



South American Palm Weevil Detection Methodology

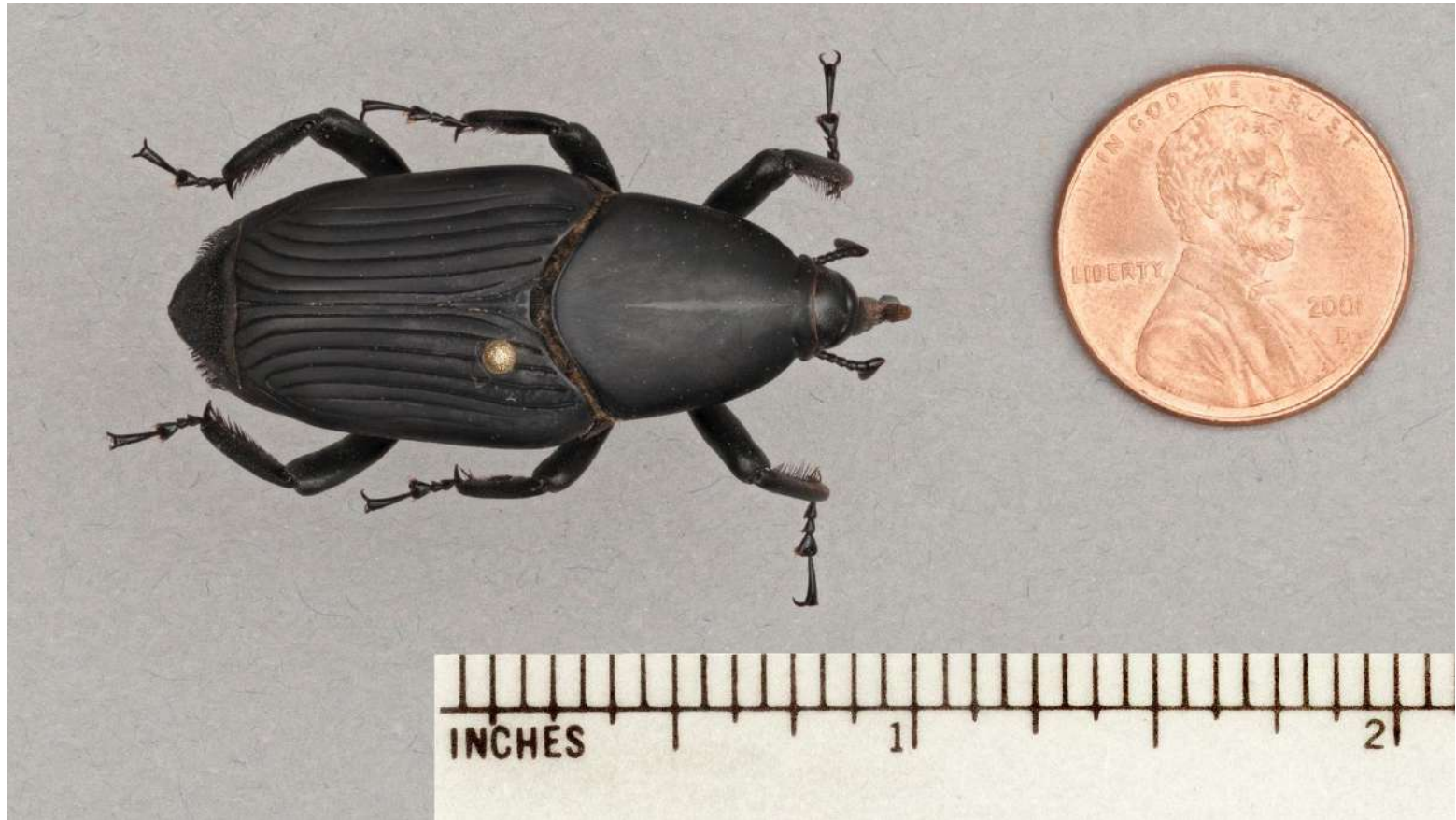
California Dept. of Food & Agriculture
Sacramento, CA

South American Palm Weevil (SAPW)

Rhynchophorus palmarum (L.)

- SAPW is known from Central and South America, the Caribbean, and southern Mexico. Vectors *Bursaphelenchus cocophilus* (Cobb), red ring nematode, which causes red ring disease and can be lethal to coconut and oil palms.
- December 2010 – Resident in Tijuana, Mexico, posted pictures on a website of damage CIDP and a large weevil, which appeared to be SAPW. Reported sighting was near San Ysidro border crossing, ca. 70 miles south of Laguna Beach.
- February 2011 – CDFA deployed traps near Mexican border.
- May 2011 – Single adult male weevil trapped in San Ysidro, and identified as *R. palmarum*. Weevil checked for red ring nematode, with negative results. Additional traps were placed in a 2.5 mile radius.

SAPW Adult Coloration



Trapping

- 2012–2013
- 997 traps placed in palm producing counties



PW TRAP BAITING

- **Killing & Preservation Agent**
- 50/50 Solution of Water and Low-Tox Antifreeze.
- **PW Aggregation Lure**
(Species Specific Pheromone).
- **Lure Enhancer**
(Ethyl Acetate).
- **Food Source – Apples.**



PW TRAP PLACEMENT

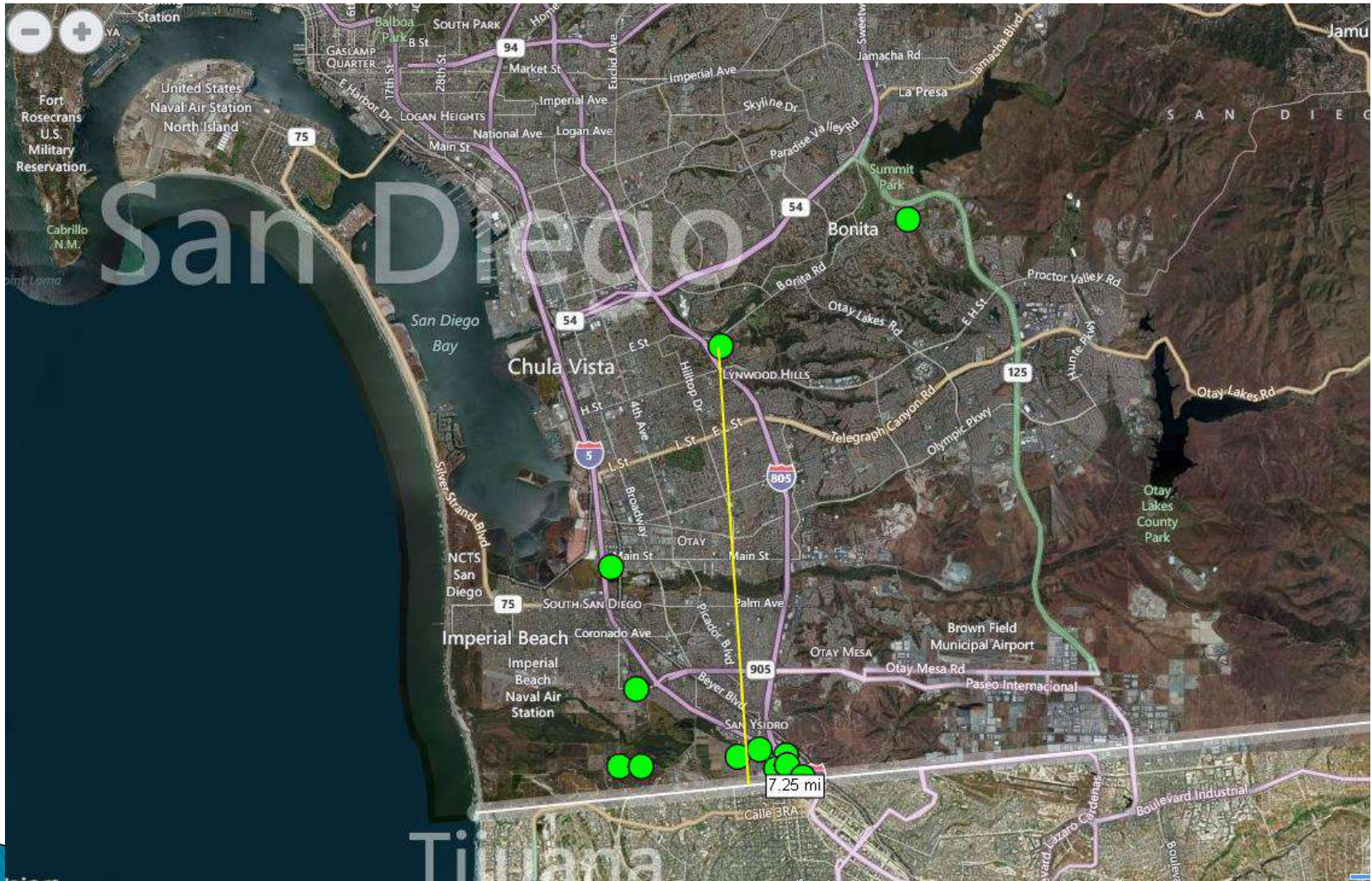
- **Traps placed 6 to 7 feet above the ground.**
- **Traps placed on any palm, except Date and Canary Island Date Palms.**
- **Traps may also be placed on non-host trees.**



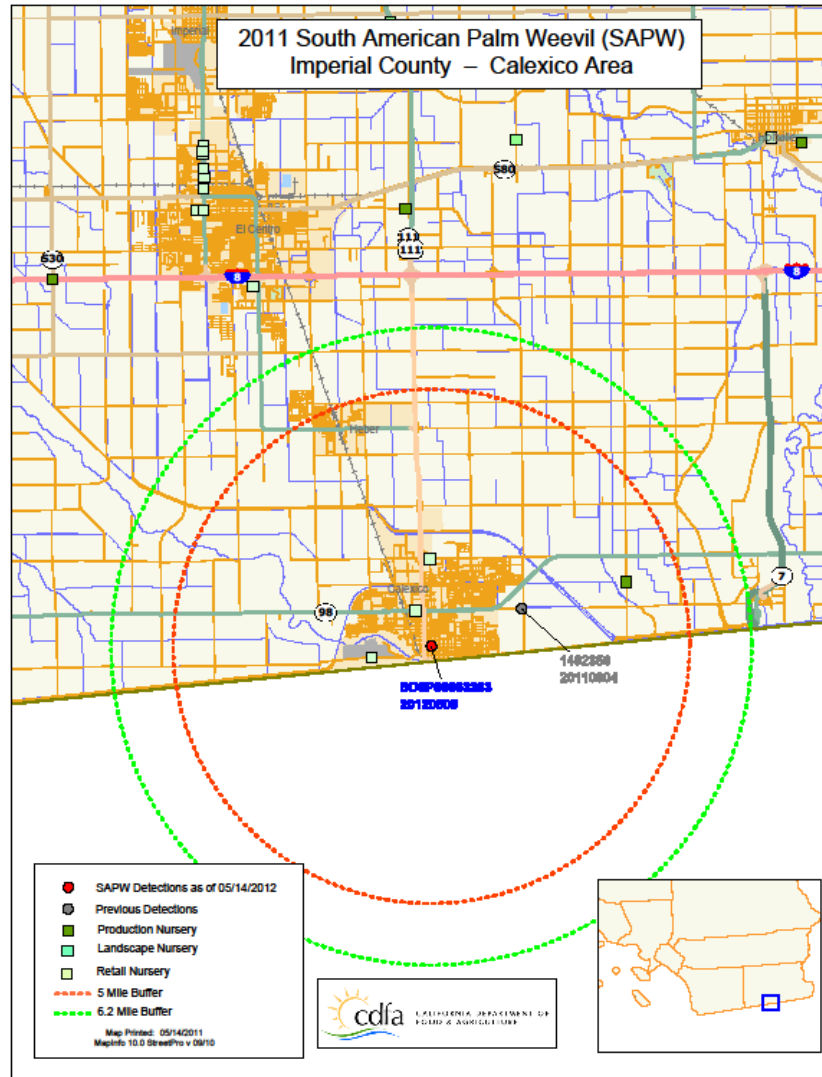
SAPW Detections 2011–2013

- July 2011 – 5 SAPW trapped in San Ysidro. Additional traps deployed in eastern San Diego County and in Imperial County.
- August 2011 – 1 SAPW trapped 65 miles east in Imperial County (Calexico), near international border.
- 2011 to 2013 Totals: San Diego County = 110, Imperial County = 2.
- No infested trees detected, and no detections of red ring nematode.
- All finds are within 10 miles of international border with Mexico.
- SAPW trapped in Texas in May 2012 near border with Mexico.

SAPW – San Diego County



SAPW – Imperial County



OFFICIAL SAMPLES

- ▶ **IF YOU SUSPECT YOU HAVE SEEN THIS INSECT PLEASE CALL THE CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE HOTLINE:**
- ▶ **1-800-491-1899**



CDFA Nematology Lab Procedure for the Examination of South American Palm Weevils for Red Ring Nematode

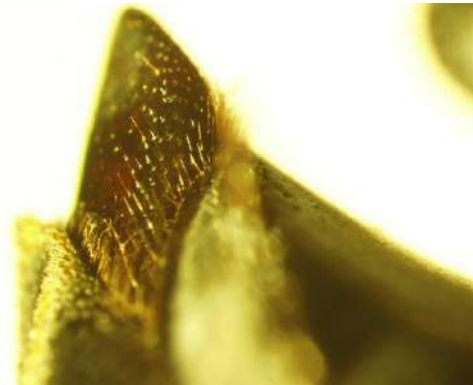
Weevil received in vial containing water. Liquid of trap in separate container

- Examine collected water for nematodes
- Examine liquid from trap for nematodes

Remove Weevil and rinse with water

- Dissect Weevil and tease-out genital capsule in water
- Morphological examination of nematodes
- DNA – PCR and Sequencing

Document results



Visual Survey

- Inspect base of tree for dead adults or fallen cocoons.
- Inspect crown for damage to palm leaf bases and clipped fronds.



**Leaf clipping
from feeding
on leaf shoot**





**Leaf sheath
damage from
larval feeding**



**Larval
damage to
base of leaf**

Missing crowns may be signs of advanced infestations



Missing trees may also be signs of advanced infestations



Trees appear to decline quickly



February 2015



February 2016

Visual Survey

- Time consuming
- Expensive
- Risky?





The End

Questions?

