CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Proposal

Arocatus melanocephalus (Fabricius): elm seed bug

Hemiptera: Lygaeidae

Current Rating: Q

Proposed Rating: C

Comment Period: 04/15/2026-05/30/2026

Initiating Event:

Arocatus melanocephalus is widely established in the western United States. It has been intercepted at the border in California. It has not been assessed in the pest rating proposal system. Therefore, a pest rating proposal is needed.

History & Status:

Background: Adult *Arocatus melanocephalus* emerge from their overwintering sites in the spring (March, in Italy) and lay eggs (May, in Italy) on elm (*Ulmus* species) leaves, fruit (samaras), and flower cups (Davis, 2017; Ferracini and Alma, 2008). Nymphs and adults feed on elm leaves and seeds (Davis, 2017; Ferracini and Alma, 2008; Myrkassimova et al., 2022). There is one generation per year and the adult is the overwintering stage (Myrkassimova et al., 2022).

Accounts of the damage inflicted by *A. melanocephalus* feeding is variable, but most accounts suggest it is “negligible” (Davis, 2017). However, according to Myrkassimova et al. (2022), feeding by adults causes holes in, and deformation and drying of leaves (“serious” damage).

This insect was also reported on *Alnus*, *Platanus orientalis*, and *Quercus*, but it is not known if feeding occurred in these cases (Protić, 2001 in Gao et al., 2013; Wachmann et al., 2007 in Kment et al., 2013).

Maw and Naing (2021) reported *A. melanocephalus* to be a pest of plants in the family Cucurbitaceae. No other reports of this insect feeding on Cucurbitaceae were found (Achaempong et al., 2016). If this insect has a tendency to feed on cucurbitaceous plants, there would presumably be additional reports of this occurring somewhere in its extensive distribution. Otherwise, it is not known to be an agricultural pest.

Arocatus melanocephalus is often described as a "nuisance" pest. For example, it enters (e.g., through gaps in window frames) buildings in Utah (Davis, 2017). Large numbers were reported in a home in Canada and in apartments (in close proximity to elm trees) in the Netherlands (Achaempong et al., 2016; Mulder, 2021).

Worldwide Distribution: *Arocatus melanocephalus* is reported from: **Asia:** Widespread, including China, Kazakhstan; **Europe:** Widespread, including Germany, Italy, Netherlands; **North America:** Canada, United States (Idaho, Oregon, Utah, Washington), Canada (British Columbia) (Achaempong et al., 2016; Davis, 2017; Ferracini and Alma, 2008; Gao et al., 2013; Mulder, 2021; Myrkassimova et al., 2022; Stern, 2022). Research-grade citizen scientist reports from Arizona, California, Oregon, Utah, Washington, and other states are present on iNaturalist (iNaturalist).

Official Control: *Arocatus melanocephalus* is USDA-reportable.

California Distribution: *Arocatus melanocephalus* is not represented by any official records from California. However, there are research-grade reports on iNaturalist from southern California (iNaturalist).

California Interceptions: *Arocatus melanocephalus* has been intercepted hitchhiking on a variety of materials, including wood and soil, from western and central states, including Arizona, Colorado, Idaho, Iowa, Nevada, Oregon, Texas, Utah, and Wyoming at border stations in California (California Department of Food and Agriculture).

The risk *Arocatus melanocephalus* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** *Arocatus melanocephalus* feeds on elms, which are commonly-planted trees in California. Based on the apparently widespread distribution of this bug in the western United States, it is likely capable of establishing over much of California. Therefore, it 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:** It is not clear that *A. melanocephalus* feeds on plants other than *Ulmus* species. Therefore, it receives a **Low (1)** 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:** *Arocatus melanocephalus* can presumably fly. Therefore, it receives a **Medium (2)** 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:** *Arocatus melanocephalus* appears to mainly be a nuisance pest. Presumably, if it was causing significant impacts to elm trees in the western United States, where it appears to be widespread, such impacts would be reported. This bug is listed as reportable by the USDA, although the widespread distribution in the western United States suggests it may not be for long. Therefore, it receives a **Low (1)** in this category.

Economic Impact: C

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: Low

– 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:** *Arocatus melanocephalus* is likely limited to *Ulmus* species, which are not native to California. Although it does feed on these trees, it does not appear to be having significant impacts on them in the western United States. The most plausible impact is likely

treatment by homeowners to control aggregations of this bug in and around homes, which could be a nuisance. Therefore, *A. melanocephalus* receives a **Medium (2)** in this category.

Environmental Impact: D

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: Medium (2)

– 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 *Arocatus melanocephalus*: Medium (9)

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:** Although there are research-grade iNaturalist reports of *Arocatus melanocephalus* in California, and these reports along with the numerous reports in neighboring states together suggest that the species is present in California, there are no official records of it here. It receives a **Not established (0)** 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 (9)

Uncertainty:

It is very likely that *A. melanocephalus* is present in California. There is some uncertainty regarding the host range of this bug, but this uncertainty is mainly limited to the report on Cucurbitacea in one publication.

Conclusion and Rating Justification:

Arocatus melanocephalus is frequently intercepted at the border in California, and action is taken based on these interceptions because the rating is currently "Q." However, this insect is already established in the western United States, very likely including California, and there is an almost complete lack of evidence of it causing significant impacts to agriculture or the environment. For these reasons, a "Q," "A," or "B" rating appears unjustified and not likely to serve a protective function, though it does have an impact on commerce. For these reasons, a "C" rating is justified.

References:

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Responsible Party:

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***Comment Period: 04/15/2026-05/30/2026**

***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.

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.

Proposed Pest Rating: C