

Nursery Advisory Board (NAB) Meeting
California Department of Food and Agriculture (CDFA)

2800 Gateway Oaks Rm. 101
Sacramento, CA 95833

Wednesday, March 1, 2017
10:00 a.m. – 2:00 p.m.

Voting Members

Michael Babineau
David Cox
Don Dillon
Bruce Jensen
Jay Jensen
Steve McShane
Scott Nicholson
Ernest J. Rodriguez
Daniel Waterhouse

Non-Voting Members

Joe Deviney
Lorence Oki
Karen Suslow
Chris Zanobini

CDFA & Guests

Vince Arellano
Kevin Hoffman
Dean Kelch
Joshua Kress
Phuong Lao
Roger Spencer
Cathy Vue
Kristina Weber

1. Call to Order and Roll Call

The meeting was called to order at 10:00 a.m. by Steve McShane, Board Chair.

2. Opening Remarks and Housekeeping

The Board welcomed new member, Bruce Jensen. An Oath of Office form was provided to him, and he signed and returned it to Erin Lovig.

3. Review of Minutes from September 14, 2016 and December 12, 2016 Board Meetings

Prior to the meeting, Amber Morris submitted the following corrections to the September 14, 2016 minutes regarding the Cannabis update: change “medical cannabis update” to “cannabis update”, change “early stages of developing” to “final stage of developing”, updated website address, and correct a few typographical errors. It was also noted that David Cox and Mike Babineau were listed as absent during votes when both were present.

Mike Babineau moved to approve the Minutes for the September 14, 2016 Board Meeting with the noted corrections. David Cox seconded. The Board voted as follows:

Yes: Michael Babineau, David Cox, Don Dillon, Bruce Jensen, Jay Jensen, Steve McShane, Scott Nicholson, Ernest J. Rodriguez, Daniel Waterhouse

No: None

Absent: Robert Crudup, Janet Silva Kister, Thomas Lucas

Motion carried.

David Cox moved to approve the Minutes for the December 12, 2016 Board Meeting as submitted. Don Dillon seconded. The Board voted as follows:

Yes: Michael Babineau, David Cox, Don Dillon, Bruce Jensen, Jay Jensen, Steve McShane, Scott Nicholson, Ernest J. Rodriguez, Daniel Waterhouse

No: None

Absent: Robert Crudup, Janet Silva Kister, Thomas Lucas

Motion carried.

4. Form 700 and Ethics Training

Board members were reminded that completion of the Form 700 is required for board members annually by April 1, and ethics training is required every two years. The CDFA Filing Officer sends notification e-mails to Board members with the required information, including a link to the required ethics training by the [Fair Political Practices Commission](#). Joshua Kress clarified that outside training can be used to complete this requirement, but the chosen training must meet the same statutory standard. Certificates of completion must be submitted to Erin Lovig.

5. New Pests of Concern in California

Insect Pests of Concern: (Attachment 1)

Kevin Hoffman, Program Manager with the Pest Detection/Emergency Projects Branch, presented updates on gypsy moth, Japanese beetle, exotic fruit flies, Asian citrus psyllid, European grapevine moth, and huanglongbing. He noted that in August 2016, European grapevine moth was declared eradicated from California. In addition, Hoffman presented information on the olive bark beetle, a new pest found in mature olive trees at three nurseries in Riverside County in October 2016. Olive bark beetle was proposed for a B-rating, and the public comment period was open. The Board further discussed public outreach, how pests are introduced into California, and the subsequent eradication/treatment efforts that follow detection of a pest.

Weed Pests of Concern: (Attachment 2)

Dean Kelch, Primary State Botanist, presented information on Santa Maria feverfew, Chilean cestrum, lantana, old man's beard, feathertop, English ivy, water hyacinth, and yellow flag iris. He discussed the use of [PlantRight's Plant Risk Evaluator \(PRE\)](#) tool, and the resulting scores that were being used by the California Invasive Plant Council (Cal-IPC) to evaluate plants that nurseries were considering growing. Kelch also reported on the process for determining additions to California Code of Regulations, Title 3, Section 4500: California's Noxious Weed Species List. The Board further discussed the role of PlantRight, and CAL-IPC's [Weed Mapper Tool](#).

Plant Diseases of Concern: (Attachment 3-5)

Joshua Kress presented information on boxwood blight, including symptom identification, which had recently been found in a residential area of San Mateo County. The disease had been previously found in multiple other states, but these finds were the first in California. Kress mentioned that Oregon has a voluntary certification program for boxwood blight for nurseries to help prevent exportation of infected material.

The Board discussed if there were plans for rating changes for the red imported fire ant and Diaprepes root weevil. Kress noted that Diaprepes root weevil was a B-rated pest, and that it was a concern to nurseries due to the long life span of larvae in the soil of nursery stock containers. The Board further discussed the status of the Diaprepes root weevil and the impacts of a rating change. It was noted that red imported fire ant was still regulated federally, and therefore it maintained an A-rating. Kress noted that any interested person could submit a request for a change in any pest rating via the following website: https://www.cdfa.ca.gov/plant/regs_pestrating.html

6. PD/GWSS Nursery Subcommittee and Program Update

Roger Spencer, Branch Chief of the Pierce's Disease Control Program (PCDP), provided updates on Pierce's disease (PD) and glass-winged sharp shooter (GWSS). An active infestation was found in Santa Clara County, which was the only reported active infestation in Northern California. As of 2016, there was not a find of GWSS in Santa Clara County. Previously, infestations were found in and eradicated from Butte County, Sacramento, and portions of Concord/Byron.

The PDCP administered two nursery shipping programs: the Nursery Regulation/Inspection Program and the Approved Treatment Program. The Nursery Regulation/Inspection Program had 35,879 shipments in 2016, which led to nine notifications of rejection (NOR). The previous year there were six. The Approved Treatment Program had 10,755 shipments in 2016, in which all plant

materials were treated with carbaryl or fenpropathrin. The treatment had shown 100 percent efficacy in past years for all life stages of GWSS. However, in 2016 one shipment of plants treated under the approved treatment protocol was rejected after an egg mass was detected and determined to be viable.

The expected federal funds for the PDCP for fiscal year 2017 were \$14 million, a decrease from the previous \$15.5 million, which would substantially limit the activities for the program. The Board further discussed the value of the program and the impacts of decreased funding.

7. State Interior Quarantines Update

Vince Arellano, Senior Environmental Scientist, reported the latest updates on quarantine for exotic fruit flies, Asian citrus psyllid (ACP), huanglongbing (HLB), and light brown apple moth (LBAM). For exotic fruit flies, Mediterranean fruit fly (Medfly) had a quarantine in the San Fernando Valley, near Arleta. Three male and 15 female adult Medflies were found, along with 111 larvae. The most recent detection was in January, which expanded the quarantine area to 127 square miles. Previously, plants would be held after fruit stripping until the end of the quarantine, upwards of nine months; this had been changed to a hold until the end of the insect's life cycle. Other actions could include voluntary destruction of the plants or a diazinon soil treatment (three-part treatments every two weeks). Non-host nursery stock could be placed on hold if comprised by overhanging fruit from host plants.

The ACP quarantine had expanded into Sacramento and Yolo County. The quarantine covered part of all of 29 counties, for a total of 62,514 square miles. The Pre-Quarantine Screen House Program was developed to permit a facility to continue shipping citrus nursery stock should it become included in the ACP quarantine.

The Board discussed the need for timely notification of quarantine expansion, and requested that citrus nurseries be notified electronically immediately of areas that would be impacted by new expansions of the quarantine.

The HLB quarantine experienced an expansion in San Gabriel. As a result of this expansion, 1,021 containerized nursery plants were destroyed. The updated quarantine consisted of 66 square miles in Los Angeles County and 29 square miles in Orange County, for a total of 95 square miles. The Board further discussed questions regarding how HLB may have been introduced into California.

LBAM had finds in San Diego, Ventura, and Santa Barbara counties. The Ventura County quarantine had expanded. The San Diego County quarantine had reduced in Oceanside after negative trapping for three life cycles. Due to drought, Santa Cruz County had experienced higher incidences of LBAM migration to wild areas in search of more abundant food. This could change with the rainfall increase, but the pests would most likely remain in the wild areas.

8. Nitrogen Management Plans

Lorence Oki reported that the Central Valley Regional Water Quality Control Board required nitrogen management plan reports (Attachment 6). The purpose of the plan was to restrict the movement of nitrogen into ground water. The form tracked how much nitrogen the nursery was producing and harvesting, and if it was not harvested, where the nitrogen escaped to. Unfortunately, nurseries had run into issues using the form to account for nitrogen losses in containers, losses due to nitrification, and losses in the reuse of water.

Oki was working with nursery owners, the Northern California Water Association, and the Central Valley Regional Water Quality Control Board to determine how nurseries could comply with the reporting requirement. Oki was also submitting a specialty crop grant proposal to study the atmospheric nitrogen being released from nursery beds and to measure the nitrogen in container media.

The Board further discussed who could certify these reports, the difficulties in filling out the forms, and what was being done in other water districts.

9. San Diego County Farm Bureau LBAM task force

The next meeting for the task force had been scheduled for March 23, 2017.

10. Systems Approach to Nursery Certification (SANC) Pilot Nursery Discussion

David Cox provided an update on the SANC Pilot Program. There were eight nurseries in the program, and the Pilot Subcommittee had approved the production manuals for six: Conard-Pyle (Pennsylvania), Forrest Keeling (Missouri), Greenleaf (Oklahoma), McKay Nursery (Wisconsin), Oregon Pride (Oregon), and Southeastern Growers (Georgia). The remaining two nurseries, Lucas Greenhouses and Walla Walla, were still developing their manuals. The eight selected nurseries consisted of two from each regional plant board. The subcommittee was looking to add eight additional nurseries from eight new states. A nursery in California was working with their county officials to participate in the program.

The Board further discussed the goals and benefits of the program.

11. Nursery Services Fiscal Update and Proposed Budget

Joshua Kress presented the Nursery Services Fiscal Update and Proposed Budget (Attachment 7). Kress noted an error for the Fiscal Year 2014/15 out-of-state travel, which showed an expenditure of \$1,172 that should have been allocated for 2015/16, and that the program was working with Financial Services to correct the error.

Since the previous meeting, the total expenditures for FY 2014/15 had decreased by \$2,760. For FY 2015/16, the total expenditures had increased by \$455. For FY 2016/17, the program projected total expenditures of \$8,717 less than the approved budget. For FY 2017/18, the final approved budget had increased by \$64 due to a decrease in the projected unclaimed gas tax reimbursement.

The program planned to work with grapevine and strawberry nurseries in order to address the previously presented projected deficits pertaining to those registration and certification programs.

12. Nursery Services Regulatory Update

Joshua Kress presented an update on changes to nursery regulations. For the Grapevine Registration and Certification Program, Section 3024.5 was updated to add *Grapevine red blotch-associated virus* as a regulated pathogen. This change was effective on October 1, 2016 and program staff had already begun testing for the virus.

Two other proposals had completed public comment and had been sent to the Office of Administrative Law for final review and incorporation into the regulations. Section 3061, regarding plant labeling, was being changed to match the language in authorizing statute. Section 3070 was a new proposed section to provide the list of nursery stock exempt from the IAB Assessment. Both changes were projected to be effective on April 1, 2017.

Throughout 2015, CDFA had worked with the Deciduous Fruit and Nut Tree (DFN) Registration and Certification Program participants to revise the program's regulations. The whole article had been revised, and was available for public comment until April 3, 2017. The revised regulations were projected to be effective on July 1, 2017. Following this, the program was looking to focus on updating the outdated Pome Fruit Tree Registration and Certification Program regulations. In addition, Strawberry Registration and Certification participants had requested revisions to the regulations in order to address discrepancies that could inhibit international shipping.

The program was also looking to revise nursery licensing regulations to address areas of the law that needed clarification. There had been a preliminary discussion with Ha Dang, San Diego County Agricultural Commissioner and chair of the CACASA Nursery, Seed, and Apiary Committee, and

it was suggested that a working group be developed. Erin Lovig would be the lead in developing the regulations and going through the rulemaking process.

Kress also noted that some minor changes were needed for the Citrus Nursery Stock Pest Cleanliness Program regulations. The Board further discussed the issues for retail nurseries selling citrus in HLB quarantine area and the risk of off-the-market citrus sales. Kress reported that scoping meetings had been held regarding changes to the ACP and HLB quarantine regulations, comments were being reviewed, and draft regulations were being developed, including a proposal for a regional statewide quarantine for ACP.

13. Legislative Update

Steve McShane presented information about [SB 335, Cannella. Nursery Advisory Board](#). This bill would legislatively establish the Nursery Advisory Board within the Department of Food and Agriculture to advise the Secretary of Food and Agriculture and make recommendations on all matters relating to nurseries and nursery stock. Currently the Nursery Advisory Board was an ad hoc group that served at the pleasure of the Secretary. The bill was introduced by Senator Cannella, and his office has requested letters of support from industry, such as CANGC.

Chris Zanobini and Karen Suslow reported on [SB 287, Dodd. Habitat restoration: invasive species: *Phytophthora Pathogens*](#), which stated any nursery stock that would be planted into wildlife restoration habitat would need to be free of *Phytophthora* pathogens. The bill was in the early stages of development and it was expected to change. The Board further discussed the feasibility of the bill, the role of the Department of Fish and Wildlife, and opportunities to engage with the author, Senator Dodd. Kress went over CDFA's general process for bills introduced that may affect the department or industry, which included a confidential bill analysis by the Department that was provided to the Governor's Office.

Zanobini reported on [SB 602, Allen. Pesticides: neonicotinoids: labeling](#). This bill was still in the early stages, and stated that if any seed is treated with neonicotinoids and then grown into a plant, then the plant would need to be labeled. Zanobini stated that there were concerns about the scientific basis for this bill and that CANGC was watching this bill closely as it developed.

Zanobini reported on [AB 1163, Irwin. Specialty crop funding](#). This bill would provide \$3 million of funding allocated to the California Grown program, and which would influence retailers to give preference to California grown products. [Program note: since the meeting, the bill has been substantially amended and no longer addresses this issue.] He noted that there were several bills introduced pertaining to California-grown products.

14. County Agricultural Commissioners Update

Joe Deviney, Santa Clara Agricultural Commissioner and chair of the CACASA Pest Prevention Committee, discussed new proposed rules for pesticide use near schools. The proposal would require notifications from the growers to the school administration of the pesticide application season for the year, and a week ahead of any pesticide use, which could not occur between 6:00 am and 6:00 pm. The proposal would not exempt any type of pesticide, and there had been 16,000 comments concerning the rule submitted to the Department of Pesticide Regulation.

The Board further discussed the current rules for the use of pesticides near schools, how to define school property, and where new schools could be located.

The Board went on to discuss expected increases in *Phytophthora ramorum* detections in the next year, internet plant sales, CDFA's High Risk Inspection Program, polyphagous shot hole borer, and the movement of pests via firewood.

15. Public Comments

None.

16. Next Meeting/Agenda Items

The next meeting will be in September 2017. A Doodle poll will be sent out by Erin Lovig around June 1, 2017 to determine the best date available.

17. Adjournment

Meeting was adjourned at 1:20 pm

Respectfully submitted by:

Erin Lovig

Senior Environmental Scientist

CDFA Nursery, Seed, & Cotton Program

Approved by Board Motion on September 18, 2017



NEW PESTS OF CONCERN 2016

Jason Leathers & Kevin Hoffman
Pest Detection/Emergency Projects

PD/EP Detection Surveys 2016

- Gypsy Moth
- Japanese Beetle
- Exotic Fruit Flies
- Khapra beetle
- Asian Defoliating Moths
- Exotic Woodborers
- Stone Fruit Commodity
- Asian Citrus Psyllid & Huanglongbing
- European Grapevine Moth
- False Codling Moth
- Red Palm Weevil
- Olive Bark Beetle
- European Corn Borer (counties)
- European Pine Shoot Moth (counties)
- Nantucket Pine Tip Moth (counties)
- Light Brown Apple Moth* (for LBAM Program)
- Glassy Winged Sharpshooter* (for Pierce's Disease Program)



Fruit Fly Jackson Trap (CDFA)



EGVM Trap (CDFA)

PD/EP Delimitation Surveys 2016

Increased trap density and/or visual survey around pest find.

- Gypsy Moth - 5 counties
- Japanese Beetle - 4 counties
- Exotic Fruit Flies - 10 counties
- Asian Citrus Psyllid - 15 counties
- European Grapevine Moth - 2 counties
- Huanglongbing - 1 county



Fruit Fly McPhail Trap (CDFA)



Visual Survey for ACP (CDFA)

PD/EP Treatments 2016

Preventive

- Medfly Preventive Release Program

Corrective (Eradication and Suppression)

- Malaysian Fruit Fly - 1 county
- Mediterranean Fruit Fly - 1 county
- Oriental Fruit Fly - 2 counties
- Asian Citrus Psyllid - 17 counties
- Huanglongbing - 1 county
- Japanese Beetle - 2 counties



Chilled, Sterile Medflies (CDFA)



EGVM Fruit Removal (CDFA)

2016 Exotic Fruit Fly Detections

SPECIES	COUNTY	FLIES	TOTAL
<i>Anastrepha obliqua</i> West Indian Fruit Fly	Los Angeles	1	1
<i>Bactrocera correcta</i> Guava Fruit Fly	Orange	2	2
<i>Bactrocera dorsalis</i> group Oriental Fruit Fly group	Los Angeles Orange Riverside San Diego San Joaquin Santa Clara Sonoma	9 1 2 1 1 2 1	17
<i>Bactrocera latifrons</i> Malaysian Fruit Fly	Los Angeles	2	2
<i>Bactrocera tau</i> An Exotic Fruit Fly	San Bernardino	1	1
<i>Bactrocera zonata</i> Peach Fruit Fly	Los Angeles San Joaquin San Mateo	2 1 1	4
<i>Ceratitis capitata</i> Mediterranean Fruit Fly	Los Angeles Solano	18 1	19

Fruit Fly Projects 2005 - 2016

Year	Flies	Species	Eradications	Quarantines	Delimitation Only	Flies in N CA / Central Valley
2005	63	5	7	3	23	0
2006	81	5	15	3	29	9
2007	80	5	11	4	15	16
2008	78	4	10	3	12	1
2009	83	7	11	8	30	3
2010	40	7	5	3	13	10
2011	55	5	8	2	17	11
2012	37	4	6	1	15	0
2013	161	4	12	1	16	6
2014	94	6	10	3	26	0
2015	110	6	18	4	32	1
Avg 05-15	80	5	10	3	21	6
2016	46	7	4	2	18	4

An Exotic Fruit Fly, *Bactrocera tau*

- 1 male detected in 2016: Ontario, San Bernardino Co.
- First detection in the environment in the U.S.
- Occurs in west Asia.
- Feeds primarily in melons.
- No treatments triggered.



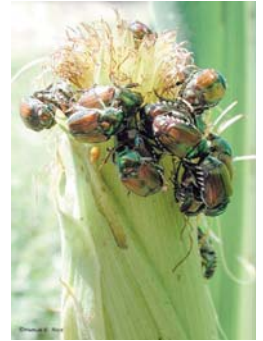
Male *B. tau* (Forestry Images)



Male *B. tau* (Animalandia)

Japanese Beetle, *Popillia japonica*

- 3 adults trapped in the environment:
 - 1 near previous find site in Carmichael (Sacramento Co.)
 - 1 in Hawaiian Gardens (Los Angeles Co.)
 - 1 in La Palma (Orange Co.)
- 20 adults trapped at airports and freight forwarding facilities.
- Beetles found on 112 aircraft originating from JB infested states.
- Treatments conducted in 200-meter radius around previous 2014-2015 Carmichael finds and 2015 Sunnyvale finds (Santa Clara Co.).
- Soil drench of chlorantraniliprole or imidacloprid used for larvae.



Japanese Beetles on Corn (Iowa St. U.)

Gypsy Moth, *Lymantria dispar*

- 9 males detected in 2016: Alameda, Los Angeles (4), Marin, Mendocino (2), and Santa Barbara counties.
- All were North American / European genotype.
- No treatments triggered.



Male Gypsy Moth (USDA)



GM Egg Masses & Pupal Skins (CDFA)

European Grapevine Moth (EGVM) *Lobesia botrana* - **ERADICATED**

- Over 43,000 traps statewide.
- Voluntary treatment of commercial vineyards by growers.
- Treatment of residences by CDFA with either grape removal, *Btk*, or mating disruption.
- 2010 – 100,959 moths (10 counties)
- 2011 – 144 moths (5 counties)
- 2012 – 77 moths (Napa)
- 2013 – 40 moths (Napa)
- 2014 – 1 moth (Sonoma)
- 2015 – 0
- 2016 – 0



EGVM Damaged Grapes, Napa (CDFA)



EGVM Damaged Grapes (R. Gonzalez, U. Chile)

ERADICATION DECLARED IN AUGUST 2016

Asian Citrus Psyllid (ACP), *Diaphorina citri* & Huanglongbing (HLB), *Candidatus Liberibacter* spp.

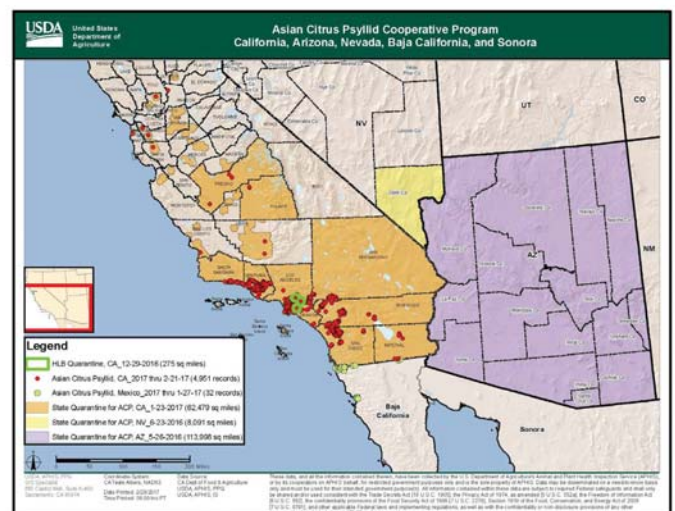
- Over 35,000 yellow panel traps placed in citrus producing counties.
- Treatment in a 50- to 800-meter radius of find sites with a foliar insecticide (cyfluthrin) and a systemic (imidacloprid).
- Development of biocontrol for suppression.
- Goal: Inhibit spread of ACP by restricting human-mediated movement, suppressing established populations, and eradicating outlying incipient populations, and eradicate HLB when found.
- HLB detected in Los Angeles County in 2012, 2015 - 2017.



ACP Nymphs (M. Rogers, U. FL)



ACP Stunted Leaves (M. Rogers, U. FL)



Insect Biocontrol

- Asian citrus psyllid
- Bagrada bug
- Brown marmorated stink bug
- Cereal leaf beetle
- Olive fruit fly
- Olive psyllid
- Pink hibiscus mealybug



BMSB Adult (Univ. GA)



Olive Psyllid Nymph (LACAC)



Olive Psyllid, Waxy Excretions (LACAC)

Olive Bark Beetle (OBB), *Phloeotribus scarabaeoides*

- Found at vineyard in Riverside County in October 2016.
- First record from the Americas.
- Dozens of mature olive trees purchased from a property in San Diego county and planted at the vineyard at least a year earlier.
- Surveys of the San Diego property could not find any beetles.
- OBB is a well-known pest of olive.
- Only other preferred host is oleander, and can occasionally be found feeding on ash or lilac.



OBB Female (P. Falatico)

Olive Bark Beetle (OBB), *Phloeotribus scarabaeoides*



Potential distribution of olive in Mediterranean (Oteros 2014)

- Native to the Mediterranean region.
- Widely distributed in Europe, North Africa, and the middle East.
- Not known to have ever invaded any other regions.
- Listed as a harmful organism (potential quarantine pest) by Japan, Paraguay and Peru.

Olive Bark Beetle (OBB), *Phloeotribus scarabaeoides*

- Females bore through bark and excavate transverse tunnels on either side of the entry point.
- Each female lays up to 60 eggs in the tunnels.
- Larvae bore up or down from the entrance tunnel underneath the bark.
- This feeding causes partial to complete girdling of the twig/branch.
- Larvae pupate inside the feeding galleries.



OBB Holes (CDFA)

Olive Bark Beetle (OBB), *Phloeotribus scarabaeoides*

- OBB has 2-4 generations per year.
- Spring and early summer adults tend to lay eggs in prunings and olive wood stacked as firewood rather than in living trees.
- OBB could be transported long distances when infested olive wood or living plants are moved.



OBB Galleries (CDFA)

Olive Bark Beetle (OBB), *Phloeotribus scarabaeoides*

- So far OBB has only been found in the environment at the original vineyard as well as one residential property, both in Riverside County.
- Surveys of nurseries also found it in mature large box olive trees at three nurseries, all in Riverside County.
- Surveys of nurseries in other counties have not found the beetles.



OBB Holes (CDFA)

Olive Bark Beetle (OBB), *Phloeotribus scarabaeoides*

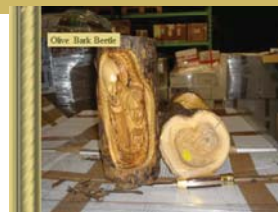
- OBB is considered a serious pest of olive and can cause heavy losses of young shoots, flowers, and fruit.
- In regions where OBB is established growers alter cultural practices by moving olive prunings and wood far away from groves to reduce pest pressure.



OBB Galleries (CDFA)

Olive Bark Beetle (OBB), *Phloeotribus scarabaeoides*

- OBB is not common to find in regulatory situations so the pathway it might have taken to enter California is unknown.
- Phloeotribus* sp. was intercepted once in 2005 in San Diego in a shipment of olive wood artifacts from Israel.
- Traps were put up in and around warehouse and no beetles were caught.



Beetle Damage (CDFA)

Olive Fruit Fly, *Bactrocera oleae*

- Before the olive fruit fly came into California around 1998, the state sourced 11% of world's table olives.
- Olives typically produced by small family farms with average of 40 acres.
- The high cost of treatment (~\$1500/acre just for product) for olive fruit fly combined with high labor costs for hand harvesting necessitated a switch to less profitable olive oil production for many growers.
- New pests such as OBB might lead growers to switch to other crops.



Olive Fruit Fly (U. FL)

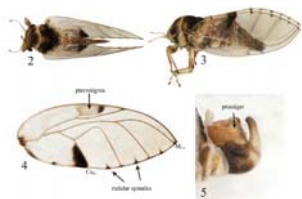
Olive Bark Beetle (OBB), *Phloeotribus scarabaeoides*

- CDFA has proposed a 'B' rating for OBB and this is open to public comment until March 5, 2017.
- USDA is sharing the information about OBB with other states to determine if OBB could be more widespread.
- Federal policy is still to be determined.



Curtain Fig Psyllid, *Macrohymotoma gladiata*

- Confirmed in 2016: Anaheim, Orange County.
- First detection in the environment in the U.S.
- Occurs in west Asia.
- Feeds primarily on curtain fig (*Ficus microcarpa*).
- Deforms new growth, produces lots of wax.
- B-rated.



M. gladiata (A. Rung, CDFA 2016)



M. gladiata wax (Georgofili INFO)

HOW CAN YOU HELP? REPORT!

County: County Agricultural Commissioner
 State: CDFA Report-A-Pest
www.cdfa.ca.gov/phpps/ReportaPest/
 1-800-491-1899
 Federal: Hungry Pests
www.hungrypests.com/
 iPhone: Report A Pest





Weed Alerts and California Update

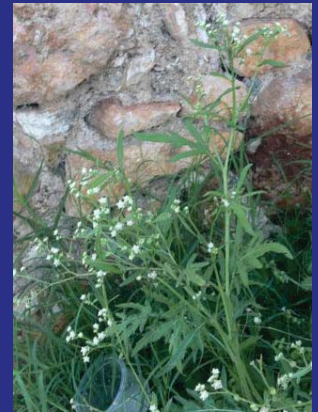
Dean G. Kelch

California Department of Food and Agriculture



Santa Maria feverfew *Parthenium hysterophorus*

- PRE 18 CA nox
- Tropical annual herb
- Noxious in Australia
- Thrives on disturbance
- Likes summer water
- Inhibits germination of plants
- Toxic to stock
- Contact dermatitis in people
- 2 sites in Orange Co.



CalIPC Draft PRE scores

Scientific Name	Common Name	Family	Draft PRE Score	Final PRE Score	Draft to Final Change
<i>Acacia baileyana</i>	cootamundra wattle	Fabaceae	22	22	0
<i>Acacia cyclops</i>	cyclops acacia	Fabaceae	17	17	0
<i>Acacia paradoxa</i>	kangaroothorn	Fabaceae	18	19	1
<i>Acacia pycnantha</i>	golden wattle	Fabaceae	15	16	1
<i>Acaena novae-zelandiae</i>	biddy-biddy	Rosaceae	17	18	1
<i>Achnatherum brachychaetum</i>	punagrass	Poaceae	20	20	0
<i>Aegilops cylindrica</i>	jointed goatgrass	Poaceae	18	18	0
<i>Alopecurus pratensis</i>	meadow foxtail	Poaceae	15	18	3
<i>Alyssum murale</i> , <i>A. corsicum</i>	yellowtuft	Brassicaceae	21	21	0
<i>Ambrosia trifida</i>	giant ragweed	Asteraceae	19	19	0
<i>Aponogeton distachyos</i>	Cape pondweed	Aponogetonaceae	17	17	0
<i>Araujia sericifera</i>	bladderflower	Asclepiadaceae	20	20	0



Chilean cestrum *Cestrum parqui*

- PRE 20
- Native to Chile
- Root-sprouting shrub
- Toxic to livestock
- Noxious in Australia
- Occ. In horticulture
- Only persisting from hort in CA?



A. Barra



lantana *Lantana camara*

- PRE 22
- Native to Neotropics
- Heavily branched shrub growing in clumps, thickets or vines.
- Flowers vary in colour
- Frs glossy purplish-black
- Grows in wide variety of habitats
- 5 mil hectares infested in Australia
- Horrible in HW
- Mostly a waif in disturbed areas & arroyos in So CA



Queensland Government



Old mans beard *Clematis vitalba*

- PRE 18 CA A
- Native to Europe & SW Asia
- aggressively spreading woody vine
- found along streams, fencelines, forest edges and hillsides
- can grow to 100 feet long and can completely blanket trees
- Creamy white flowers followed by feathery seed heads in late summer
- Similar to native clematis but w/ bisexual fls
- Noxious weed in WA & OR

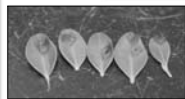
In CA known from Santa Cruz & Marin Counties



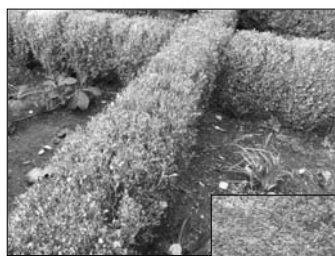
Kings County, WA

Boxwood Blight

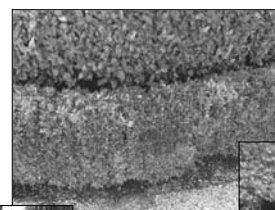
Calonectria pseudonaviculata
(=*Cylindrocladium buxicola*)



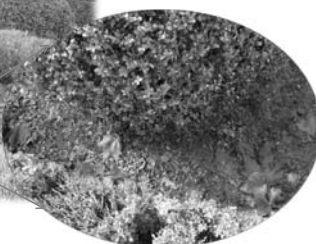
Black Longitudinal Lesions



Easily moved by touch
Sweeps through plantings quickly
Humid and rainy conditions promote spread



The fungus grows in leaves and stems.
Leafy debris harbors the pathogen
and infests the soil.



Other Diseases of Boxwood With Similar Symptoms

- *Volutella*
- Winter Browning

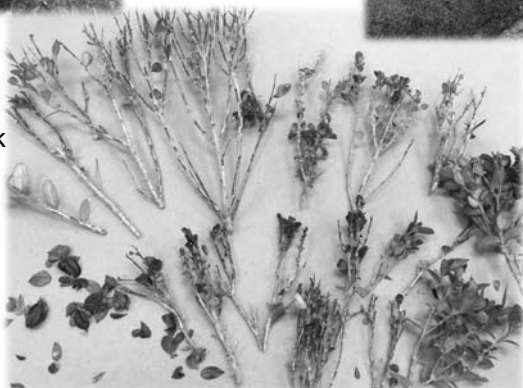


Phomopsis dieback

If you see this,
call your
Local Agricultural
Commissioner



Look for
the black
stem
lesions!



Take extreme caution in
disposal

Wear disposable gloves,
booties and suits if possible

Double bag and safely
transport to the landfill

Sanitize all equipment used



Boxwood Blight Identification Guide

INITIAL SYMPTOMS



Dark leaf spots (left) and spores of the boxwood blight fungus (*Colletotrichum pseudonaviculata*) on lower leaf surfaces (right).



Zonate leaf lesions.



Black stem lesions.

LANDSCAPE AND NURSERY SYMPTOMS



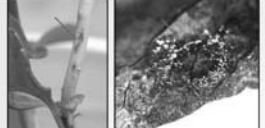
Infected boxwood and pachysandra in the landscape (left) and leaf spots on pachysandra (right).



Foliar and stem symptoms result in severe defoliation leading to decline and death of boxwood plants. Boxwood blight affects all species of boxwood, pachysandra, and sarcococca.



Stem lesions on pachysandra (left) and fungal spores on lower surface of pachysandra leaves (right).



Stem lesions on pachysandra (left) and fungal spores on lower surface of pachysandra leaves (right).

For more information:
www.ct.gov/caes/boxwoodblight
www.boxwoodblight.org



All photos from CAES.

Funding from FY2013 Farm Bill, USDA-APHIS.

Lots of Info on the Internet!!

PDF Best Management Practices for Boxwood Blight in the ... - Virginia Te...
<https://pubs.ext.vt.edu/PPWS/PPWS-29/PPWS-29-pdf.pdf> •
*Cylindrocladum pseudonaviculata*1, is a serious fungal disease of boxwood that results in defoliation and decline of susceptible boxwood. In Virginia boxwood blight was first ...

PDF Prevention and Management of Boxwood Blight - NC Cooperative ...
<https://www.ces.ncsu.edu/wp-content/uploads/.../Boxwood-Blight-Guide-01.03.13.pdf> •
 Common names of the disease: Boxwood blight, box blight, *Cylindrocladum box* ... Scientific name:
 Most literature refers to the fungus that causes box blight as ...

PDF Boxwood Blight--A New Disease for Connecticut and the US - CT.gov
www.ct.gov/.../boxwood_blight_a_new_disease_for_connecticut_and_the_u.s._12... •
 by SM Douglas - Cited by 3 - Related articles
 was tentatively identified as boxwood blight, caused by the fungus *Cylindrocladum buxicola* (syn. *C. pseudonaviculatum*). Since this fungus had not been ...

Boxwood blight - Wikipedia

https://en.wikipedia.org/wiki/Boxwood_blight •

Boxwood blight is a widespread fungal disease affecting boxwoods caused by *Cylindrocladum buxicola* (also called *C. pseudonaviculatum*). Contents. [hide]

History · Hosts · Symptoms and disease process · Prevention and treatment

Boxwood Blight | Fine Gardening

www.finegardening.com/boxwood-blight •

Since the first confirmed case in the United States about a year ago, **boxwood blight** (caused by *Cylindrocladum pseudonaviculatum*) has spread to 10 states ...

Boxwood Blight-Cylindrocladum buxicola - Saunders Brothers

www.saundersbrothers.com/index.cfm?fuseaction/home.showpage/.../index.htm •

Boxwood Blight Update. We hope everyone is having a great winter, but more importantly, we hope everyone is ready for spring to start very soon. We are back ...

Boxwood Blight Identification Guide

INITIAL SYMPTOMS



Dark leaf spots (left) and spores of the boxwood blight fungus (*Calonectria pseudonaviculata*) on lower leaf surfaces (right).



Zonate leaf lesions.



Black stem lesions.

LANDSCAPE AND NURSERY SYMPTOMS



Foliar and stem symptoms result in severe defoliation leading to decline and death of boxwood plants. Boxwood blight affects all species of boxwood, pachysandra, and sarcococca.

All photos from CAES.
Funding from FY2013 Farm Bill, USDA-APHIS.



Infected boxwood and pachysandra in the landscape (left) and leaf spots on pachysandra (right).



Stem lesions on pachysandra (left) and fungal spores on lower surface of pachysandra leaves (right).



For more information:
www.ct.gov/caes/boxwoodblight
www.boxwoodblight.org

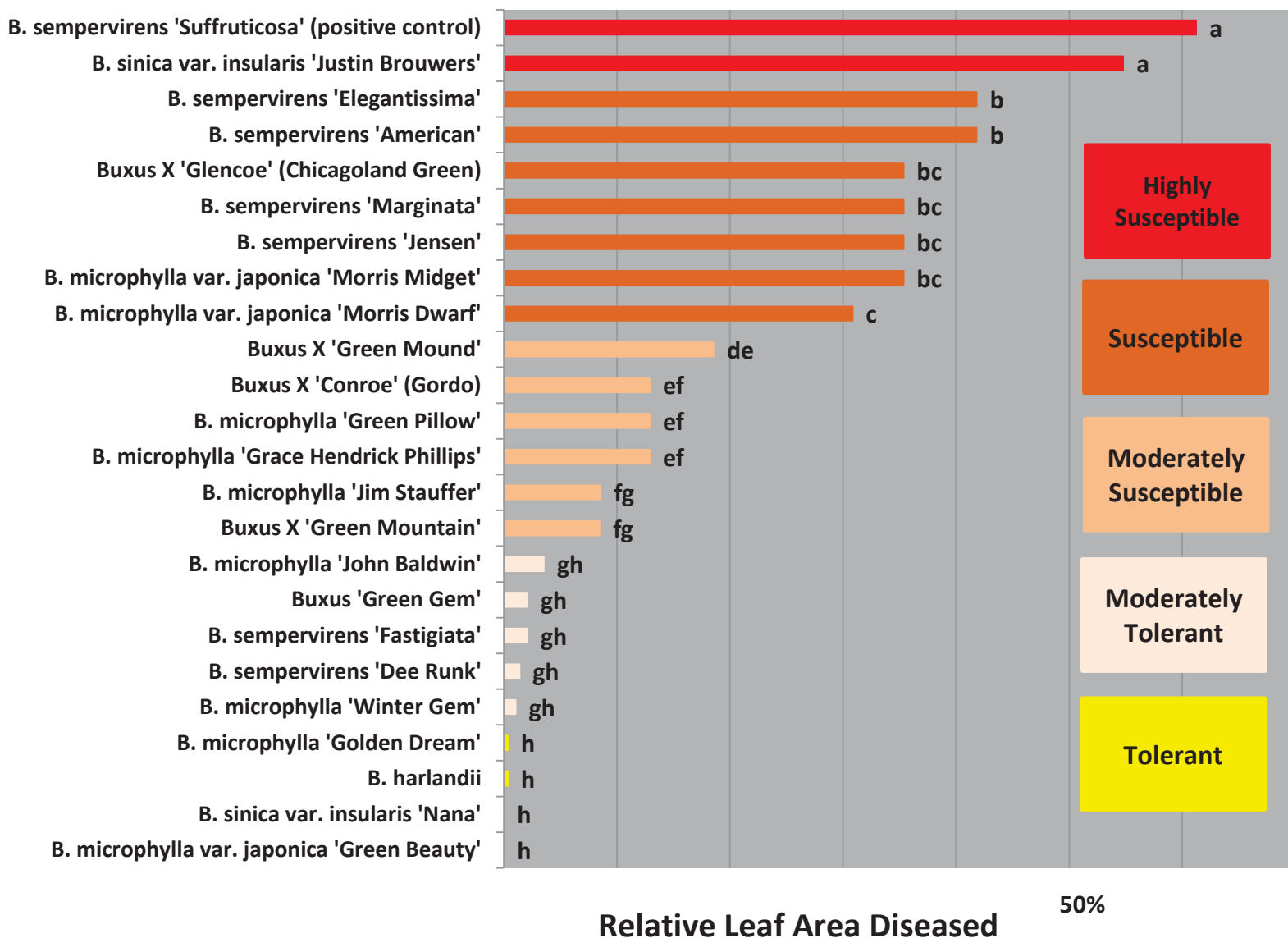
Susceptibility of Commercial Boxwood Varieties to *Cylindrocladium buxicola*

Miranda Ganci, D. M. Benson and K. L. Ivors

Department of Plant Pathology, North Carolina State University

Susceptibility to box blight (*Cylindrocladium buxicola* = *C. pseudonaviculatum* = *Calonectria pseudonaviculata*) was evaluated for twenty three varieties of boxwood (*Buxus* spp.) at the Mountain Horticultural Crops Research and Extension Center in Mills River, NC during the summer of 2012. Disease assessments were performed based on a modified Horsfall-Barratt scale including percent leaf area diseased and percent stem streaking. The results shown below are based on the final disease assessment. Our results indicate a wide range in susceptibility of *Buxus* spp. to the boxwood blight pathogen. The varieties listed as tolerant had minimal lesion development caused by *C. buxicola*. It is important to note that some of these varieties are limited in their optimal plant hardiness zones; make sure to look up specific growing requirements for each variety before recommending them in your area.

Susceptibility of Commercial Varieties to Box Blight (analysis based on final disease assessment)





NITROGEN MANAGEMENT PLAN WORKSHEET

NMP Management Unit: _____

1. Crop Year (Harvested):		4. APN(s):	5. Field ID (s)	Acres
2. Member ID#				
3. Name:				
CROP NITROGEN MANAGEMENT PLANNING		N APPLICATIONS/CREDITS	15. Recommended/Planned N	16. Actual N
6. Crop		17. NITROGEN FERTILIZERS APPLIED		
7. Production Unit		18. Dry/Liquid N (lbs/ac)		
8. Projected Yield		19. Foliar N (lbs/ac)		
9. N Recommended		20. ORGANIC MATERIAL N		
10. Acres		21. Available N in Manure/Compost (lbs/ac estimate)		
POST PRODUCTION ACTUALS		22. Total N Applied + Available (lbs per ac) (Box 18+19+21)		
11. Actual Yield (Units/ac)		23. NITROGEN CREDITS (EST)		
12. Total N Applied (lbs/ac)		24. * Available N carryover in soil; (annualized lbs/ac)		
13. ** N Removed (lbs N/ac)		25. *N in Irrigation water (annualized, lbs/ac)		
14. ***Notes:		26. Total N Credits (lbs per ac) (Box 24+25)		
		27. Total N Applied + Available + Credits (Box 22+26)	Transfer to Box 9	Transfer to Box 12
P L A N C E R T I F I C A T I O N				
28. CERTIFIED BY:		29. CERTIFICATION METHOD		
		30. Low Vulnerability Area, No Certification Needed		
		31. Self-Certified, approved training program attended		
DATE:		32. Self-Certified, UC or NRCS site recommendation		
		33. Nitrogen Management Plan Specialist		

* 24. and 25. Recommended Not Required
 ** 13. Your Coalition will provide the method to be used to estimate N Removed.
 *** 14. Anything that might change what you apply.

	Fill out at the beginning of year with projected N application and projected yield.
	Fill out after final N application and harvest with actuals, keep on farm

00010

Central Valley Regional Water Quality Control Board

Nitrogen Management Plan WORKSHEET

Template for the Nitrogen Management Plan *Summary of Regulatory Requirements*

This publication contains the template for the Nitrogen Management Plan (NMP) approved on December 23, 2014 by the Executive Officer of Central Valley Regional Water Quality Control Board (Regional Board). Each member of a third party entity (coalition) must prepare and implement an NMP for every crop "management unit" covered by the membership. "Management unit" is a term used to describe a group of parcels that are managed in the same way in regards to nitrogen applications.

Each member must use the NMP template described in this publication as the basis for planning their crop production activities. Summary information from this NMP that covers the previous crop year must be submitted to the coalition on request (specific summary information that must be submitted has yet to be determined). A template for this summary information will be provided to the member by each coalition based on the entity's deadline for compiling and reporting the NMP information.

The NMP and NMP Summary Report (yet to be developed) for all fields/parcels shall be maintained at the member's farming operations headquarters or primary place of business. The member must provide the NMP and Summary Report to board staff, if requested or, should board staff or an authorized representative conduct an inspection of the member's irrigated agricultural operation. In addition, members shall comply with the following requirements where applicable:

Members within a High Vulnerability Groundwater Area
For members in a high vulnerability groundwater area, for which nitrate is identified as a constituent of concern, the member must prepare and implement a

certified NMP. Starting in 2015 (some coalition deadlines differ), the plan must be certified in one of the following ways:

- Self-certified by the member who attends a California Department of Food and Agriculture or other Executive Officer approved training program for nitrogen plan certification. The member must retain written documentation of their attendance in the training program; or

- Self-certified by the member that the plan adheres to a site-specific recommendation from the Natural Resources Conservation Service (NRCS) or the University of California Cooperative Extension. The member must retain written documentation of the recommendation provided; or

- Certified by a nitrogen management plan specialist as defined in each coalition's General Order. Such specialists include Professional Soil Scientists, Professional Agronomists, Crop Advisors, certified by the American Society of Agronomy, or Technical Service Providers certified in nutrient management in California by the NRCS; or

- Certified in an alternative manner approved by the Executive Officer. Such approval will be provided based on the Executive Officer's determination that the alternative method for preparing the NMP meets the objectives and requirements of the General Order.

Members within a Low Vulnerability Groundwater Area
All members within low vulnerability areas shall prepare and update annually an NMP. The member must use the NMP described in this publication or equivalent. Certification of the NMP and submittal of an NMP Summary Report are not required.

For compliance with the General Orders for the Irrigated Lands Regulatory Program

Approved: 23 December 2014

1. Enter the **Crop Year** for which this report is based upon. Information in NMP Worksheets should be based upon the calendar year a crop is harvested (i.e. winter cereal grains and some citrus should report information based on the year they are harvested even if fertilization is in the previous year). Newly planted trees or vines should report amount of nitrogen applied even if no crop is harvested.

6. Enter the **Crop** name (almonds, walnuts, table grapes, wine grapes, raisin grapes, watermelons, canning tomatoes, fresh market tomatoes, etc.).

Enter the amount of **Nitrogen Recommended** (estimated amount needed) to be applied to meet your expected yield. Use crop recommendations from CDEA, UCCE, NRCS, commodity organizations or site specific knowledge based on previous experience to appropriately estimate the amount of Nitrogen (N) needed. This should be the same number used in #27, Total N Applied and Available.

2. Enter the membership identification number (**Member ID#**) issued by your water quality coalition.

3. Enter the **Name** of the person completing the form. This needs to be the owner or manager of the farm or the individual certifying the plan (if certification is necessary).

7. Enter the standard **Production Unit**. This is the standard unit that is the basis for your nitrogen management planning (tons, pounds, cartons, bales, etc.). For irrigated pasture, use University of California recommended nitrogen rates needed for desired growth.

10. Enter total irrigated **Acres** for the management unit covered by each worksheet.

11. Actual Yield is the total amount of crop harvested in units per acre. This total should be an average of the production from a management unit covered by this Nitrogen Management Plan. Compare the Actual Yield to the total amount of N that was available for the crop. Assess if your N applications were appropriate for the yield achieved. Use available resources or site experience to determine the appropriate amount compared to the yield.

14. Add any Notes to the worksheet such as information about circumstances faced during the crop season that impact your recommended nitrogen applications #9 such as a larger

5. Enter the **Field Identification (ID)** for each unique management unit; the field ID can be an alpha/numeric, your internal field identifier or the site number used on your pesticide use permit. If the same

8. Enter your **Projected Yield** per acre for the management unit for the upcoming season. Realistic yield expectations will help guide N management decisions.

12. **Total N Applied** is the amount of nitrogen applied in pounds per acre. #12 should equal the total indicated in #27, column #16.

13. A Technical Work Group is in place to develop tools to better estimate nitrogen removal by a crop. This information will be used to estimate the amount of N **Removed** each year to assist with the calculation of Nitrogen after application to a crop. Your Condition will provide you with the most up to date information on how to estimate N removed.

or smaller crop than projected. Application amounts and timing can be adjusted based upon changing conditions (weather, pest damage, expected yield, etc.).



crop and same nitrogen application is used on more than one field, enter all APN's and/or field numbers where the information applies

Instruction numbering in this document differs slightly from the NMP template approved by the Water Board to accommodate this publication design.

NMP Management Unit:

1. Crop Year (Harvested):		4. APN(s):	5. Field ID (s)	Acres
2. Member ID#				
3. Name:				
CROP NITROGEN MANAGEMENT PLANNING		N APPLICATIONS/CREDITS		
6. Crop		17. NITROGEN FERTILIZERS APPLIED		
7. Production Unit		18. Dry/Liquid N (lbs/ac)		
8. Projected Yield		19. Foliar N (lbs/ac)		
9. N Recommended		20. ORGANIC MATERIAL N		
10. Acres		21. Available N in Manure/Compost (lbs/ac estimate)		
POST PRODUCTION ACTUALS		22. Total N Applied + Available (lbs per ac) (Box 18+19+21)		
11. Actual Yield (Units/ac)		23. NITROGEN CREDITS (EST)		
12. Total N Applied (lbs/ac)		24. * Available N carryover in soil, (annualized lbs/ac)		
13. ** N Removed (lbs N/ac)		25.* N in Irrigation water (annualized, lbs/ac)		
14. ***Notes:		26. Total N Credits (lbs per ac) (Box 24+25)		
		27. Total N Applied + Available + Credits (lbs 22+26)	Transfer to Box 9	Transfer to Box 12
PLAN CERTIFICATION				
28. CERTIFIED BY:		29. CERTIFICATION METHOD		
		30. Low Vulnerability Area, No Certification Needed		
		31. Self-Certified, approved training program attended		
		32. Self-Certified, UC or NRCS site recommendation		
		33. Nitrogen Management Plan Specialist		
DATE:				

*** 14. Anything that might change what you apply.

	Fill out at the beginning of year with projected N application and projected yield.
	Fill out after final N application and harvest with actuals, keep on farm

15. Numbers in the **Recommended/Planned N** column are based on amounts determined by individuals described in #31-33. In this column, allocate how much N you plan to apply from each of your available sources and total each section. Use your Recommended/Planned N totals for each source of N and schedule your applications for the crop year. You can use additional tools/spreadsheets to plan timing for each application. Proper scheduling of N applications is an essential component of a Nitrogen Management Plan.

17. Nitrogen Fertilizers
are any manufactured nitrogen-containing products applied to a field

20. **Organic Material N** is any product applied to a crop that is not manufactured.

23. Soil Nitrogen Credits is the estimated amount of nitrogen that will become available for crop uptake during the growing season.

Parcels/Fields that are in designated **High Vulnerability Areas** will need to be certified by a **Nitrogen Management Specialist**. Certification is needed on the Recommended/Planned N plan (column #15) and not for the Actual N (#16). Nitrogen Management

16. Numbers in this column are from the **Actual** amounts of **nitrogen** applied and should be entered after the crop is harvested. Use the Recommended/Planned N schedule to guide nitrogen applications throughout the growing season. Actual application amounts and timing can be adjusted based upon changing conditions (weather, pest damage, expected yield, etc.).

18. Enter **Dry or Liquid** nitrogen-containing product applied to the field, if any, in pounds per acre.

21. Estimate in pounds per acre the amount of nitrogen in **Animal Manure or Compost** that is applied to a field.

24. Available N Carryover in the Soil is typically estimated by analyzing a soil sample. This estimate should be reported in pounds per acre available to the crop during the growing season.

26. **Total N Credits** is the sum of #24 and #25.

19. Enter nitrogen containing product applied to the crop canopy or above ground plant parts, if any, in pounds per acre.

22. **Total Available N Applied** is the sum total of lines #18, #19 and #21

25. Nitrogen in Irrigation Water is estimated by analyzing an irrigation water sample to determine the nitrogen content. This estimate should be reported in pounds per acre available throughout the crop season based on the amount of irrigation water applied to the crop.

27. **Total N Applied and Available** is the sum of #22 and #26. This total should be the same number as #12.

Specialists include Professional Soil Scientists, Professional Agronomists, Crop Advisors certified by the American Society of Agronomy (and CDE/California CCA), or Technical Service Providers certified in nutrient management in California by the National Resource

Conservation Service (NRCS); or other specialist approved by the Executive Officer. Self-Certification is also an acceptable method provided the certifying member has attended an approved training course.

28. Place for the signature of person certifying this plan, if required (see definitions in 31-33).

29. Certification Method. Place an "X" in the box for the method used.

30. If a field is in a **Low Vulnerability** area as designated by a Groundwater Assessment Report, no certification of this NMP is necessary.

Nursery Services Program Budget Summary

	PPY 2014/15 per 2/27/17	PY 2015/16 per 2/27/17	CY FY2016/17 per 2/27/17	Proposed FY 2017/18 per 2/27/17
Permanent Salary	902,603	947,522	941,248	1,054,786
Temporary Salary	119,447	147,819	152,593	150,000
Staff Benefits (includes Unemployment Ins)	540,675	603,887	612,704	575,258
TOTAL PERSONAL SERVICES	1,562,725	1,699,228	1,706,545	1,780,044
General Expenses	23,897	27,975	20,422	40,000
Printing	3,519	4,217	3,420	5,000
Communications	13,617	12,629	17,310	14,000
Postage	6,704	6,144	5,472	8,000
Insurance-Vehicles	2,026	2,761	3,000	3,000
Travel In-State	34,070	27,545	30,496	35,000
Travel Out-of-State	1,172	7	954	2,000
Training	3,576	373	1,000	10,000
Facilities	149,654	148,339	152,510	145,000
Utilities	7,201	6,504	9,623	10,000
Cons & Prof	1,312	1,382	1,400	2,000
Atty General Charges	0	0	5,000	5,000
External Services (includes web payment service)	5,667	4,922	5,000	5,000
Intradeptl Charges (includes Division Costs, Executive/Administration, IT)	441,920	413,059	471,893	475,770
Pro Rata	108,201	112,335	101,033	102,890
IT Purchases	9,919	12,326	13,122	14,000
Equipment	42,545	26,092	50,000	50,000
Field Expenses/Agri & Lab Supplies	16,531	26,773	25,347	21,000
Vehicle Operations	32,037	30,952	50,000	50,000
Other Misc. Charges	448	0	0	0
Subtotal Oper Exp/Equip	904,016	864,334	967,002	997,660
County Contracts	699,870	657,736	699,862	667,244
Nematode Lab Costs	68,520	67,120	67,000	68,000
TOTAL OPER EXP/EQUIP	1,672,405	1,589,191	1,733,864	1,732,904
Recovery from other programs	(271,911)	(258,383)	(281,894)	(281,894)
Reimbursement 224c - Admin	(42,254)	(42,327)	(43,586)	(41,065)
TOTAL COST RECOVERIES	(314,165)	(300,710)	(325,480)	(322,959)
TOTAL BUDGET w Personnel & Benefits	2,920,965	2,987,709	3,114,929	3,189,989

Nursery Services Program Fund Condition

	PPY 2014/15 EOY Actual	PY 2015/16 EOY Estimate	CY 2016/17 Projection	Projection for 2017/18 Fund Condition	Projection for 2018/19 Fund Condition
BEGINNING RESERVE BALANCE	\$1,647,118	\$1,476,506	\$1,302,740	\$949,411	\$521,022
REVENUE CATEGORIES					
Nursery License Fee	1,755,475	1,789,550	1,800,000	1,800,000	1,800,000
Acreage Fee	299,494	305,168	305,000	305,000	305,000
Delinquent (Penalty) Fee	42,600	41,625	40,000	40,000	40,000
Directory Sales	105	105	100	100	100
R&C & Nematode Certification	648,065	664,096	611,500	611,500	611,500
Interest & Miscellaneous Income	4,614	13,399	5,000	5,000	5,000
TOTAL REVENUE	\$2,750,353	\$2,813,943	\$2,761,600	\$2,761,600	\$2,761,600
EXPENDITURES					
Personnel Services	1,562,725	1,699,228	1,706,545	1,780,044	1,780,044
Operating Exp & Equipment	904,016	864,334	967,002	997,660	997,660
County Contracts	699,870	657,736	699,862	667,244	667,244
Lab Services	68,520	67,120	67,000	68,000	68,000
COST RECOVERIES					
Recovery from other programs	(271,911)	(258,383)	(281,894)	(281,894)	(281,894)
Reimbursement 224c - Admin	(42,254)	(42,327)	(43,586)	(41,065)	(41,065)
TOTAL EXPENDITURES (BUDGET)	\$2,920,965	2,987,709	\$3,114,929	\$3,189,989	\$3,189,989
ENDING RESERVE BALANCE	\$1,476,506	\$1,302,740	\$949,411	\$521,022	\$92,633
AG TRUST FUND					
Interest	318,131	318,943	320,284	321,284	322,284
	812	1,341	1,000	1,000	1,000
ENDING AG TRUST FUND	\$318,943	\$320,284	\$321,284	\$322,284	\$323,284

NOTES OF INTEREST:

Reserve Calculation: The Department recommends that this program maintain a reserve of between 1/3 and 1/2 of its annual expenditures; this calculates to between \$1M and \$1.5M.