

## California Pest Rating Proposal

### *Pulvinaria psidii* Maskell: Green shield scale

Hemiptera: Coccidae

Current Rating: B

Proposed Rating: C

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Comment Period: **03/29/2023 – 05/13/2023**

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#### Initiating Event:

*Pulvinaria psidii* has been found in five counties in California. A pest rating proposal is needed.

#### History & Status:

**Background:** *Pulvinaria psidii* is a polyphagous scale. Reported hosts include: **Anacardiaceae:** *Schinus terebenthifolius*; **Moraceae:** *Ficus* sp., *Morus* sp.; **Myrtaceae:** *Psidium guajava*; **Rubiaceae:** *Coffea arabica*; **Rutaceae:** *Citrus* sp.; **Solanaceae:** *Capsicum* sp.; **Zingiberaceae:** *Alpinia purpurata* (Baker et al., 2012; García Morales et al., 2016; Germain et al., 2009; Hamon and Williams, 1984; Hassan, 2009; Jendoubi, 2018; Mani et al., 2009; Pemberton, 1964; Radwan and Hassan, 2009). García Morales et al. (2016) list host plants in 71 families. Three generations per year are reported in Egypt (Baker et al., 2012).

*Pulvinaria psidii* is considered a pest of various crops, including mulberry in Egypt and *Alpinia purpurata* in India and of ornamentals in Florida (Hamon and Williams, 1984; Mani et al., 2009; Radwan and Hassan, 2009). Baker et al. (2012) found *P. psidii* to be the most common scale insect on guava trees in Egypt (Baker et al., 2012). It is considered a “minor” and “infrequent” pest of citrus in Tunisia (Jendoubi, 2018). Impacts on crop plants include large amounts of honeydew leading to sooty mold, which impacts photosynthesis and reduces the quality of the fruit (Elwan et al., 2011).

**Worldwide Distribution:** *Pulvinaria psidii* is reported from: **Africa:** Comoros, Egypt, Seychelles, Tunisia; **Asia:** Bangladesh, India; **Europe:** Spain; **North America:** Mexico, United States (California, Florida); **Oceania:** Hawaii; **South America:** Brazil, Ecuador, Colombia, Venezuela. García Morales et al. (2016) report a total of 102 countries with this scale (Baker et al., 2012; Bhuiya, 1998; Bragard et al., 2022; Germain et al., 2009; Jendoubi, 2018; Mani et al., 2009; Pemberton, 1964).

**Official Control:** *Pulvinaria psidii* is a quarantine pest in Israel (EPPO Global Database).

**California Distribution:** *Pulvinaria psidii* has been found in Los Angeles, Marin, Orange, San Bernardino, and San Diego counties (California Department of Food and Agriculture).

**California Interceptions:** *Pulvinaria psidii* Frequently intercepted on incoming nursery stock and in nursery inspections (California Department of Food and Agriculture).

The risk *Pulvinaria psidii* poses to California is evaluated below.

### **Consequences of Introduction:**

- 1) **Climate/Host Interaction:** *Pulvinaria psidii* is polyphagous and there are likely suitable host plants over much of California. Although many of the locations where this scale occurs have a tropical climate, some of the locations (e.g., Spain and Tunisia) have a Mediterranean or arid climate. This scale could likely establish over much of California. Therefore, *P. psidii* receives a **High (3)** in this category.
  - Low (1) Not likely to establish in California; or likely to establish in very limited areas.
  - Medium (2) may be able to establish in a larger but limited part of California.
  - **High (3) likely to establish a widespread distribution in California.**

- 2) **Known Pest Host Range:** *Pulvinaria psidii* is polyphagous. Therefore, it receives a **High (3)** in this category.
- Low (1) has a very limited host range.
  - Medium (2) has a moderate host range.
  - **High (3) has a wide host range.**
- 3) **Pest Reproductive and Dispersal Potential:** *Pulvinaria psidii* is reported to have multiple generations per year and it is parthenogenetic. It is often intercepted on plant material, so that is a likely mechanism for artificial dispersal. In addition, it retains the ability to walk throughout its immature stages (Von Ellenrieder, pers. comm.). Therefore, it receives a **High (3)** in this category.
- Low (1) does not have high reproductive or dispersal potential.
  - Medium (2) has either high reproductive or dispersal potential.
  - **High (3) has both high reproduction and dispersal potential.**
- 4) **Economic Impact.** This scale is reported to be a pest of various crops. Infestations could increase production costs, and washing may be necessary to remove sooty mold on fruit. Therefore, it receives a **Medium (2)** in this category.

**Economic Impact: B, D**

- A. The pest could lower crop yield.
- B. The pest could lower crop value (includes increasing crop production costs).**
- C. The pest could trigger the loss of markets (includes quarantines).
- D. The pest could negatively change normal cultural practices.**
- E. The pest can vector, or is vectored, by another pestiferous organism.
- F. The organism is injurious or poisonous to agriculturally important animals.

G. The organism can interfere with the delivery or supply of water for agricultural uses.

**Economic Impact Score: Medium**

– Low (1) causes 0 or 1 of these impacts.

– **Medium (2) causes 2 of these impacts.**

– High (3) causes 3 or more of these impacts.

5) **Environmental Impact.** Infestations of *P. psidii* could affect ornamental street plantings and gardens and could trigger treatments. Therefore, *P. psidii* receives a **High (3)** in this category.

**Environmental Impact: D, E**

A. The pest could have a significant environmental impact such as lowering biodiversity, disrupting natural communities, or changing ecosystem processes.

B. The pest could directly affect threatened or endangered species.

C. The pest could impact threatened or endangered species by disrupting critical habitats.

**D. The pest could trigger additional official or private treatment programs.**

**E. The pest significantly impacts cultural practices, home/urban gardening or ornamental plantings.**

**Environmental Impact Score: High (3)**

– Low (1) causes none of the above to occur.

– Medium (2) causes one of the above to occur.

– **High (3) causes two or more of the above to occur.**

**Consequences of Introduction to California for *Pulvinaria psidii*: High (14)**

Add up the total score and include it here.

–Low = 5-8 points

–**Medium = 9-12 points**

–High = 13-15 points

6) **Post Entry Distribution and Survey Information:** *Pulvinaria psidii* is established in five counties in California that represent the San Francisco Bay area and coastal southern California. It receives a **Medium (-2)** in this category.

–Not established (0) Pest never detected in California, or known only from incursions.

–Low (-1) Pest has a localized distribution in California, or is established in one suitable climate/host area (region).

–**Medium (-2) Pest is widespread in California but not fully established in the endangered area, or pest established in two contiguous suitable climate/host areas.**

–High (-3) Pest has fully established in the endangered area, or pest is reported in more than two contiguous or non-contiguous suitable climate/host areas.

### **Final Score:**

7) The final score is the consequences of introduction score minus the post entry distribution and survey information score: Medium (12)

### **Uncertainty:**

No reports were found of *P. psidii* having significant impacts in California, so the potential impacts assessed in this proposal may be overestimated. This scale may be more widely established in California than is currently known.

### **Conclusion and Rating Justification:**

*Pulvinaria psidii* is established in five counties in central and southern California; it is not known to be having an impact and eradication is not considered feasible. While it is “B”-rated, finds in nurseries (a common occurrence in California) have a regulatory impact. For these reasons, a “C” rating is justified.

## References:

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### **Responsible Party:**

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**\*Comment Period: 03/29/2023 – 05/13/2023**

### **\*NOTE:**

You must be registered and logged in to post a comment. If you have registered and have not received the registration confirmation, please contact us at [permits\[@\]cdfa.ca.gov](mailto:permits[@]cdfa.ca.gov).

### **Comment Format:**

- ❖ Comments should refer to the appropriate California Pest Rating Proposal Form subsection(s) being commented on, as shown below.

### **Example Comment:**

Consequences of Introduction: 1. Climate/Host Interaction: [Your comment that relates to “Climate/Host Interaction” here.]

- ❖ Posted comments will not be able to be viewed immediately.
- ❖ Comments may not be posted if they:

Contain inappropriate language which is not germane to the pest rating proposal;

Contains defamatory, false, inaccurate, abusive, obscene, pornographic, sexually oriented, threatening, racially offensive, discriminatory or illegal material;

Violates agency regulations prohibiting sexual harassment or other forms of discrimination;

Violates agency regulations prohibiting workplace violence, including threats.

- ❖ Comments may be edited prior to posting to ensure they are entirely germane.
- ❖ Posted comments shall be those which have been approved in content and posted to the website to be viewed, not just submitted.

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**Proposed Pest Rating: C**