

CALIFORNIA INVASIVE SPECIES ADVISORY COMMITTEE (CISAC)
Invasive Shot Hole Borer Sub-Committee
Survey – Early Detection and Rapid Response

Tuesday, March 19, 2019
2:00pm – 4:00pm
Meeting Notes

Meeting Action Items

- **Next Meeting: Tuesday, April 2, 2019, 2:00pm-4:00pm**
- **Sub-Sub-Committees:**

Sub-Sub-Committee	Charge	Participants
Trapping	Develop plan for trapping, including: <ul style="list-style-type: none"> • Where – high-priority areas • Where data should go, and who will get it there • Actions/response to new detections 	Coordinator: Andrea Hefty Participants: Curtis Takahashi, John Kabashima, Madeleine Rauhe, Matt Kaiser, Ed Williams
Visual Surveys	Develop protocol for tiers of surveys, including: <ul style="list-style-type: none"> • Expertise for each tier • Tools • Reporting mechanisms • Where data should go, and who will get it there 	Coordinator: Rosi Dagit Participants: Kim Corella, Sabrina Drill, Gretchen Heimlich, Beatriz Nobua-Behrmann, Jamie Whiteford, Abigail Barraza, John Kabashima

Other Action Items:

- **CDFA** to invite Orange County Parks to April 2 meeting
- **Rosi** will contact Rose, an arborist, to invite her participation and background her
- **Kevin** will share Mountain Area Task Force incident action plans
- **All:** send Rapid Response Plan examples to Rosi and David Pegos
- **Rosi/David:** distribute RRP examples to Survey Sub-Committee members, including Oregon example
- **Rosi** will share her draft RRP once prepared (by end of April)
- **Kyle** will share an RRP example
- **Matt** will share an RRP example
- **David** will identify for April 2 if the CDFA lab has capacity to handle samples
- **David** will work with Sean and Curtis T. to determine whether a draft version of statewide insect trapping guide content regarding SHB is sufficiently finalized to share
- **Working Group:** Report out initial discussions on April 2
- **All:** identify any concerns, opportunities, missing stakeholders, resources (local, grants, etc.) for discussion at the April 2 meeting

- **All:** Others interested in participating in a working group can contact Andrea Hefty, Ed Williams, David Pegos, or Rosi Dagit.

Meeting Proceedings

4. REVIEW OF THE SUB-COMMITTEE MISSION

Background

David Pegos of CDFA said AB 2470, signed by the governor in 2018, allocated \$5 million to a coordinated statewide effort against invasive polyphagous and Kuroshio shot hole borers (SHB or ISHB). One section of the plan addresses surveys, early detection and rapid response. Interested individuals are invited to participate in this and other sub-committees, if they desire. Each sub-committee will meet four times at two-week intervals, while taking actions between meetings to make progress. The goal is for the sub-committees to produce information in two months, which Shannon Lynch will develop into a single report document. Tasks for the Survey Sub-Committee will include:

- Identifying how much of the \$5 million is needed for short-term projects to achieve SHB survey and rapid response goals; and
- Helping to determine how many RFPs are needed, and the associated dollar amounts for each.

5. SUB-COMMITTEE BUSINESS/DISCUSSIONS: Development of ISHB Action Plan

Identify key players that need to be involved

Sub-Committee members identified the following stakeholders or experts who may be missing and deserving of outreach to participate in this Sub-Committee:

- Santa Barbara County
- Shannon Lynch
- Agricultural commissioners from uninfested areas
- Are Central and Northern California sufficiently covered? Curtis T. has trapped in the North Bay.
- Ed represents Pest Prevention and keeps the chair (from Napa County) updated
- Border counties – is CDFA Santa Barbara represented?
 - Individuals who have trapped in both Santa Barbara and Ventura counties include Shelly Bennett, a graduate student, and Tom Dudley, head of that lab
 - Mike Pitcairn
 - Tamara Kleeman with San Luis Obispo County Agricultural Commissioner's Office, which caught one SHB in a trap, surveyed around that area and did not recover the beetle
- National Park Service – we have started talking with them regarding Channel Islands National Park
- Trapping in federal/state parklands requires going through a lengthy permitting process. We should have those agencies represented so they can do the trapping.
- Regarding local/county parks, we are reaching out to Ventura County Parks representatives. Bea has contact with Orange County Parks, and it would be helpful to include them in the next call.
- Arborists: The Society of Municipal Arborists could be invited.
- Regarding land conservancy groups/NGOs, Doug is representing that sector.

Identify issues, concerns and opportunities as they relate to Invasive Shot Hole Borer survey, including early detection and rapid response

Ed Williams noted that the Pathways/Green Waste and Firewood Sub-Committee had identified the following issues:

- The need for trapping as an early detection tool
- The need for a strong understanding of where infestations exist now to limit the expansion of infested areas
- How to accomplish identification?
- It would be helpful to trap around green waste/mulching facilities
- We need additional ideas around trapping

Andrea Hefty reviewed an online map of the current distribution of polyphagous and Kuroshio SHB, showing positive results from tissue samples for PSHB-related fungi and all results from trapping. (<https://ucanr.edu/sites/pshb/Map/>)

Dr. Hefty reviewed two trapping protocols:

- The UC Cooperative Extension/UC Riverside trapping guidelines, available on pshb.org at <https://ucanr.edu/sites/pshb/files/271363.pdf>. With a panel trap, a semiochemical is used to lure the beetles in. A lure lasts for four weeks. The Forest Service protocol is to leave the trap out for four weeks and either sample from it or leave it out for another flight window.
- Stacy Hishinuma's draft protocol. It includes websites for purchasing items, and additional details on how to set up a trap. One potential addition to this protocol is information from a document Richard Stouthamer provided on DNA testing of samples to identify polyphagous or Kuroshio species.

Sub-Committee members discussed surveying and trapping issues and other protocols that serve as templates.

- Should we be looking for other potential pests, which would require multiple lures?
 - I understood this was just for SHB
 - The goal of making this useful for Hawaii and Florida was regarding treatment and actions, not surveying.
 - We need to start with ISHB – maybe we could survey for other invasive pests as resources become available.
 - This is in response to legislation, which is why it is species-focused.
- Visual surveys are always preferred over traps
- Trapping and visual surveys are both part of early detection. Do we have a statewide early detection/rapid response template, addressing who is responsible in every jurisdiction, who does the incident action plan, who reports, how effectiveness is determined? We are working on one for Los Angeles County and I don't want to reinvent the wheel. I would like to put tiers into a bigger framework or schematic plan.
- There is a lot of experience among County agricultural commissioners regarding pest detections, and a general protocol. The quarantine rating for a particular insect determines response. Because the SHB is widespread, much work is necessary to clarify location issues in regard to our established protocols.

- A good example: in Ventura and Santa Barbara counties, until we do a real survey, we don't know if/how the infestation has spread. Santa Barbara County is the leading edge, and there, the Agricultural Commissioner has the ability to take action. Not in LA County.
- For a statewide survey, would it be regulatory or non-regulatory? The leading edge should be the first focus.
- We could hybridize that idea: 1. Start at the leading edge. 2. Then spread traps to other parts of the state to see what shows up. Akif, Shannon and Shelly have done work on this.
- We have done a trap and ground survey in most of Southern California. In Ventura County, we identified some areas – the beetle was not found except in traps. What is done when it is found in new locations? We don't yet have an action plan.
- What is our capacity to handle samples? Does it differ for polyphagous and Kuroshio?
- The different costs of regulatory and non-regulatory detection need to be identified.

Decision: The Sub-Committee created and populated a working group to develop a plan for trapping and response.

Discussion on visual surveying

- We need risk assessments, tools to determine risk. I have some climax models.
- I want to focus on volunteer visual surveys. Should that issue go to the Outreach/Education Sub-Committee? It's a really important tool. It can be difficult to identify all at-risk areas, including residential areas. I am thinking of the data that can be generated.
- The website could be used to provide volunteers with information on confirmation of visual surveys, or, alternatively, there could be a specific group of people who check out areas of highest risk.
- Citizen science versus representatives from each county doing a visual survey of the areas of highest risk. The latter is more useful.
- Rosi Dagit discussed her desire to develop a useful model of visual surveying. She identifies three tiers:
 1. Random, iNaturalist types of surveying
 2. Sabrina and Abby do an online certification program. Once "trained," people get a link to a web-based tool that the RCD funds and manages. Abby developed a tool, but only a few people are doing it. At this point, there aren't sufficient resources to handle many people being involved.
 3. As suggested, each county surveying areas of high risk or high value/importance – targeted, regular checks of these areas.

She recommended a more coordinated/organized place to send all data, both visual surveys and trapping. Make it clear where to send data, and decide how to fund it.

- It could be an internal website.
- We are doing a survey of San Luis Obispo high risk areas – a student crew is surveying County parks.
- Ventura County RCD is seeking funding for a Tier 1 approach.
- In Tier 2, if the area is leading edge, it would go to the regulatory arena.
- We need to place our own traps, with each county doing the work.

- The procedure to shave bark and sample tissue that Akif and Richard developed to identify K or P – it is a big difference, it's either from Southern California, or is naturally spreading its territory.
- The protocol needs to address how to confirm sightings, and where to go from there.

Decision: The Sub-Committee created and populated a working group to develop a protocol for varying tiers of visual surveying.

Mr. Pegos asked both committees to consider where the data will go: to the UC system? Who would take responsibility for getting the data to where it needs to go?

Discussion on rapid response

- A rapid response plan needs to identify which trees to take out.
- Orange County has a management matrix, a decision guide in relation to level of infestation, about what to do with a tree.
- Cooperative Extension does not have BMPs, nor a formal “rapid response” plan. We are recommending tree take if there are more than 150 entry-holes and die back, and have a list of susceptible and preferred species. We have tools to easily make a rapid response plan.
- Does CDFA have rapid response plans for other invasives, such as alder, gypsy moth, that we could adapt o SHB?
 - CDFA representatives were not aware of any rapid response plans for wood boring species.
- We need to identify the management effort for an infested tree – how to deal with it, and need a protocol for the beetle in new non-infested areas. In Ventura County, if I found an infested box elder tree, it was removed immediately as it could bring thousands of beetles to a new location.
- Fortunately in that case, there was a land conservancy trust that could pay the cost of taking out the tree, as the property owner did not have sufficient funds. For rapid response, what to do if the tree is on private land, a large tree, and there are no private funds available? If we have no quarantine and no quarantine authority. Even with the quarantine, there are issues about actions on private property.
- What about fire control as a rationale?
 - A tree almost needs to be dead before we could use nuisance abatement, but we could look at nuisance abatement.
- One rapid response idea: identify the key players before the infestation arrives, and funding for private property owners. Example: Mountain Area Task Force had agencies all working together on the bark beetle, Caltrans, etc., so we could immediately take action on the goldspotted oak borer.
- Where could we get funding for removals?
- Yes, that could be the most expensive part of the SHB issue.
- Do a pilot project in a high-risk area, the results go back to the Legislature, we seek funding to do it statewide.
- LA County has done a pilot GSOD project in Green Valley.
- Another issue is proper disposal once the trees are taken down.
 - The Pathways/Green Waste Committee looked at identifying potential locations – all GSOD trees go to one facility, with a grinder reducing wood to less than 1 inch.

- Can we use the funding to buy equipment?
 - We could try with a pilot to test the concept.
- We had chippers and could chip them down.
- A natural area with endangered species, we need to address the impacts. CDFW and USFWS need to be brought in early so that is not a stumbling block.
- Look at other states with rapid response experience. There are USDA programs, but I've not heard success stories there.
- One Example: Oregon Department of Agriculture had another ambrosia beetle, *crassiusculus*, which was trapped in a high-risk area where they had imported railroad ties. They used a gypsy moth protocol to implement a trapping grid. They identified that the populations were very localized, and then followed an eradication protocol. This is an example of how other protocols can serve as templates.
- The glassy-winged sharpshooter is another insect without a good trap. Through visual surveys, we've been able to eliminate incipient infestations.
- Can infested trees be transported?
 - They need to be chipped on site ideally. They could be loaded up.
 - Los Angeles and Ventura counties are pretty much infested. The trees could probably be chipped in Los Angeles County.
- How difficult is it to move the chipper?
 - It's a trailer. If it is close to the tree, it could work.
- The arboretum has a stationary tub grinder that can handle very large trees.

Co-Chairs asked Sub-Committee members whether a rapid response subgroup should be created to consider the process for reviewing protocols already being used, in order to avoid reinventing the wheel if BMPs are working. There was not interest in creating another subgroup. Instead, it was decided that the full committee could look at protocols and consider, on the side, developing a pilot to prove.

The group agreed that members will identify concerns and opportunities to bring to the next meeting for discussion.

Additional crossover issues to refer to other committees:

- To Pathways/Green Waste:
 - Potential transport methods for removed trees
 - Handling of chipped material needed to avoid spread of infestation
- To Research:
 - Handling of chipped material needed to avoid spread of infestation
- To Control/Suppression:
 - What to do when you find an infestation

Next Meeting – Tentatively, Tuesday, April 2, 2019 from 2:00pm to 4:00pm

Participants confirmed the date for the next meeting.

Agenda items for that meeting will include:

- The two sub-sub-committees sharing preliminary findings
- Additional discussion and resolution on those topics

- Discussion on what a statewide survey might look like
- Participation from regulatory and lab representatives

At Meeting 3, participants will flesh out remaining issues and tie up loose ends. At Meeting 4, the group will develop consensus on content for the report. At both Meeting 3 and 4, the group will work to identify costs, including lab and non-regulatory survey costs, and will consider how the plan would be addressed through RFPs, including NGO involvement.

6. PUBLIC COMMENT ON ITEMS NOT ON THE AGENDA

David Pegos offered each participant an opportunity to provide general comments. The following comments were recorded:

- **Curtis Ewing** is available as needed to work on surveying or trapping
- **Curtis Takahashi:** If there is statewide surveying, we need to identify who will look at the specimens. CDFA lab is a possibility, depending on the volume.
- **Dario Lombardo** can help trap in county parks
- **Evonne Fell** will share a CDFA document about removing HLB and trays
- **Hans Sin:** Endorses the comments about preparing for surveys on critical habitat and threatened and endangered species, to allow surveying to move more rapidly. Also, a rapid response plan should incorporate Akif's work with pesticides and small solutions.
- **John Kabashima:** Endorses Hans' comments. Rapid response will include different levels: tree treatment, tree removal, etc. We need funds for removal of trees from private lands. We are waiting for a proposal from CDFA labs on their ability to do determinations.
- **Julie Clark De Blasio:** For disadvantaged property owners, a possible RFP idea is a trust fund at the county or NGO level, which would be more expedient, to qualify people for assistance in treatments
 - **David:** Possible NGOs include Tree People, Urban Forest Council
- **Madeleine Rauhe:** A lot of our efforts focus on removing trees, not other potential options, nor what to do after. What about treatment, preventive pruning, reactive pruning, soil/trunk injections? Or are those actions the responsibility of the property owner?
 - **David:** Good point – is that part of early detection/rapid response? It will be part of the toolkit. This item is for this group as well as the Research Sub-Committee.
- **Patrick Gower:** Please keep USFWS updated on activities and endangered species areas
- **Sean Farnum:** We have a draft document not in the 2013 statewide Insect Trapping Guide with regard to SHB trapping, both species. CDFA will determine if this is at the stage where it could be shared.

7. ADJOURNMENT

Andrea Hefty and Ed Williams thanked everyone for their participation.

Dr. Hefty acknowledged the hard work that several participants have done on survey protocols, and encouraged anyone feeling stuck to reach out to them or the sub-committee Co-Chairs, who can connect them with a surveying expert.

Meeting Participants

Participant	Affiliation
Dr. Andrea Hefty (co-chair)	U.S. Forest Service
Ed Williams (co-chair)	Ventura County Agricultural Commissioner
Matthew Abbott	USDA, San Diego
Sara Allen	City of San Diego Parks And Recreation Department
Ariel Ambruster	Consensus and Collaboration Program, CSU Sacramento (notetaker)
Paige Anderson	City of San Diego
Abigail Barraza	UC Cooperative Extension
John Beall	Ventura County
Kyle Beucke	CDFA
Douglas Chudy	The Wildlands Conservancy, San Bernardino Mountains
Julie Clark De Blasio	UC Cooperative Extension
Kim Corella	CAL FIRE
Rosi Dagit	RCD of the Santa Monica Mountains
Sabrina Drill	UC Cooperative Extension, Los Angeles and Ventura counties
Amber Durant	CDFA
Akif Eskalen	UC Davis
Evonne Fell	CDFA
Jan Gonzales	UC Cooperative Extension, San Diego
Patrick Gower	US Fish and Wildlife Service
Gretchen Heimlich	Disneyland
Stacy Hishinuma	U.S. Forest Service
John Kabashima	UC Cooperative Extension
Khoa Lam	Los Angeles County Agricultural Pest Control Division
Daniel (Cheol MIn) Lee	CDFA
Dario Lombardo	County of San Diego Parks and Recreation
Beatriz Nobua-Behrmann	UC Cooperative Extension

Pat Nolan	San Diego County Agricultural Commissioner
Christopher Oesch	Dudek Environmental
David Pegos	CDFA (Convener and facilitator)
Madeleine Rauhe	Disneyland
Max Regis	Los Angeles County Agricultural Weights and Measures
Andrew Richards	CDFA
Kim Smith	SANDAG
Sheri Smith	U.S. Forest Service
Curtis Takahashi	CDFA
Nicole Tamura	Irvine Ranch Conservancy
Kevin Turner	CAL FIRE
Jerrold Turney	Los Angeles County Agricultural Weights and Measures
Jamie Whiteford	Ventura County RCD
Travis Whitney	City of San Diego
Sophia Yun	Orange County Agricultural Commissioner' s Office
Mark Berninger	City of San Diego
Curtis Ewing	CAL FIRE
Sean Farnum	CDFA
Chris Kallstrand	Dudek Environmental
Margo Sanchez	Imperial County
Hans Sin	CDFW
Richard Stouthamer	UC Riverside
Dorothy Abeyta	Davey
Gregg Bratcher	CAL FIRE
Ken Devore	CDFW
Anne Jarque	City of San Diego
Matt Slattengren	Contra Costa County Agricultural Commissioner's Office
Mike Parker	Alliance Land Care

Katie Herald	Board of Forestry
Joe Scheele	U.S. Customs and Border Protection
Tom Smith	CAL FIRE
Matthew Kaiser	CDFA
Michael Scholl	CDFA