

## California Pest Rating Proposal

### *Brachynotocoris puncticornis* Reuter: a bug

Hemiptera: Miridae

Current Rating: Q

Proposed Rating: C

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Comment Period: **06/04/2024 – 07/19/2024**

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#### Initiating Event:

*Brachynotocoris puncticornis* was found on raywood ash (*Fraxinus oxycarpa*) in a residential area in Mendocino County in 2023 (California Department of Food and Agriculture). A pest rating proposal is needed.

#### History & Status:

**Background:** *Brachynotocoris puncticornis* has been found on a variety of plants, including *Astrodacus orientalis* (Umbelliferaceae), almond (Rosaceae), *Hibiscus esculentus* (Malvaceae), and *Eragrostis poaides* (Poaceae). Some or all of these may be legitimate hosts, but evidence of feeding was not found. Ash (*Fraxinus* species) appears to be considered the primary host, including the species *F. oxycarpa* and *F. rotundifolia* (Linnavuori and Modarres, 1999; Tolga and Yoldaş, 2019; Ghahari et al., 2008; Yazici and Yildirim, 2017). In New York, *B. puncticornis* was found on *F. oxycarpa* (European ash) but not on native ash trees (Wheeler and Henry, 1980).

The female lays eggs in twigs and the eggs overwinter. In New York, hatching occurs in July. Feeding causes chlorotic spots on leaves (Wheeler and Henry, 1980).

**Worldwide Distribution:** **Africa:** Morocco, Tunisia; **Asia:** Armenia, Iran, Turkey; **Europe:** Bulgaria, France, Germany, Hungary, Italy, Moldavia, The Netherlands, Portugal, Romania, Spain, Turkey, Ukraine, United Kingdom; **North America:** United States (California, New York, Utah); **South America:** Argentina (California Department of Food and Agriculture, 2024; Carpintero et al., 2019; Ghahari et al., 2008; Knight, 1968; Linnavuori and Modarres, 1999; Tolga and Yoldaş, 2019; Wheeler and Henry, 1980; Widgery and Nau, 2009).

**Official Control:** *Brachynotocoris puncticornis* is not known to be under official control.

**California Distribution:** *Brachynotocoris puncticornis* was found on raywood ash (*Fraxinus oxycarpa*) in a residential area in Mendocino County in 2023 (California Department of Food and Agriculture, 2024). Apparently correctly-identified reports of this species from San Mateo, Los Angeles, and other counties in California are present on the web site iNaturalist (iNaturalist, 2024).

**California Interceptions:** *Brachynotocoris puncticornis* was found on *F. oxycarpa* at two nurseries in Riverside County in 2013 (California Department of Food and Agriculture, 2024).

The risk *Brachynotocoris puncticornis* poses to California is evaluated below.

### **Consequences of Introduction:**

1) **Climate/Host Interaction:** Based on its reported distribution, *B. puncticornis* appears to tolerate a range of climates, including temperate and Mediterranean. One of its reported hosts, *F. oxycarpa*, appears to be a common street or ornamental tree in California. Native ash species are widespread in California but (as shown by the host specificity seen in New York) their host status is uncertain. Therefore, *B. puncticornis* 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:** *Brachynotocoris puncticornis* is reported to occur on plants in a few families, although feeding may be limited to ash (*Fraxinus* species). Therefore, it receives a **Medium (2)** 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:** *Brachynotocoris puncticornis* can probably 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.** This bug is reported to cause chlorotic spots on the leaves of its host plants. This could impact production and sale of ash trees. Although the literature suggests the possibility that plants other than ashes may be hosts, the widespread distribution in the Mediterranean coupled with the lack of reports of impacts to food crops suggests that food crops also present in the Mediterranean of the Old World are unlikely to be impacted in California. Therefore, it receives a **Medium (2)** in this category.

#### **Economic Impact: A, B**

**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.** This bug could impact foliage in ornamental plantings and may trigger treatments. Therefore, *B. puncticornis* 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 *Brachynotocoris puncticornis*:

### Medium (12)

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:** *Brachynotocoris puncticornis* is present in Mendocino County, California. Reports on the web site iNaturalist suggest it is more widespread in the state. It receives a **Low (-1)** 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 (11)

### Uncertainty:

There is uncertainty regarding the breadth of the host range of this insect. Limited evidence suggests it only feeds on particular species of ash. If it is able to feed on native ash species, it could have an impact on native California trees. However, even if this is so, evidence was not found in the literature of significant impacts (i.e., more than chlorosis of leaves) to host plants resulting from feeding.

## Conclusion and Rating Justification:

*Brachynotocoris puncticornis* appears likely to only feed on ash trees and only certain ash species. It does not appear likely to cause significant impacts to ash apart from chlorosis on leaves. It is already present in Mendocino County and likely elsewhere in the state as well. For these reasons, a “C” rating is justified.

## References:

California Department of Food and Agriculture. Accessed May 15, 2024.

Carpintero, D. L., Farina, J. L., De Biase, S. 2019. Reporte para la Provincia de Buenos Aires de tres especies de Heteroptera (Hemiptera) introducidas en Argentina. *Historia Natural* 9:63-70.

Ghahari, H., Chérot, F., Ostovan, H., Sakenin, H. 2008. Heteroptera from rice fields and surrounding grasslands of northern Iran (Insecta), with special emphasis on predator species. *Journal of the Entomological Research Society* 10:13-25.

Knight, H. H. 1968. Taxonomic review: Miridae of the Nevada Test Site and the western United States. *Brigham Young University Science Bulletin, Biological Series* 9:1-282.

Linnavuori, R. E., Modarres, M. 1999. Studies on the Heteroptera of the Khorasan province in N.E. Iran. II. Cimicimorpha: Miridae. *Entomologica Fennica* 10:107-231.

Tolga, M. F., Yoldaş, Z. 2019. Hemiptera species determined in almond orchards in Mugla and Manisa provinces of Turkey and population fluctuation of *Monosteira unicastata* (Hemiptera: Tingidae). *Akademik Ziraat Dergisi* 8:209-216.

Wheeler, A. G., Jr., Henry, T. 1980. *Brachynotocoris heidemanni* (Knight), a junior synonym of the Palearctic *B. puncticornis* Reuter and pest of European ash. *Proceedings of the Entomological Society of Washington* 82:568-575.

Widgery, J., Nau, B. 2009. *Brachynotocoris puncticornis* pre-dating 1st British record. *Het News* 14:6.

Yazici, G., Yildirim, E. 2017. Preferred host plants species by Miridae (Hemiptera: Heteroptera) species in Erzurum Province of Turkey. *Entomofauna* 38:193-212.

## Responsible Party:

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**\*Comment Period: 06/04/2024 – 07/19/2024**

**\*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**