACP and HLB treatment program in accordance with Public Resources Code (PRC), Sections 21000 et seq. The PEIR was certified in December 2014, and is available at http://www.cdfa.ca.gov/plant/peir/. The PEIR addresses the treatment of the ACP and HLB at the program level and provides guidance on future actions against ACP and HLB. It identifies feasible alternatives and possible mitigation measures to be implemented for individual ACP and HLB treatment activities. The ACP and HLB program has incorporated the mitigation measures and integrated pest management techniques as described in the PEIR. In accordance with PRC Section 21105, this PEIR has been filed with the appropriate local planning agency of all affected cities and counties. No local conditions have been detected which would justify or necessitate preparation of a site-specific plan.

Sensitive Areas

CDFA has consulted with the California Department of Fish and Wildlife's California Natural Diversity Database for threatened or endangered species, the United States Fish and Wildlife Service, the National Marine Fisheries Service and the California Department of Fish and Wildlife when rare and endangered species are located within the treatment area. Mitigation measures for rare and endangered species will be implemented as needed. The CDFA shall not apply pesticides to bodies of water or undeveloped areas of native vegetation. All treatment shall be applied to residential properties, common areas within residential development, non-agricultural commercial properties, and rights-of-way.

Work Plan

The proposed treatment area encompasses those portions of Orange County which fall within a 400-meter area around the properties on which the causative agent of HLB has been detected, and any subsequent detection sites within the proposed treatment boundaries. Notice of Treatment is valid until September 13, 2020, which is the amount of time necessary to determine that the treatment was successful. A map of the program boundaries is attached. The work plan consists of the following elements:

1. ACP Monitoring. Visual surveys and detection trapping within a 400-meter radius around each HLB detection site will be conducted to monitor post-treatment ACP populations.

2. ACP and HLB Visual Survey. All host plants will be inspected for ACP and for HLB symptoms within a 400-meter radius around each HLB detection site, at least twice a year. ACP and host plant tissue will be collected and forwarded to a USDA accredited laboratory for identification and analysis.

3. HLB Disease testing. All host tree tissues and ACP life stages shall be tested for the presence of HLB.

4. Treatment. All properties with host plants within a 400-meter radius around each HLB detection site shall be treated according to the following protocol to control ACP:

    a. Tempo® SC Ultra, containing the contact pyrethroid insecticide cyfluthrin, shall be applied by ground-based hydraulic spray equipment to the foliage of host plants for controlling the adults and nymphs of ACP. Treatment may be reapplied up to three times annually if

additional ACP are detected.

b. Either Merit® 2F or CoreTect™, containing the systemic insecticide imidacloprid, will be applied to the root zone beneath host plants for controlling developing nymphs and providing long term protection against re-infestation. Merit® 2F is applied as a soil drench, while CoreTect™ tablets are inserted two to five inches below the soil surface and watered in to initiate tablet dissolution. CoreTect™ is used in place of Merit® 2F in situations where there are environmental concerns about soil surface runoff of the liquid Merit® 2F formulation, such as host plants growing next to ponds and other environmentally sensitive areas. Treatment may be re-applied once annually if additional ACPs are detected.

Public Information

Residents of affected properties shall be invited to a public meeting where officials from CDFA, the California Department of Pesticide Regulation, the Office of Environmental Health Hazard Assessment, and the county agricultural commissioner's office shall be present to address residents' questions and concerns.

Residents shall be notified in writing at least 48 hours in advance of any treatment in accordance with the Food and Agricultural Code (FAC), Section 5771 – 5779 and 5421-5436.

After treatment, completion notices are left with the residents detailing precautions to take and post-harvest intervals applicable to the citrus fruit. Treatment information is posted at http://cdfa.ca.gov/plant/acp/treatment_maps.html.

For any questions related to this program, please contact the CDFA toll-free telephone number at 800-491-1899 for assistance. This telephone number is also listed on all treatment notices. Treatment information is posted at http://cdfa.ca.gov/plant/acp/treatment_maps.html.

Press releases, if issued, are prepared by the CDFA information officer and the county agricultural commissioner, in close coordination with the program leader responsible for treatment. Either the county agricultural commissioner or the public information officer serves as the primary contact to the media.

Information concerning the HLB/ACP program will be conveyed directly to local and State political representatives and authorities via letters, emails, and/or faxes.

Findings

HLB and ACP pose a significant and imminent threat to California's natural environment, agriculture, public and private property, and its economy.

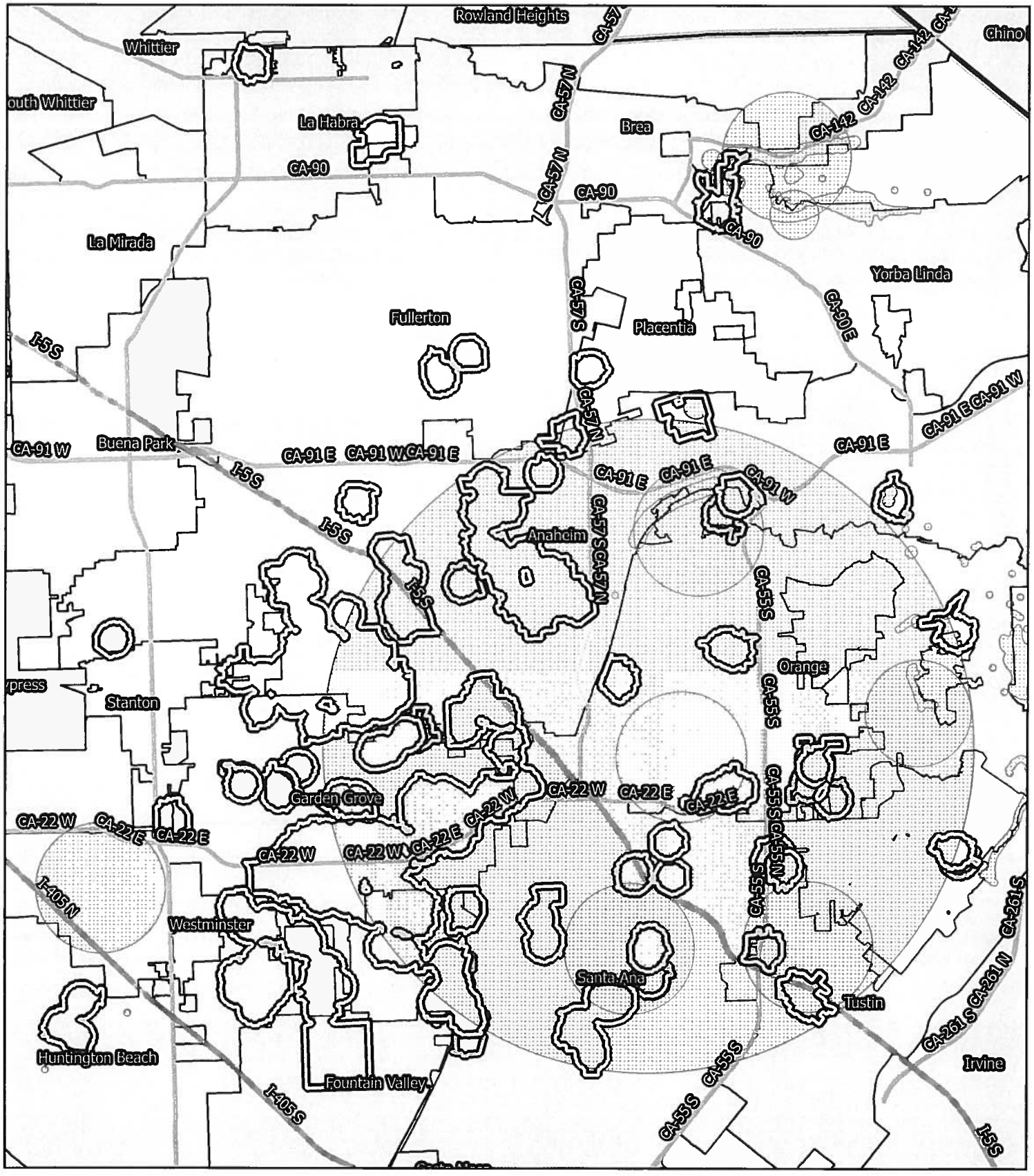
The work plan involving chemical control of these pests is necessary to prevent loss and damage to California's natural environment, citrus industry, native wildlife, private and public property, and food supplies.

My decision to adopt findings and take action is based on sections 24.5, 401.5, 403, 407, 408, 5401-5405, and 5761-5764 of the FAC.

Jennifer Moffitt, for
Karen Ross, Secretary

9/20/2019
Date

Asian Citrus Psyllid Program
Anaheim, Fullerton, Garden Grove, Huntington Beach, La Habra, North Tustin, Orange, Placentia, Santa Ana, Tustin, Westminster, Yorba Linda, Orange County Amendment
2019



cdfa

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Existing 400m Treatment Area

New 400m Treatment Area

Sensitive Environmental Area/Treatment Mitigations In Place

N W E S

Asian Citrus Psyllid/ Huanglongbing Work Plan
December 2018

I. Trapping and Visual Survey

A. Urban and Rural Residential Detection Trapping and Visual Survey

This is a cooperative State/County trapping program for the Asian citrus psyllid (ACP) to provide early detection of an infestation in a county. Traps are serviced by agricultural inspectors. The trap used for ACP detection is the yellow panel trap, which is a cardboard panel coated with stickum on each side. ACP becomes entangled on the sticky surface and cannot move off the trap. Yellow panel traps have proven successful at detecting infestations of ACP. At all locations where traps are placed, the host plant is visually inspected for ACP. If ACP is detected, the host will be visually surveyed for additional ACP and symptoms of huanglongbing (HLB).

- Trap Density: Five to 16 traps/square mile.
- Trap Servicing Interval: Every two to four weeks.
- Trap Relocation and Replacement: Traps should be replaced and relocated every four to eight weeks to another host at least 500 feet away, if other hosts are available.
- Visual surveys and/or tap sampling are conducted once at each trapping site when the trap is placed.

B. Delimitation Trapping and Visual Survey Outside of the Generally Infested Area

The protocols below are the actions in response to the detection of ACP in counties north of Santa Barbara County and the Tehachapi Mountains.

1. Response to the collection one or more ACP

a. Trapping

Density will be 50 traps per square mile in a four-square mile delimitation area centered on the detection site. Traps will be serviced weekly for one month. If no additional ACP are detected, the traps will be serviced monthly for one year past the identification date. Additional detections may increase the size of the delimitation survey area and will restart the one-year clock on the trap servicing requirement.

b. Visual Survey

All find sites and adjacent properties will be visually surveyed for ACP and HLB. Additional sites may be surveyed as part of the risk-based survey.

C. Commercial Grove Trapping

In counties with substantial commercial citrus production and are not generally infested with ACP, traps are placed within the groves at the density of one trap per 40 acres. Traps are replaced every month and submitted for screening.

In areas that are generally infested with ACP, agricultural inspectors visually survey commercial groves for plant tissue displaying symptoms of HLB and collect ACP which are tested for HLB.

D. Transect Survey

If high or scattered ACP populations are found in the initial inspections, a transect survey may be implemented to rapidly determine the extent of the infestation. This involves

inspecting a minimum of 20 properties per square mile and/or placing 20 traps per square mile along eight radii in the cardinal directions (e.g., north, northeast, etc.). Transect surveys extend between five and 20 miles beyond a detection site, depending on the situation.

II. Treatment

CDFA's treatment activities for ACP vary throughout the state and depend on multiple factors. Factors CDFA considers prior to treatment include:

- Determination if suppression of ACP is feasible;
- The proximity of the ACP infestation to commercial citrus;
- Whether growers are conducting coordinated treatment activities;
- The level of HLB risk;
- Consistency with the overall goal of protecting the state's commercial citrus production.

Treatment scenarios throughout the state in which treatment will occur:

- In areas with commercial citrus production that are generally infested with ACP, and where all growers are treating on a coordinated schedule; CDFA may conduct residential buffer treatments to suppress ACP populations.
- In areas with commercial citrus production that are not generally infested with ACP; CDFA will conduct residential treatments in response to ACP detections.
- In areas where HLB is detected, CDFA will conduct residential treatments to suppress ACP populations.
- In areas where ACP has not been previously detected, or where ACP has been detected at low densities, CDFA will conduct residential treatments to prevent ACP establishment or suppress populations.
- In areas where ACP has been detected along the California-Mexico border, CDFA will conduct residential treatments in response to ACP detections to suppress ACP populations.

CDFA's current policy is to not conduct treatments in areas that are generally infested if there is limited or no commercial citrus production in the area, or if all growers in the area are not treating.

1. Treatment Protocols

A Program Environmental Impact Report (PEIR) has been certified which analyzes the ACP treatment program in accordance with Public Resources Code, Sections 21000 et seq. The PEIR is available at http://www.cdfa.ca.gov/plant/peir. The treatment activities described below are consistent with the PEIR.

In accordance with the integrated pest management principles, the CDFA has evaluated possible treatment methods and determined that there are no physical, cultural, or biological control available to eliminate ACP from an area.

In general, when treatment has been deemed appropriate, CDFA applies insecticides to host trees in the residential (urban) areas in a 50 to 800-meter radius around each detection site. Only ACP host plants are treated.

a. Within two miles of International Border with Mexico

- CDFA will treat residential citrus host plants within a 400-meter buffer of the border if ACP have been detected within one mile of the border within one year.
- A NOT will be issued.
- A public meeting will be held at least once per year.

b. Within a Generally Infested Area with Commercial Citrus Production

- CDFA will treat residential citrus host plants within a 400-meter buffer surrounding commercial citrus groves if the growers are conducting coordinated treatments in 90 percent of the designated Psyllid Management Area and if ACP have been detected within one mile of the commercial citrus groves within one year.
    - The exception is Imperial County, which has fewer residential properties, and therefore residential citrus host plants will be treated within 800 meters of commercial citrus.
- A NOT will be issued.
- A public meeting will be held at least once per year.

c. Outside of the Generally Infested Area

The actions below are in response to the detection of one or more ACP in counties north of Santa Barbara County and the Tehachapi Mountains.

- Detection of one ACP - All properties with hosts within a 50-meter radius of the detection site will be treated.
- Detection of two or more ACP - All properties with hosts within a 400-meter radius of the detection site will be treated.
- A NOT will be issued.
- A public meeting will be held at least once per year.

The actions below are in response to the detection of two or more ACP in Fresno, Madera, Kern, Kings, and Tulare counties.

- Detection of two or more ACP on one trap or one or more ACP detected on separate traps within 400 meters of each other within a six-month period – All properties with hosts within a 400-meter radius will be treated.
- In a commercial citrus environment, where there are few residences in the area, CDFA will treat the residential area within an 800-meter buffer surrounding commercial citrus groves if the growers are conducting coordinated treatments.
- A NOT will be issued.
- A public meeting will be held at least once per year.

d. In response to an HLB Detection

- All properties within a 400-meter radius of the detection site will be treated.
- A NOT will be issued.
- All host plants found to be infected with HLB shall be destroyed.

- Infected host plants shall be removed and destroyed by mechanical means.

- A Proclamation of an Emergency Program (PEP) will be issued.
- A public meeting will be held at least once per year.

2. Treatment Methodology

The treatment protocol consists of both a foliar and a systemic insecticide. The foliar insecticide is used for immediate reduction of the adult population in order to prevent the adults from dispersal. The systemic insecticide is a soil treatment used to kill the sedentary nymphs and provide long term protection against reinfestation. Treatment frequency is dependent on the insecticide applied and severity of the infestation. Treatments will end no later than two years after the last psyllid detection in the treatment area.

CDFA uses registered pesticides and follows the label directions. The treatment protocol may be adjusted to use only the foliar or the systemic insecticide to allow for mitigations in special situations.

a. Foliar Treatment

Tempo® SC Ultra (cyfluthrin) is a pyrethroid contact insecticide. Treatment will initially occur once, and subsequent applications may occur for up to three times annually if additional psyllids are detected. This material will be applied to the foliage of all host plants using hydraulic spray or hand spray equipment.

b. Soil Treatment

A systemic soil application will be made using either Merit® 2F or CoreTect™.

- Merit® 2F (imidacloprid), is a neonicotinoid systemic insecticide. Treatment will initially occur once, and a subsequent application may occur once on an annual basis if additional psyllids are detected. This material will be applied to the soil within the root zone of host plants.

- CoreTect™ (imidacloprid) is a neonicotinoid systemic insecticide. It is used in place of Merit® 2F in situations where there are environmental concerns about soil surface runoff of the liquid Merit® 2F formulation, such as host plants growing next to ponds and other environmentally sensitive areas. Treatment will initially occur once, with a subsequent application once on an annual basis if additional psyllids are detected. This material is a pelletized tablet and is inserted into the soil and watered in within the root zone of host plants.

INTEGRATED PEST MANAGEMENT ANALYSIS OF ALTERNATIVE TREATMENT METHODS FOR CONTROL OF THE ASIAN CITRUS PSYLLID AND HUANGLONGBING
May 2018

The treatment program used by the California Department of Food and Agriculture (CDFA) for control of the Asian citrus psyllid (ACP), *Diaphorina citri* (Hemiptera: Psyllidae), and the disease it transmits, namely Huanglongbing, *Candidatus* Liberibacter asiaticus, targets multiple life stages. A contact insecticide is used for an immediate control of ACP adults in order to prevent spread, and a systemic insecticide is used to control developing ACP nymphs and to give the plant long term protection from re-infestation. The contact insecticide preferentially used contains the synthetic pyrethroid cyfluthrin, while the systemic insecticide contains the synthetic neonicotinoid imidacloprid. Both products have been shown to be effective against ACP elsewhere, particularly in Florida. In addition, HLB-infected plants are removed in their entirety and destroyed, in order to remove a reservoir for the disease. The California Huanglongbing Task Force, a joint government, university, and industry group formed in 2007 to provide guidance to the CDFA on matters pertaining to ACP and HLB has endorsed the use of these chemicals in the CDFA's treatment program.

Below is an evaluation of alternative treatment methods to control ACP and HLB which have been considered for treatment programs in California.

A. PHYSICAL CONTROL

Mass Trapping. Mass trapping of adults involves placing a high density of traps in an area in an attempt to physically remove them before they can reproduce. The current available trapping system for ACP relies on short distance visual stimulus, and is not considered effective enough to use in a mass trapping program.

Active Psyllid Removal. Adult ACPs are mobile daytime fliers, and adults could theoretically be netted or collected off of foliage. However, due to their ability to fly when disturbed, and the laborious and time-prohibitive task of collecting minute insects from several properties by hand, it would be highly unlikely that all adults could be captured and removed. Nymphs attach themselves to developing leaves and stems via their proboscis. Therefore, physical removal of the nymphs would entail removal of the growing shoots which will stunt the tree and reduce fruit production. For these reasons, mechanical control is not considered to be an effective alternative.

Host Removal. Removal of host plants for ACP would involve the large-scale destruction of plants and their roots by either physical removal or phytotoxic herbicides. Additionally, host removal could promote dispersal of female psyllids in search of hosts outside of the treatment area, thus spreading the infestation. For these reasons, host removal is considered inefficient and too intrusive to use over the entirety of the treatment areas used for ACP. However, physical host removal of HLB-infected plants in their entirety is used for HLB control, because it is limited in scope to just the infected tree and it is effective at eliminating the disease reservoir, thereby preventing further spread of the disease by ACP.

B. CULTURAL CONTROL

Cultural Control. Cultural controls involve the manipulation of cultivation practices to reduce the prevalence of pest populations. These include crop rotation, using pest-resistant varieties, and intercropping with pest-repellent plants. None of these options are applicable for ACP control in an urban environment, and may only serve to drive the psyllids outside the treatment area, thus spreading the infestation.

C. BIOLOGICAL CONTROL

Microorganisms. No single-celled microorganisms, such as bacteria, are currently available to control ACP.

Nematodes. Entomopathogenic nematodes can be effective for control of some soil-inhabiting insects, but are not effective, nor are they used, against above ground insects such as psyllids.

Parasites and Predators. There have been two parasites released in Florida against ACP, but only one of these are considered somewhat successful there, namely *Tamarixia radiata* (Hymenoptera: Eulophidae). This insect has been released into the environment in southern California. The CDFA is working with the citrus industry to pursue options for incorporating this parasite into treatment programs statewide. In addition, a second wasp has been recently released by the University of California Riverside, *Diaphorencyrtus aligarhensis*.

Sterile Insect Technique (SIT). SIT involves the release of reproductively sterile insects which then mate with the wild population, resulting in the production of infertile eggs. SIT has neither been researched nor developed for ACP, nor has it been developed for any species of psyllids, and is therefore unavailable.

D. CHEMICAL CONTROL

Foliar Treatment. A number of contact insecticides have been researched for use against ACP elsewhere, particularly in Florida. Contact insecticides are more effective against adult ACPs than the sedentary nymphs because adults actively move around on plants, thereby coming into contact with residues, whereas nymphs have to be directly sprayed in order for them to come into contact. The following product has been identified for use by the CDFA, based on a combination of effectiveness against ACP, worker and environmental safety, and California registration status.

Tempo® SC Ultra is a formulation of cyfluthrin which is applied to the foliage of all host plants. Tempo® SC Ultra is a broad-spectrum synthetic pyrethroid insecticide which kills insects on contact. Tempo® SC Ultra has no preharvest interval, which makes it compatible with residential fruit-growing practices.

Soil Treatment. A number of systemic insecticides have been researched for use against ACP elsewhere, particularly in Florida. Systemic insecticides are particularly effective against psyllid nymphs because nymphs spend much of their time feeding, thereby acquiring a lethal dose. The following products have been identified for use by the CDFA, based on a combination of effectiveness against ACP, worker and environmental safety, and California registration status.

Merit® 2F is a formulation of imidacloprid which is applied to the root system of all host plants via a soil drench. Imidacloprid is a synthetic neonicotinoid insecticide which controls a number of other phloem feeding pests such as psyllids, aphids, mealybugs, etc.

CoreTect™ is a formulation of imidacloprid which is applied to the root system of all host plants via insertion of a tablet into the soil, followed by watering. It is used in place of Merit® 2F in situations where there are environmental concerns about soil surface runoff of the liquid Merit® 2F formulation, such as host plants growing next to ponds and other environmentally sensitive areas.

E. RESOURCES

Grafton-Cardwell, E. E. and M. P. Daugherty. 2013. Asian citrus psyllid and huanglongbing disease. Pest Notes Publication 74155. University of California, Division of Agriculture and Natural Resources Publication 8205. 5 pp. http://www.ipm.ucdavis.edu/PDF/PESTNOTES/pnasiancitruspsyllid.pdf.

Grafton-Cardwell, E. E., J. G. Morse, N. V. O'Connell, P. A. Phillips, C. E. Kallsen, and D. R. Haviland. 2013. UC IPM Management Guidelines: Citrus. Asian Citrus Psyllid. Pest Notes Publication 74155. University of California, Division of Agriculture and Natural Resources. http://www.ipm.ucdavis.edu/PMG/r107304411.html.

PEST PROFILE

Common Name: Asian Citrus Psyllid

Scientific Name: *Diaphorina citri* Kuwayama

Order and Family: Hemiptera, Psyllidae

Description: The Asian citrus psyllid (ACP) is 3 to 4 millimeters long with a brown mottled body. The head is light brown. The wings are broadest in the apical half, mottled, and with a dark brown band extending around the periphery of the outer half of the wing. The insect is covered with a whitish waxy secretion, making it appear dusty. Nymphs are generally yellowish orange in color, with large filaments confined to an apical plate of the abdomen. The eggs are approximately 0.3 millimeters long, elongated, and almond-shaped. Fresh eggs are pale in color, then, turn yellow, and finally orange at the time of hatching. Eggs are placed on plant tissue with the long axis vertical to the surface of the plant.

History: Asian citrus psyllid was first found in the United States in Palm Beach County, Florida, in June 1998 in backyard plantings of orange jasmine. By 2001, it had spread to 31 counties in Florida, with much of the spread due to movement of infested nursery plants. In the spring of 2001, Asian citrus psyllid was accidentally introduced into the Rio Grande Valley, Texas on potted nursery stock from Florida. It was subsequently found in Hawaii in 2006, in Alabama, Georgia, Louisiana, Mississippi, and South Carolina in 2008. ACP was first found in California on August 27, 2008 in San Diego County. Subsequent to this initial detection in San Diego County, the ACP has been detected in Fresno, Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Luis Obispo, Santa Barbara, Tulare, Ventura, Marin, Monterey, San Francisco, and Santa Clara counties. The ACP has the potential to establish itself throughout California wherever citrus is grown.

Distribution: ACP is found in tropical and subtropical Asia, Afghanistan, Saudi Arabia, Reunion, Mauritius, parts of South and Central America, Mexico, the Caribbean, and in the U.S. (Alabama, Arizona, California, Florida, Georgia, Hawaii, Louisiana, Mississippi, South Carolina, and Texas).

Life Cycle: Eggs are laid on tips of growing shoots; on and between unfurling leaves. Females may lay more than 800 eggs during their lives. Nymphs pass through five instars. The total life cycle requires from 15 to 47 days, depending on environmental factors such as temperature and season. The adults may live for several months. There is no diapause, but populations are low in the winter or during dry periods. There are nine to ten generations a year, with up to 16 noted under observation in field cages.

Hosts and Economic Importance: ACP feeds mainly on *Citrus* spp., at least two species of *Murraya*, and at least three other genera, all in the family Rutaceae. Damage from the psyllids occurs in two ways: the first by drawing out of large amounts of sap from the plant as they feed and, secondly, the psyllids produce copious amounts of honeydew. The honeydew then coats the leaves of the tree, encouraging sooty mold to grow which blocks sunlight to the leaves. However, the most serious damage caused by ACP is due to its ability to effectively vector three phloem-inhabiting bacteria in the genus *Candidatus* Liberibacter, the most widespread being *Candidatus* Liberibacter asiaticus. These bacteria cause a disease known as huanglongbing, or citrus greening. In the past, these bacteria have been extremely difficult to detect and

characterize. In recent years, however, DNA probes, electron microscopy, and enzyme-linked immunosorbent assay tests (ELISA) have been developed that have improved detection. Symptoms of huanglongbing include yellow shoots, with mottling and chlorosis of the leaves. The juice of the infected fruit has a bitter taste. Fruit does not color properly, hence the term "greening" is sometimes used in reference to the disease. Huanglongbing is one of the most devastating diseases of citrus in the world. Once infected, there is no cure for disease and infected trees will die within ten years. The once flourishing citrus industry in India is slowly being wiped out by dieback. This dieback has multiple causes, but the major reason is due to HLB.

Host List

SCIENTIFIC NAME	**COMMON NAMES**
Aegle marmelos	bael, Bengal quince, golden apple, bela, milva
Aeglopsis chevalieri	Chevalier's aeglopsis
Afraegle gabonensis	Gabon powder-flask
Afraegle paniculata	Nigerian powder-flask
Amyris madrensis	mountain torchwood
Atalantia monophylla	Indian atalantia
Atalantia spp.	
Balsamocitrus dawei	Uganda powder-flask
Bergia (=*Murraya*) *koenigii*	curry leaf
Calodendrum capense	Cape chestnut
X Citroncirus webberi	
Choisya arizonica	Arizonia orange
Choisya ternate	Mexican or mock orange
Citropsis articulata	Katimboro, Muboro, West African cherry orange
Citropsis gilletiana	cherry-orange
Citropsis schweinfurthii	African cherry-orange
Citrus aurantiifolia	lime, Key lime, Persian lime, lima, limón agrio, limón ceutí, lima mejicana, limero
Citrus aurantium	sour orange, Seville orange, bigarde, marmalade orange, naranja agria, naranja amarga
Citrus hystrix	Mauritius papeda, Kaffir lime
Citrus jambhiri	rough lemon, jambhiri-orange, limón rugoso, rugoso
Citrus limon	lemon, limón, limonero
Citrus madurensis (=X *Citrofortunella microcarpa*)	calamondin
Citrus maxima	pummelo, pomelo, shaddock, pompelmous, toronja
Citrus medica	citron, cidra, cidro, toronja
Citrus meyeri	Meyer lemon, dwarf lemon
Citrus × *nobilis*	king mandarin, tangor, Florida orange, King-of-Siam
Citrus × *paradisi*	grapefruit, pomelo, toronja
Citrus reticulata	mandarin, tangerine, mandarina
Citrus sinensis	sweet orange, orange, naranja, naranja dulce
Citrus spp.	
Clausena anisum-olens	anis
Clausena excavata	clausena
Clausena indica	clausena
Clausena lansium	wampi, wampee

Clymenia polyandra	a-mulis
Eremocitrus glauca	Australian desert lime
Eremocitrus hybrid	
Esenbeckia berlandieri	Berlandier's jopoy
Fortunella crassifolia	Meiwa kumquat
Fortunella margarita	Nagami kumquat, oval kumquat
Fortunella polyandra	Malayan kumquat
Fortunella spp.	
Limonia acidissima	Indian wood apple
Merrillia caloxylon	flowering merrillia
Microcitrus australasica	finger-lime
Microcitrus australis	Australian round-lime
Microcitrus papuana	desert-lime
X *Microcitronella* spp.	
Murraya spp.	curry leaf, orange-jasmine, Chinese-box, naranjo jazmín
Naringi crenulata	naringi
Pamburus missionis	
Poncirus trifoliata	trifoliate orange, naranjo trébol
Severinia buxifolia	Chinese box-orange
Swinglea glutinosa	tabog
Tetradium ruticarpum	evodia, wu zhu yu
Toddalia asiatica	orange climber
Triphasia trifolia	trifoliate limeberry, triphasia
Vepris (=*Toddalia*) *lanceolata*	white ironwood
Zanthoxylum fagara	wild lime, lime prickly-ash

UC DAVIS | UC RIVERSIDE UNIVERSITY OF CALIFORNIA

USDA United States Department of Agriculture
Animal and Plant Health Inspection Service

USDA United States Department of Agriculture
Agricultural Research Service

Briefing Paper: Recent changes in the ACP/HLB invasion in California and implications for regional quarantines

Date: 11/22/2017

Neil McRoberts, Carla Thomas, Brianna McGuire
Quantitative Biology & Epidemiology Lab, Plant Pathology Department, UC Davis, CA 95616

Beth Grafton Cardwell
Department of Entomology, UC Riverside & UC Lindcove Research and Extension Center, Exeter, CA 93221

David Bartels
USDA-APHIS-PPQ, Field Operations – Data Analysis, Risk, and Targeting, 2150 Centre Ave., Bldg B., 3E14, Fort Collins, CO 80526

Tim Gottwald
USDA-ARS, U.S. Horticultural Research Laboratory, 2001 S. Rock Road, Fort Pierce, FL 34945

State-wide background risk level for HLB

Since 2012, a background risk level for HLB in both residential and commercial citrus in each square mile of interest has been calculated 2-3 times per year using a risk model developed in Florida and adapted for use in California (Gottwald et al., 2014). The model uses a range of risk variables including census data, topography, land use, and known incidence of both HLB and Asian Citrus Psyllid (ACP) to produce a risk value ranging from 0 (extremely low risk) to 1 (very high risk) that applies to each square mile. Figure 1 shows the current risk status across the state at a county level, where the risk level applied to the county is the highest value for any individual square mile within that county

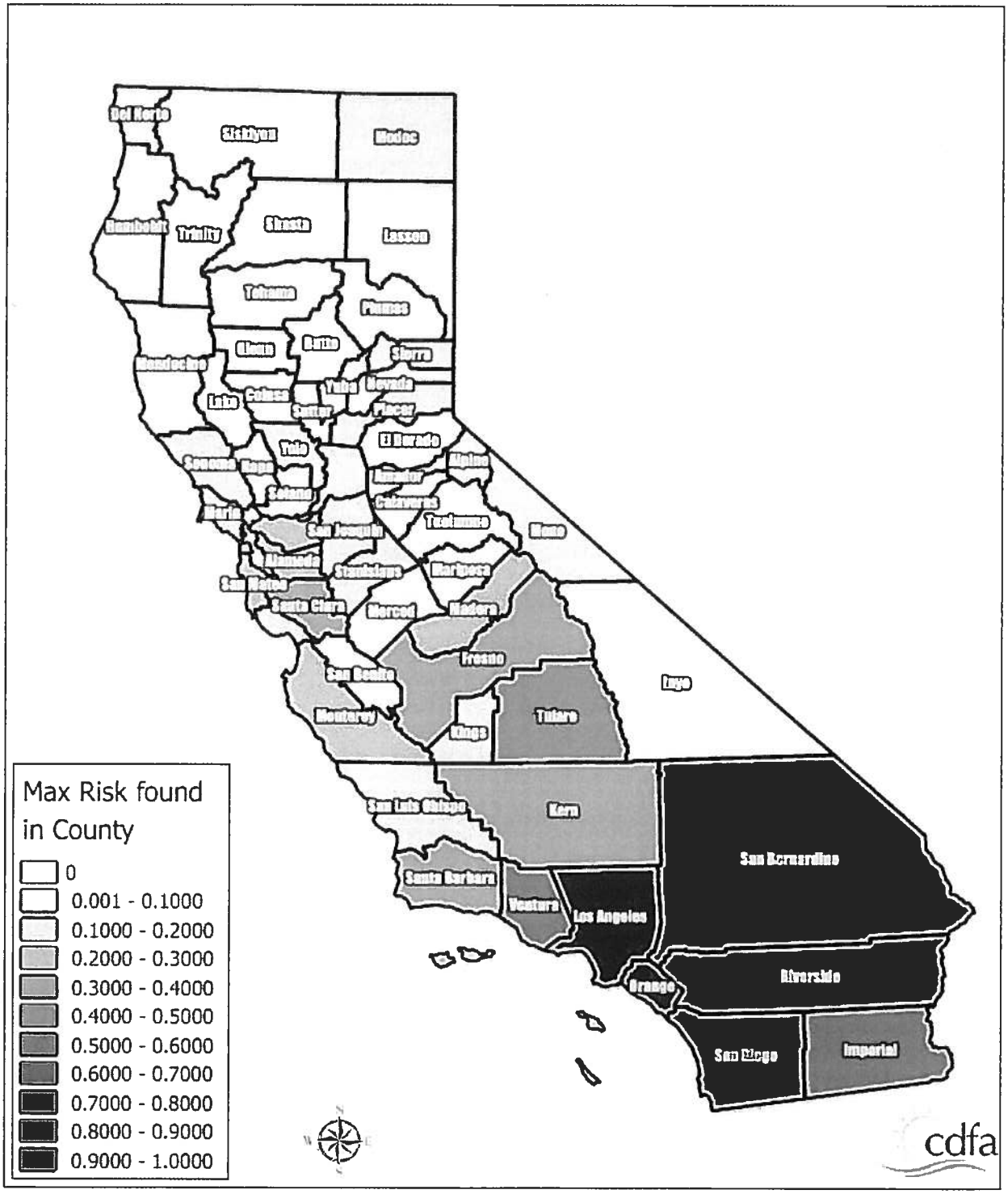


Figure 1. Maximum HLB risk level by county across California as estimated by the USDA-ARS HLB risk model.

In Figure 1 note that the risk level is generally higher in the south than north, because of the known presence of HLB and large ACP population in the southern counties. Note also that in northern California even counties with only a few ACP detections – for example Santa Clara County – may still have

relatively high risk levels because of population census data that indicate the background risk of the presence of infected citrus in private yards is relatively high. To illustrate this point further, Figure 2 shows the San Francisco Bay Area in more detail.

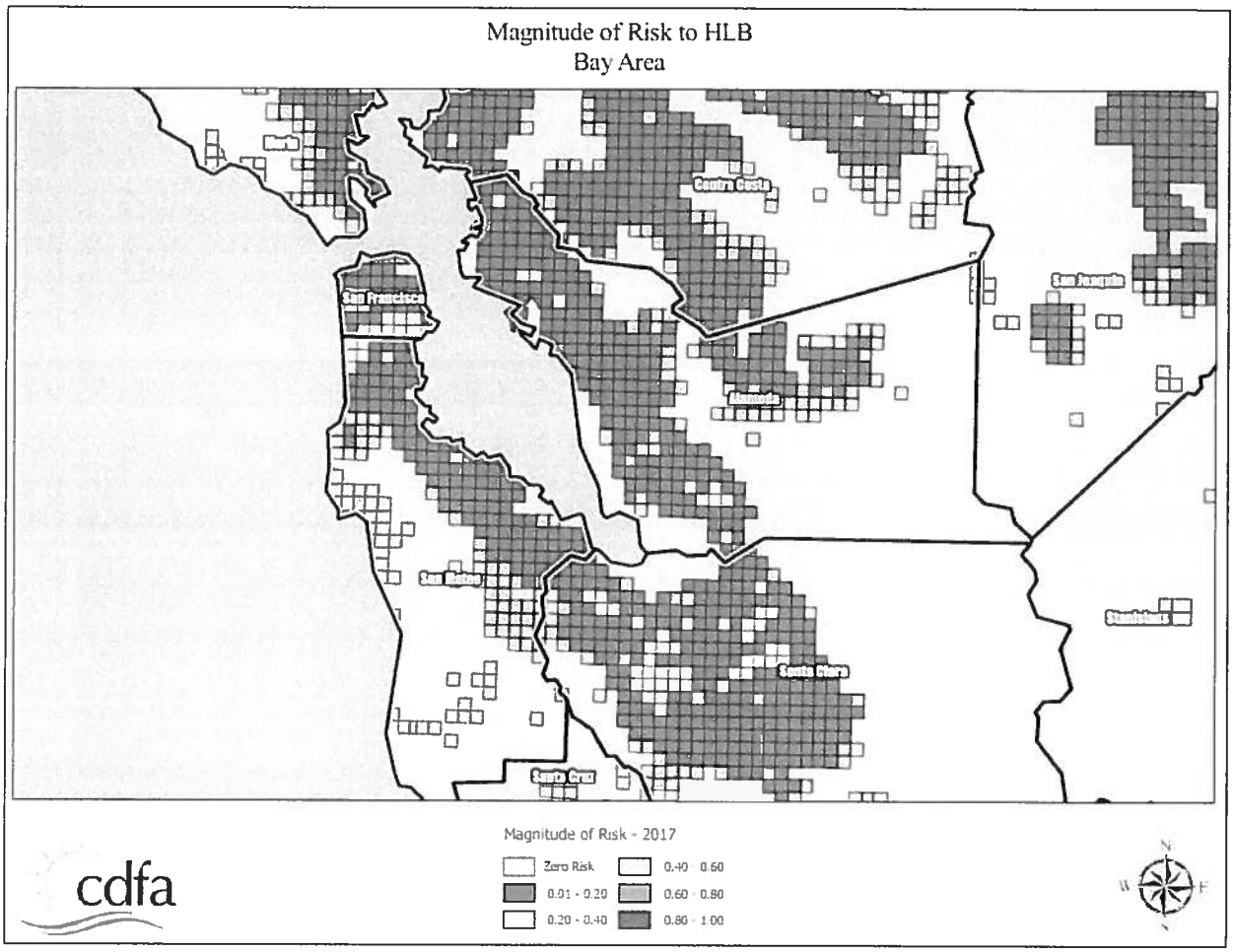


Figure 2. Individual square mile HLB risk levels for the San Francisco Bay Area. Note that the general risk level is low, but there are pockets of moderately high risk in San Francisco itself, and more noticeably in San Jose, associated with population census risk factors; ACP detections in this area is still low and sporadic.

While the background risk of HLB is strongly dependent on factors which are either static (e.g. topography) or change only slowly (e.g. human socio-economic factors) the presence of the ACP vector of the pathogen introduces a large dynamic component into the risk level across the state. To illustrate the impact of the vector population on changing risk status for HLB Figure 3 shows changes in HLB risk for the proposed quarantine areas 5 (San Diego, Imperial and Eastern Riverside) and 6 (LA. Western Riverside, San Bernardino and Orange). The risk level is shown as a blue-to-red heat map with higher risk indicated by darker red color and lower risk indicated by darker blue color; a time series of six periods is shown for each area.

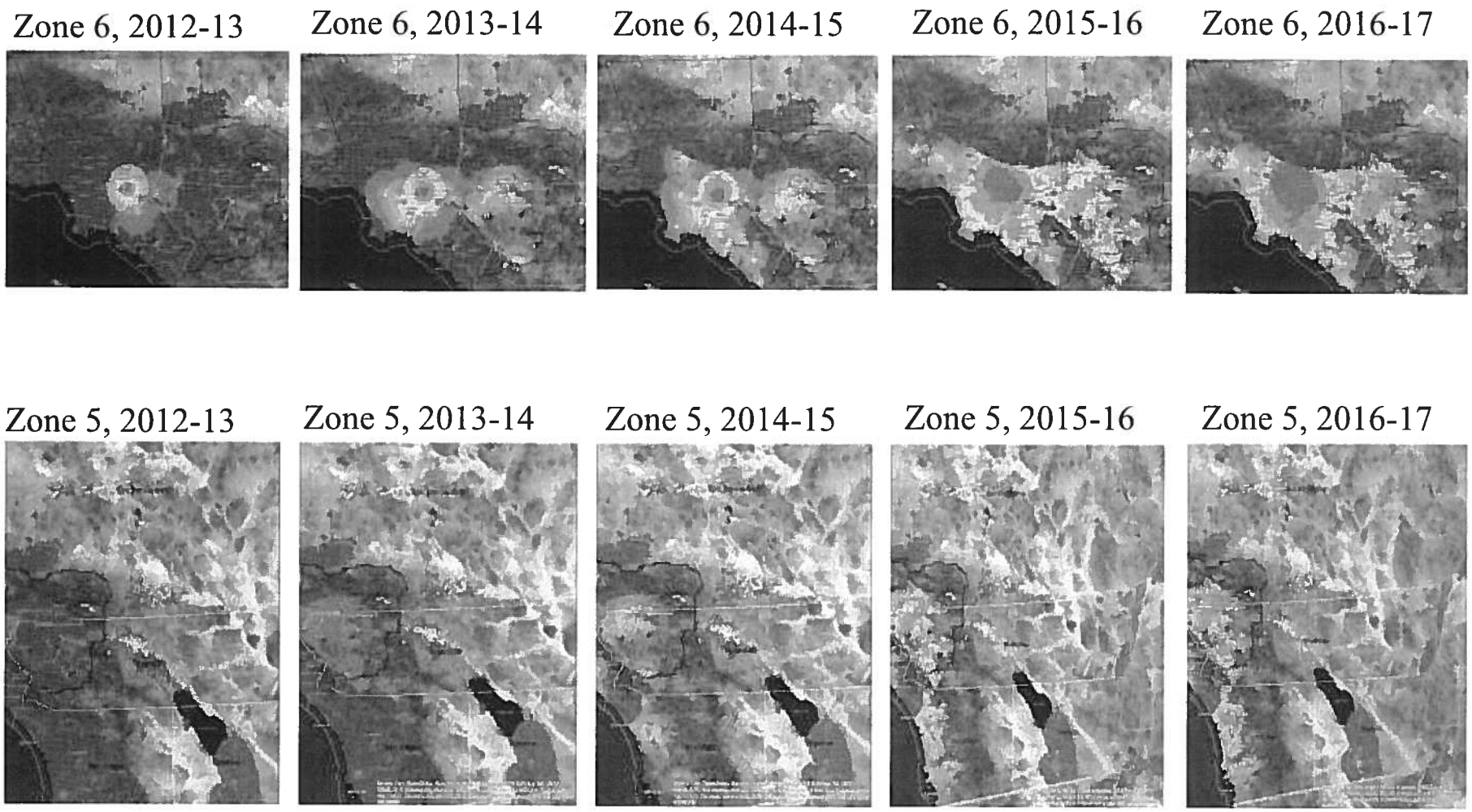


Figure 3. Changes in background risk of HLB in proposed quarantine areas 5 and 6 from 2012 to present. Red color indicates high risk, blue indicates low risk. Note that the location of the early HLB detections in Hacienda Heights and San Gabriel falls inside the single high-risk area predicted in 2012. The progressive increase in risk in both areas is apparent with the passage of time. All known cases of HLB are in proposed Quarantine Area 6.

Figure 3 tells us at least two useful things about HLB risk. First, note that in 2012-13 the only area of predicted high risk was centered on Hacienda Heights and San Gabriel, the locations of the first HLB discoveries in California; in other words, the risk model correctly anticipated the presence of HLB. Also note that the model also highlighted the focus of high risk in the city of Riverside as early as 2013-14; this outbreak emerged in 2017. These results are important for interpreting the presence of areas of elevated risk in places such as San Jose. Second, the pattern of change in risk in both areas 5 and 6 is a steady increase, spreading out from the original high risk area in LA, but also with additional foci developing at locations quite distant from the original focus. These changes are associated mainly with the spread of ACP through the region and the patterns of population density of the insect recorded in the risk-based surveys.

Taken together the results presented in this section highlight two important aspects of HLB risk that are relevant to quarantine regulations:

1. Because HLB-affected citrus plant material can be propagated and spread by human activity, the risk of HLB and ACP are to some extent independent, particularly in areas that are not generally infested with ACP.
2. **The risk of HLB can exist before the arrival of the vector** in an area because HLB-affected plant material is often brought to an area by human activities.

After ACP infests an area with pre-existing infected trees present, the vector population eventually comes into contact with the infected trees and foci of disease begin to build around them. This is because ACP acquires the pathogen from the infected trees and establishes a recurring cycle of infection and acquisition. Because trees remain asymptomatic for a long period of time, spread in the absence of detection and tree removal can occur.

Reducing disease spread by quarantines

The basic principle of underlying the use of quarantines is to restrict the spread of disease by sub-dividing an area into smaller regions and limiting the opportunities for disease to spread from one region to another. In the case of invasive and highly mobile diseases, quarantines should be applied early and rigorously to have the largest effect on disease spread. Importantly, quarantines do not have to be 100% effective to be worth imposing. If the incursion of the disease into generally uninfected areas can be limited to a low rate, and psyllid populations can be kept low, local eradications can be achieved when new incursions are detected.

The basic idea of setting up quarantine regions within the state is an ecological analogue of the idea of constructing a ship using multiple watertight compartments; even if one compartment is flooded, as long as the flow of water is negligible to the other compartments the ship won't sink. In instituting a quarantine policy, the aim is to limit the flow of vectors and disease throughout the state and thus safeguard the industry and homeowners as a whole.

Recent changes in the dynamics of HLB/ACP detections

Until recently, the rate of accumulation of new positive ACP and tree detections had been relatively stable. Over the last 6 months there has been a dramatic increase in the rate of new detections of HLB infections in both ACP and citrus trees. In addition, there has been a recent increase in the number of cities in which positive finds have been reported and a sharp increase in the number of ACP nymph detections. These results are summarized in Figures 4 through 7.

Taken together the results indicate an exponential increase in the intensity of the HLB epidemic at multiple scales. The pathogen is becoming more prevalent in the vector population and in the tree population. At the same time, the upswing in nymphal detections indicates that the transmission rate is increasing and the increase in the number of cities with positive detections indicates that the geographic extent of the epidemic is increasing rapidly.

Most of these changes have become apparent only in the last 6 months. Given the very sharp increase in the intensity of the epidemic, a rapid response is needed to implement additional measures to slow the rate of spread of HLB beyond its current range before the opportunity is lost.

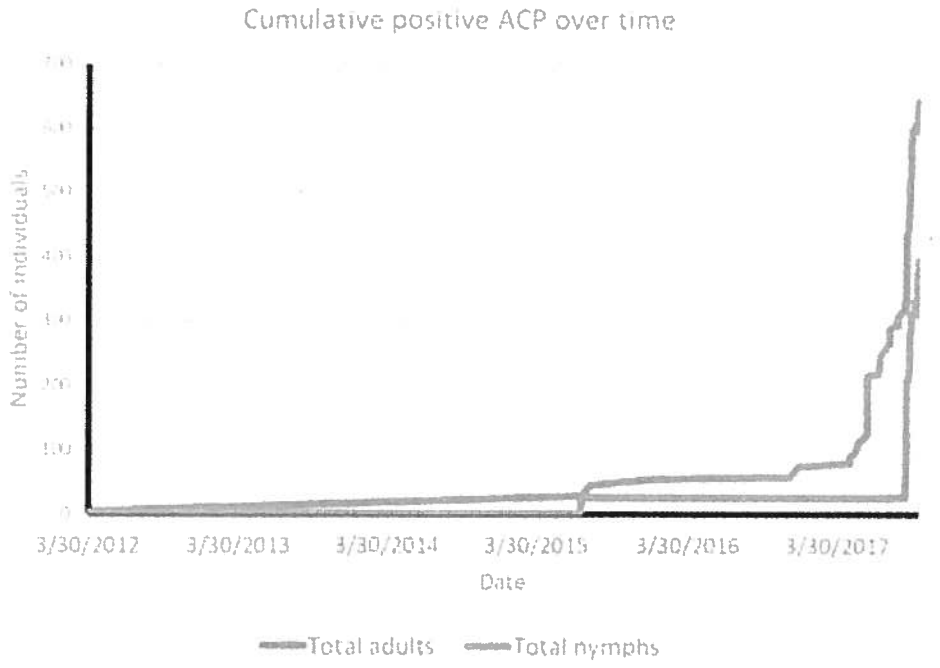


Figure 4: Cumulative counts of PCR-positive ACP samples collected in California over time since 2012. Note the sharp increase in the rate of accumulation from mid-2017 onwards.

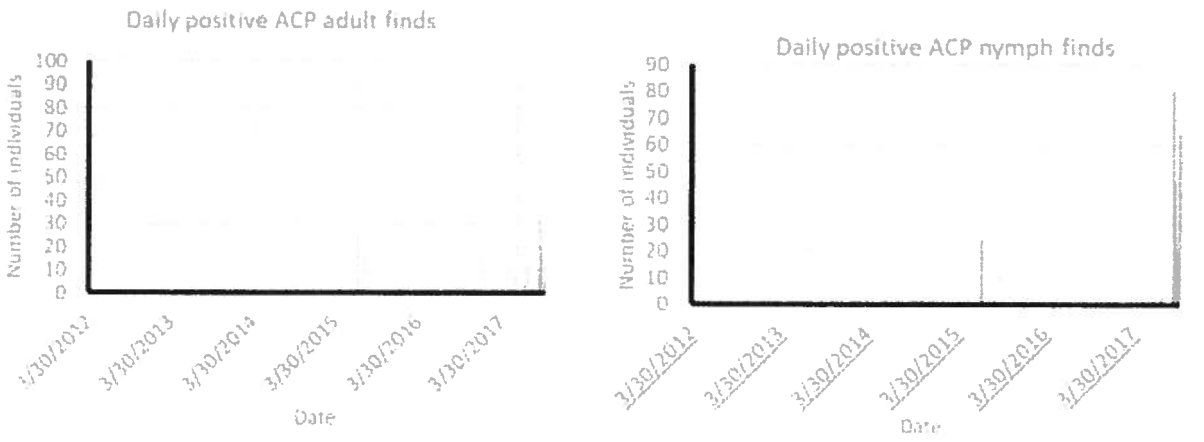


Figure 5: Daily discovery rate for PCR-positive ACP (adults and nymphs are shown separately). Note the sharp increase in finds toward the end of 2017, particularly for nymphs which had largely been absent from positive samples until recent detections.

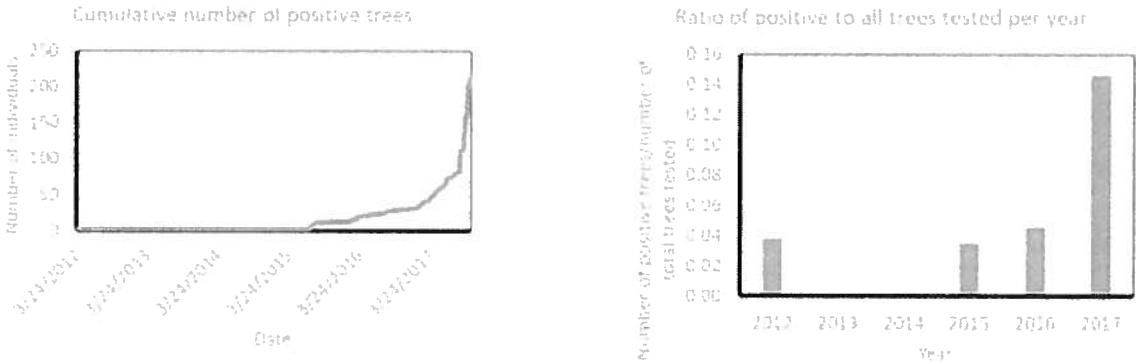


Figure 6: PCR-positive tree detections over time. In the left panel the cumulative number of detections is shown, highlighting the exponential increase in 2017. In the right panel the ratio of positive trees to all trees tested per year is shown. Note that until 2017 the ratio had been more or less stable at approximately 5%, but has nearly tripled in 2017 to just under 15%.

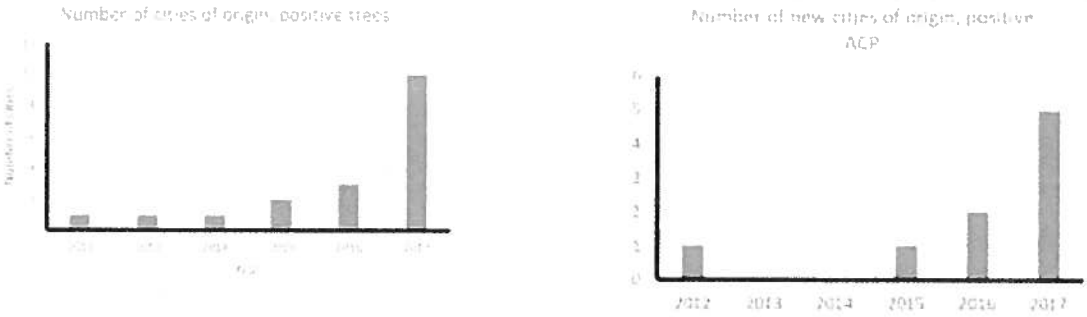


Figure 7: Numbers of citites with PCR-positive ACP detections over time. The left panel shows the cumulative figure, the right panel shows the number of new cities per year. Mirroring the results for trees and for ACP, note the sharp increase in 2017. These results indicate that the epidemic is intensifying across several spatial scales at a very high rate.

Changes in diagnostic results on tested Asian Citrus Psyllids

The previous section detailed the recent sharp increases in PCR detections for ACP and trees. These increases indicate that the pathogen population is growing and this can be seen directly by considering the Ct values in qPCR tests. Results highlighting the increase in the pathogen population are shown here in Figures 8 and 9.

Figure 8 shows the data for qPCR Ct values obtained from psyllid samples collected in different sampling cycles of the survey program. The data are sub-divided into samples obtained from inside and outside the existing HLB quarantine areas. It can be seen that the Ct values obtained from ACP samples inside the quarantine areas are showing a much faster increase in the proportion of low values (CT <32 to 33), indicating an intensification of the pathogen population in the vector population.

The presence of some ACP with low qPCR Ct values outside the existing quarantine areas highlights the risk of ACP moving the disease around and the need for quarantine regulations that apply at a larger scale than the current radius around confirmed HLB-positive trees.

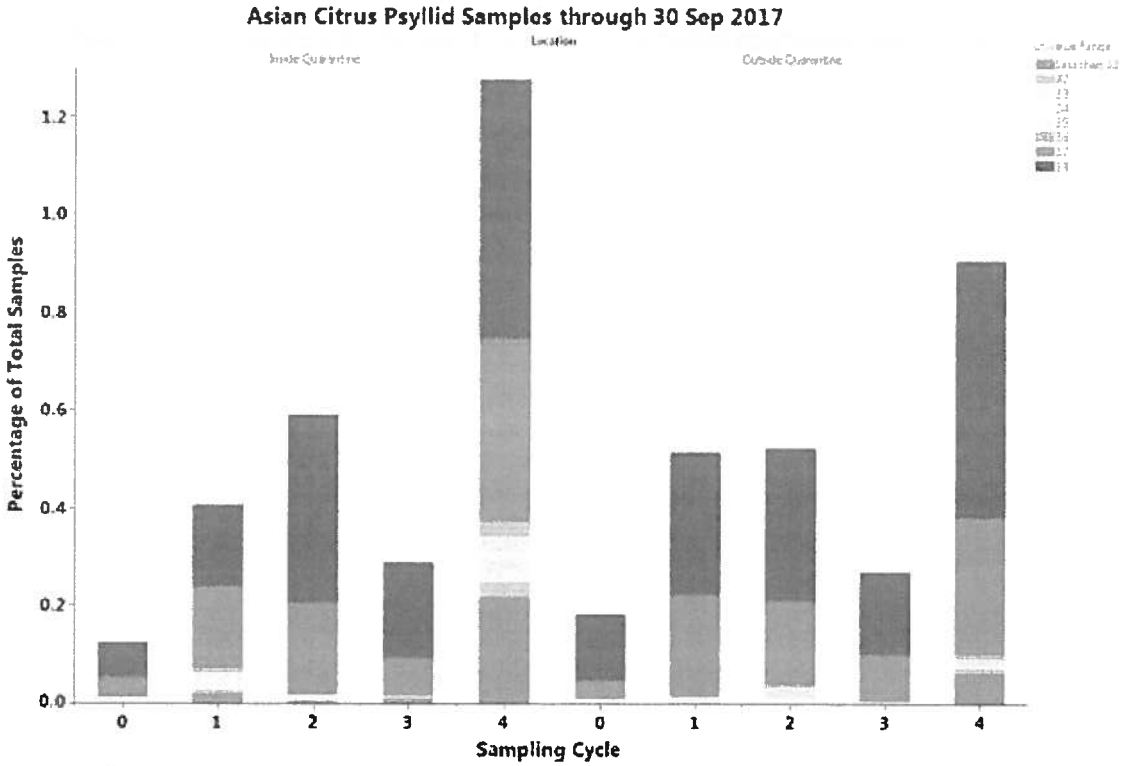


Figure 8: qPCR test results on ACP samples tested by CDFA through 30 September 2017. Note that the proportion of light blue and red (indicating presence of the HLB pathogen) in the samples from inside the quarantine areas (left panel) has increased over time, whereas no corresponding change is apparent in samples outside the quarantine areas (right panel).

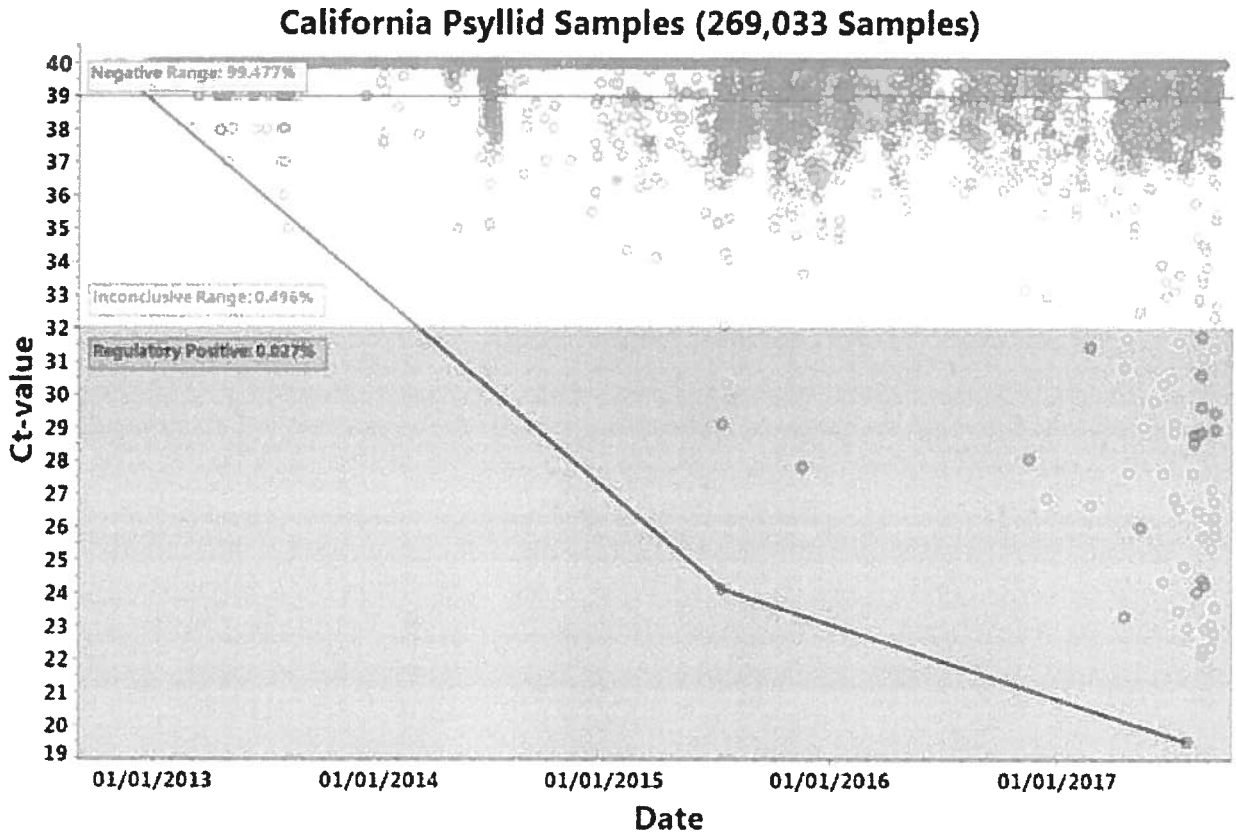


Figure 9: qPCR regulatory results recorded since the detection of HLB in California over time compared to the concentration of the pathogen in the sample (Ct < 32.1= HLB positive (red zone), Ct 32.1-38.9 = suspect (yellow zone), Ct > 38.9=HLB not detected (green zone)). The lower the Ct value, the higher the concentration of the HLB bacterium. Note the trend towards lower Ct values over time and the increase in numbers of HLB positive psyllids starting in 2015 and continuing through 2017 indicating that the titre (concentration) of HLB DNA in the psyllids is increasing.

Implications of changes in the dynamics and recommendations

To summarize the recent changes in the dynamics of HLB/ACP detections in trees and psyllids:

1. The number of HLB positive citrus trees detected has increased exponentially in the last 4 months as compared to the previous 6 years.
2. The number of HLB positive and infectious Asian citrus psyllids has increased exponentially in the last four months as compared to the previous 6 years.
3. These HLB infectious psyllids are spreading to new communities in the LA basin at a significantly escalated rate compared to the previous 6 years.
4. These infectious psyllids can be spread by movement of ACP-host nursery stock, bulk citrus, and other possible carriers of ACP.

Given the above developments in the California HLB epidemic it is of the utmost urgency to further compartmentalize the state using quarantine zones defined by HLB risk to commercial citrus (rather than 5 mile and county wide quarantines). This will help to reduce the potential for spread of HLB to zones where HLB has not been detected in citrus trees, nor has Asian citrus psyllid become established in some cases. The proposal to divide the state into 7 zones for bulk citrus movement and three zones for nursery stock, will serve to restrict the dispersal of HLB and its ACP vectors. Currently all known HLB infected trees are inside a single quarantine zone – zone 6. However, with the exponential escalation of the number of infected ACP and citrus trees requires an immediate regulatory response to restrict spread before the opportunity for such measures to be effective is lost.

WEEKLY MEMO 9-26-19

SOCIAL MEDIA HIGHLIGHTS

Sent Messages

Review the lifetime performance of the messages you sent during the publishing period.

Profile	Message by Sent Date ▼	Impressions	Average Reach per Message	Engagement Rate (per Impression)	Engagements	Reactions	Comments	Shares	Message Clicks
	 One of the most anticipated grand openings in **#GardenGrove** history is her **Post. Wed 9/25/2019 4:57 pm PDT**	3,588	2,623	15.6%	561	72	25	19	445
	 **Post. Wed 9/25/2019 3:49 pm PDT**	-	-	-	-	-	-	-	-
	 Did you know that September 23 through September 30 is Child Passenger Safety **Post. Mon 9/23/2019 4:53 pm PDT**	555	341	1.3%	7	0	0	0	7
	 The Orange County Mosquito and Vector Control District continues to treat areas in **Post. Mon 9/23/2019 2:10 pm PDT**	8,205	5,628	13.3%	1,090	35	33	16	1,006
	 Garden Grove Police Department will be conducting a **#DUICheckpoint** this **Post. Thu 9/19/2019 3:03 pm PDT**	3,620	2,609	7.5%	270	47	8	18	197

Sent Messages

Review the lifetime performance of the messages you sent during the publishing period.

Profile	Message by Sent Date	Impressions	Average Reach per Message	Engagement Rate (per Impression)	Engagements	Reactions	Comments	Shares	Message Clicks
	 There's still time... to register your child for the Tiny Tots Program! The Post. Thu 9/19/2019 11:17 am PDT	4,142	2,559	5.8%	241	18	0	3	220

Sent Messages

Review the lifetime performance of the messages you sent during the publishing period.

Profile	Message by Sent Date ▼	Impressions	Average Reach per Message	Engagement Rate (per Impression)	Engagements	Reactions	Comments	Shares	Message Clicks
	 Please join us for the National **#CoffeeWithACop** Event on Wednesday, October 2nd, 6	2,019	1,442	3.2%	64	19	2	2	41
	Post. Wed 9/25/2019 12:00 pm PDT								
	 September is California **#PedestrianSafety** Month. Here are some safety tips for	3,510	2,570	3.8%	134	41	4	9	80
	Post. Tue 9/24/2019 12:32 pm PDT								
	 Over the weekend, **#GardenGrovePD** conducted a **#DUICheckpoint** to help rais	13,244	7,963	13.3%	1,762	265	66	15	1,416
	Post. Mon 9/23/2019 3:00 pm PDT								

Sent Messages

Review the lifetime performance of the messages you sent during the publishing period.

Profile	Message by Sent Date ▼	Potential Reach	Responses	Clicks	Organic Impressions	Likes	Retweets	Replies
	 One of the most anticipated grand openings in **#GardenGrove** history is her **Tweet. Wed 9/25/2019 5:01 pm PDT**	5,671	3	0	910	11	1	2
	 Did you know that September 23-September 30 is Child Passenger Safety Awareness **Tweet. Mon 9/23/2019 5:18 pm PDT**	3,196	0	0	1,128	0	0	0
	 **@OCVector** continues to treat areas in North OC where high levels of West Nile Virus acti **Tweet. Mon 9/23/2019 2:32 pm PDT**	0	0	1	103	1	0	0
	 **@GardenGrovePD** will be conducting a **#DUICheckpoint** this Saturday, September 21s **Tweet. Thu 9/19/2019 3:04 pm PDT**	0	1	0	189	2	1	0
	 There's still time... to register your child for the Tiny Tots Program! The **Tweet. Thu 9/19/2019 11:20 am PDT**	3,196	0	0	2,349	3	0	0

WEEKLY MEMO 9-26-19

NEWS ARTICLES

OC Register
September 26, 2019

ONSTAGE

Musical 'Bright Star' will rise at the Gem Theater

The Gem Theater is staging the musical "Bright Star" through Oct.20.

Set in the American South, the musical tells a story of love and war during the 1920s and '40s.

Written by Orange County native and Grammy, Emmy and Academy Award winner Steve Martin and Grammy winner Edie Brickell, "Bright Star" features music from a seven-piece band.

General admission costs $30, with discounts for seniors, students and children under age 12. Tickets for the opening night gala Saturday are $45 — attendees can have champagne with the cast.

— Hanh Truong

IF YOU GO

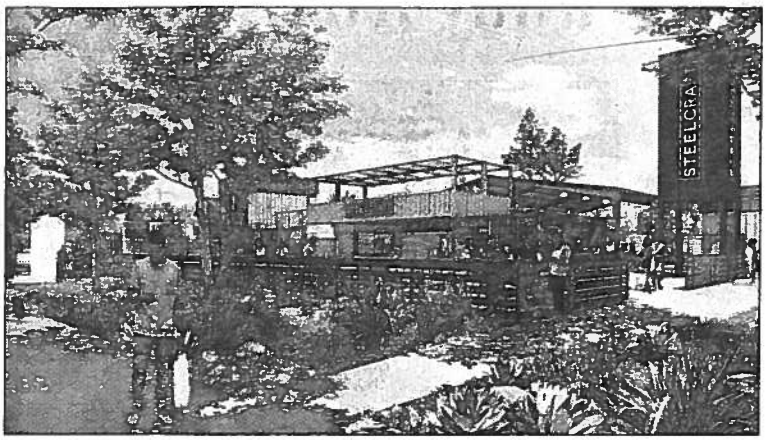
When: Through Oct. 20; 8 p.m. Thursdays-Saturdays, 2 p.m. Sundays and 2 p.m. Oct. 5 and Oct. 12

Where: Gem Theater, 12852 Main St., Garden Grove

Information and tickets: onemoreproductions.com

OC Register
September 22, 2019

RESTAURANTS



A rendering of SteelCraft Garden Grove. SteelCraft is an outdoor, urban eatery made from shipping containers with multiple restaurant choices. It's set to open Thursday.

STAFF FILE PHOTO

SteelCraft Garden Grove, a food hall built out of shipping containers, set to open

By Anne Valdespino
avaldespino@scng.com

Development partners Howard CDM and SteelCraft have announced that SteelCraft Garden Grove will open Thursday.

The unconventional food hall will include a vintage video arcade and retailers and restaurants offering food and merchandise from 22 cargo containers as long as 40 feet on a 1.8-acre lot behind City Hall. SteelCraft's Long Beach location celebrated its second anniversary in February, the Bellflower branch opened in June.

STEELCRAFT GARDEN GROVE

Find it: 12900 S. Euclid St., Garden Grove, steelcraftlb.com

Open: 5 p.m. Thursday for the grand opening. Regular hours: 6 a.m.-9 p.m. Sunday-Thursday and 6 a.m.-10 p.m. Friday-Saturday. Individual vendor hours vary.

These food and beverage spots are slated to go in: Beachwood Brewing Co., Dark Horse Coffee Roasters, Renegade Taco, The Chick 'n' Shack: Khao Man Gai, The Nest: A Breakfast Joint, Honey & Butter Macarons, Baf-.rio: Modern Filipino BBQ, Cauldron Ice Cream and The Penalty Box, a burger concept by hockey Hall of Famer Teemu Selanne and business partner Kevin Pratt of Selanne Steak Tavern.

'Bright Star' set to show at GG theatre

Steve Martin and Edi Brickell's award winning show is in town this week

OC News
September 25, 2019

By Angela Hatcher

One More Productions is bringing the Grammy, Emmy, and Academy-Award winning Steve Martin and Edie Brickell's musical, "Bright Star," to its stage for a limited engagement, and this Broadway hit is bound to brighten up your new fall season light like a mid-summer's end to an electric light parade.

... this Broadway hit is bound to brighten up your new fall season light like a mid-summer's end to an electric light parade.

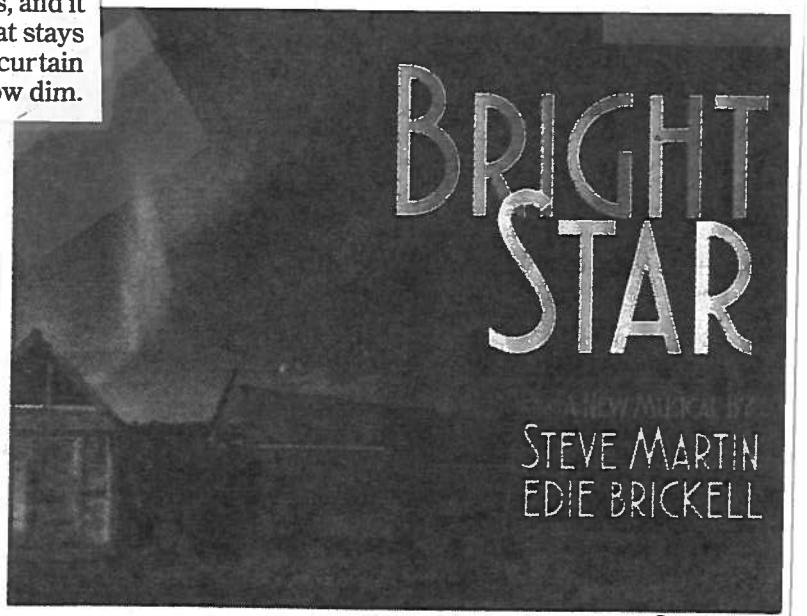
Bright Star's musical score will have you hand slappin' and foot stompin' one minute but also grooving to the gentle sounds of the breezy Bluegrass Appalachian Mountain music the next.

Featuring an ensemble of onstage musicians and dancers, the story unfolds as literary editor Alice Murphy meets a young soldier just home from WWII, and he awakens her longing for the child she once lost.

Haunted by their unique connection, Alice sets out on a journey to understand her past – and what she finds has the power to transform both their lives.

OMP's multi-talented and award-winning co-owners and producers, Damien Lorton and Nicole Cassesso, strive to make each production unique, family friendly, and affordable, while they are also dedicated to bringing some of the finest and most talented individuals to their stage.

Their latest production, Bright Star, checks all the boxes, and it is one of those shows that stays with you long after the curtain closes and the lights grow dim.



Courtesy art

"Bright Star"
The Gem Theatre
12852 Main St., Garden Grove

Call 714-741-9550, ext. 221.
Runs Sept. 26 through Oct. 20

**CITY OF GARDEN GROVE
NOTICE INVITING SEALED BIDS
PROJECT NO. 7839**

Notice is hereby given that sealed bids to furnish material, equipment and labor for Project No. 7839

"SEWER SYSTEM REHABILITATION PLAN PHASE 1, SEWER MAIN LINING AND SPOT REPAIR PROJECTS 1 & 2", will be received at the City Clerk's Office, 11222 Acacia Parkway, Garden Grove, CA 92840. Engineer's estimate for this project is around $1,582,159 dollars.

The Sewer System Rehabilitation Plan Phase I, Sewer Main Lining and Spot Repair Projects 1 & 2, consists of rehabilitation of approximately 17,430 LF of 8-inch diameter sanitary sewer gravity piping, and 60 LF of 6-inch diameter sanitary sewer gravity piping by UV-cured glass reinforced plastic cured-in-place pipe (GRP-CIPP) liner; rehabilitation of 270 LF of 8-inch diameter sanitary sewer gravity piping by steam-cured felt impregnated resin CIPP liner; 9 spot repairs; 420 sewer lateral reinstatements, and 69 top hat sewer lateral seals in various streets in Garden Grove as outlined in the contract documents.

The entire project will also require maintaining the existing sewer flows during construction, prepare traffic control plans, temporary traffic control, resident and business notifications, construction information signs, pavement replacement, resurfacing and all other appurtenant work per the contract documents. This project is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968. The project will be constructed in three phases.

The plans, specifications, and contract documents may be purchased from ARC for the price of one hundred and twenty-one dollars and fifty-four cents ($121.54). The price includes sales tax but does not include shipping if needed. The documents may be made available for "will call" or shipped directly to you. Please contact:

ARC
345 Clinton Street
Costa Mesa, CA 92626
www.ocbinc.com
949-660-1150 (ask for the Planwell Department)
Or you can e-mail your order to costamesa.planwell@e-arc.com

Bids are due in the City Clerk's Office at 11:00 a.m. on Wednesday, October 23, 2019, and will be opened in the Engineering Conference Room 1-South, first floor, in City Hall.

Direct ANY and ALL questions to Jessica Polidori, Associate Engineer, (714) 741-5349.

/s/ TERESA POMEROY, CMC
City Clerk

Date: September 23, 2019
Publish: September 25, 2019 and October 2, 2019 - 87481

**LEGAL NOTICE
NOTICE OF PUBLIC HEARING**

NOTICE IS HEREBY GIVEN THAT THE GARDEN GROVE CITY COUNCIL WILL HOLD A PUBLIC HEARING AT THE COMMUNITY MEETING CENTER, 11300 STANFORD AVENUE, GARDEN GROVE, CALIFORNIA, ON TUESDAY, October 8, 2019 AT 6:30 P.M., OR AS SOON THEREAFTER AS IT MAY BE HEARD, TO RECEIVE AND CONSIDER ALL EVIDENCE AND REPORTS RELATIVE TO THE MATTER(S) DESCRIBED BELOW:

AMENDMENT NO. A-025-2019

PROJECT DESCRIPTION: A request by the City of Garden Grove to amend Section 9.04.060 of the Garden Grove Municipal Code to add definitions for terms used in existing portions of Title 9 pertaining to the Flood Hazard Overlay Zone to meet minimum requirements of the National Flood Insurance Program.

PROJECT LOCATION: Citywide

ZONE: Not applicable

On September 5, 2019, by a 5-0 vote with one Commissioner recused and one position vacant, the City of Garden Grove Planning Commission recommended approval of Amendment No. A-025-2019 to City Council, pursuant to Resolution No. 5964-19.

ALL INTERESTED PARTIES are invited to attend the City Council public hearing, or write a letter, to express opinions or submit evidence for or against the project as outlined above. If you challenge the project in Court, you may be limited to raising only those issues raised at the public hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, the public hearing. Written correspondence received before 3:00 p.m. on the Monday before the hearing will be given to the City Council prior to the meeting. Information received after that time will be given to the City Council at the time of the meeting. Further information on the above matter may be obtained from the Planning Services Division, Community and Economic Development Department, City Hall, 11222 Acacia Parkway, Garden Grove, or by telephone at (714) 741-5312.

/s/ TERESA POMEROY, CMC
City Clerk
Date: September 20, 2019
Publish: September 25, 2019
Orange County News - 87427

MISCELLANEOUS ITEMS

September 26, 2019

1. Calendar of Events

2. Agenda for the October 3, 2019 Planning Commission meeting.

3. League of California Cities, "CA Cities Advocate," from September 20, 2019 to September 26, 2019.

GARDEN GROVE

CALENDAR OF EVENTS

September 26, 2019 – October 17, 2019

Thursday	September 26	9:00 a.m.	Zoning Administrator Meeting, City Hall 3rd Floor Training Room ***CANCELLED***
		5:00 p.m.	Family Movie Night, "Spider-man Into the Spider-verse" Buena Clinton Youth & Family Center
Thursday Sunday	September 26- October 20		One More Productions presents "Bright Star," The Gem Theatre
Friday	September 27	City Hall Closed	Regular Friday Closure
Thursday	October 3	7:00 p.m.	Planning Commission Meeting, Council Chamber
Monday	October 7	6:30 p.m.	Neighborhood Improvement and Conservation Commission Special Meeting, Council Chamber
Tuesday	October 8	5:30 p.m. 6:30 p.m.	Closed Session, Founders Room Housing Authority Meeting, Council Chamber Sanitary District Board Meeting, Council Chamber Successor Agency Meeting, Council Chamber City Council Meeting, Council Chamber
Thursday	October 10	9:00 a.m.	Zoning Administrator Meeting City Hall 3rd Floor Training Room
		6:00 p.m.	Parks, Recreation and Arts Commission Meeting Council Chamber
			$2 Casual Dress Day
Friday	October 11	City Hall Closed	Regular Friday Closure
Saturday	October 12	10:00 a.m. -1:00 p.m.	OCFA Open House at Fire Station 81 11301 Acacia Parkway
Thursday	October 17	7:00 p.m.	Planning Commission Meeting, Council Chamber

GARDEN GROVE

AGENDA

GARDEN GROVE PLANNING COMMISSION

REGULAR MEETING

OCTOBER 3, 2019

COMMUNITY MEETING CENTER
11300 STANFORD AVENUE

REGULAR SESSION – 7:00 P.M. – COUNCIL CHAMBER

ROLL CALL: CHAIR LEHMAN, VICE CHAIR RAMIREZ
COMMISSIONERS LE, NGUYEN, PEREZ, SOEFFNER

Members of the public desiring to speak on any item of public interest, including any item on the agenda except public hearings, must do so during Oral Communications at the beginning of the meeting. Each speaker shall fill out a card stating name and address, to be presented to the Recording Secretary, and shall be limited to five (5) minutes. Members of the public wishing to address public hearing items shall do so at the time of the public hearing.

Any person requiring auxiliary aids and services due to a disability should contact the City Clerk's office at (714) 741-5035 to arrange for special accommodations. (Government Code §5494.3.2).

All revised or additional documents and writings related to any items on the agenda, which are distributed to all or a majority of the Planning Commissioners within 72 hours of a meeting, shall be available for public inspection (1) at the Planning Services Division during normal business hours; and (2) at the City Community Meeting Center Council Chamber at the time of the meeting.

Agenda item descriptions are intended to give a brief, general description of the item to advise the public of the item's general nature. The Planning Commission may take legislative action it deems appropriate with respect to the item and is not limited to the recommended action indicated in staff reports or the agenda.

PLEDGE OF ALLEGIANCE TO THE FLAG OF THE UNITED STATES OF AMERICA

A. ORAL COMMUNICATIONS - PUBLIC

B. APPROVAL OF MINUTES: September 5, 2019

C. PUBLIC HEARING(S) (Authorization for the Chair to execute Resolution shall be included in the motion.)

C.1. SITE PLAN NO. SP-075-2019
VARIANCE NO. V-025-2019

APPLICANT: AN HA
LOCATION: SOUTH OF IMPERIAL AVENUE, BETWEEN HOPE STREET AND DEANANN PLACE AT 10182 IMPERIAL AVENUE

REQUEST: Site Plan approval to construct two (2) detached, two-story, multiple-family residential units with an attached two (2) car enclosed garage on an 8,837 square foot lot. Each unit will have a total living area of 2,067 square feet and 2,195 square feet. As part of this project, a five-foot public right-of-way street dedication is required, which will reduce the lot size to 8,485 square feet. Also, a Variance request to allow the project to deviate from the minimum 8,712 square foot lot size of the R-2 (Limited Multiple Residential) zone. The existing single-family home will be demolished to accommodate the proposed development.

STAFF RECOMMENDATION: Approval of Site Plan No. SP-075-2019 and Variance No. V-025-2019. In conjunction with the request, the Planning Commission will consider a determination that the project is categorically exempt from the California Environmental Quality act (CEQA) pursuant to Section 15303 – New Construction or Conversion of Small Structures.

D. ITEM(S) FOR CONSIDERATION (Not a Public Hearing)

D.1. AMENDMENT OF RESOLUTION NO. 5944-19 PERTAINING TO SITE PLAN NO. SP-062-2019 AND LOT LINE ADJUSTMENT NO. LLA-020-2019

APPLICANT: DAVID NGUYEN
LOCATION: SOUTH SIDE OF GARDEN GROVE BOULEVARD, EAST OF COAST STREET, AT 8218 AND 8242 GARDEN GROVE BOULEVARD

REQUEST: For the Planning Commission to consider and adopt a proposed Resolution amending Resolution No. 5944-19, adopted by the Planning Commission on February 7, 2019, pertaining to Site Plan No. SP-062-2019 and Lot Line Adjustment No. LLA-020-2019, to accurately describe the density bonus concessions approved as part of Site Plan No. SP-062-2019 in order to correct the administrative record.

STAFF RECOMMENDATION: Adopt the proposed Resolution amending Resolution No. 5944-19 pertaining to Site Plan No. SP-062-2019 and Lot Line Adjustment LLA-020-2019.

E. MATTERS FROM COMMISSIONERS

F. MATTERS FROM STAFF

G. ADJOURNMENT

League-Sponsored Bond Agency Issues Approximately $45 Million in Tax-Exempt Bonds for Community Hospital of the Monterey Peninsula in Monterey

September 23, 2019

The League's co-sponsorship of the California Statewide Communities Development Authority (CSCDA) continues to be a significant benefit for League members.

CSCDA announced the issuance of $45 million in tax-exempt bonds for Community Hospital of the Monterey Peninsula in Monterey.

About Community Hospital of the Monterey Peninsula (CHOMP)

CHOMP, a California nonprofit public benefit corporation, owns and operates the acute care hospital with 258 licensed hospital beds, located in the Carmel Hill area of the Monterey Peninsula. CHOMP also owns and operates Westland House, a 28-bed skilled nursing and hospice facility, and an outpatient hospice facility located in Monterey. In addition, CHOMP provides outpatient healthcare services at various outpatient facilities throughout Monterey County. CHOMP delivers acute care services in the communities of Seaside, Monterey, Carmel Valley, Pacific Grove, Marina, Pebble Beach, Sand City, Del Rey Oaks, Big Sur, and unincorporated areas of Monterey County located on the peninsula.

CSCDA partnered with Piper Jaffray and Bank of America Public Capital Group to issue the $45 million in tax-exempt bonds for CHOMP. The bonds will be used to finance a variety of capital projects including the following:

- Purchase of a robot and other equipment upgrades to its hybrid OR/catheterization unit.
- Construction and equipping of a new breast care center.
- Renovation of multiple urgent care centers.
- Renovation of a patient bed wing in its main hospital.
- Equipping of a new PET/CT scanner and Emergency Department radiology equipment.

About CSCDA

Created by cities and counties for cities and counties, CSCDA is a joint powers authority created in 1988 and is sponsored by the League of California Cities and the California State Association of Counties. More than 530 cities, counties and special districts are program participants in CSCDA, which serves as their conduit issuer and provides access to efficiently finance locally-approved projects. CSCDA has issued more than $60 billion in tax exempt bonds for projects that provide a public benefit by creating jobs, affordable housing, healthcare, infrastructure, schools and other fundamental services.

Visit CSCDA's website for additional information on the ways in which CSCDA can help your city. For more information about La Clínica, please visit: www.laclinica.org.