CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE

California Pest Rating Profile for

***Callidiellum rufipenne* (Motschulsky): cedar longhorn beetle**

Coleoptera: Cerambycidae

Previous Pest Rating: Q

Pest Rating: A as of 07/23/2022

Comment Period: 06/08/2022 – 07/23/2022

Initiating Event:

Callidiellum rufipenne has been intercepted numerous times in wood packing material. It has not yet been rated. A pest rating proposal is needed.

History & Status:

Background: Female *Callidiellum rufipenne* lay eggs in cracks in the bark of their host trees. Larvae tunnel under the bark and feed on phloem and cambium (Smaller Japanese cedar longhorn beetle). This beetle is reported to usually have one generation per year (Đukić and Rapuzzi, 2020). It appears to be limited to the Cupressaceae. Reported hosts (living) include *Thuja occidentalis*, *Juniperus scopulorum*, and *Chamaecyparis obtuse* (Maier, 2007). It is reported that weakened or freshly-cut trees are typically attacked (Đukić and Rapuzzi, 2020). Shibata (1994) stated that this beetle "cannot attack and complete normal development in a healthy tree." It has been reared from dead specimens of *Chamaecyparis thyoides*, *C. pisifera*, *Cryptomeria japonica*, *Juniperus communis*, and *J. virginiana* (Maier, 2007). It was found emerging from dead logs of *Thuja occidentalis* in Connecticut, United States and dead branches of *Cupressus macrocarpa* in Argentina (Maier, 2008; Turienzo, 2007). *Callidiellum rufipenne* has not been reported to have economic impacts.

Worldwide Distribution: *Callidiellum rufipenne* is Native to eastern Asia. It is reported from: **Asia:** Japan; **Europe:** Belgium, Bosnia and Herzegovina, Italy, Slovenia; **North America:** United States (from Massachusetts to North Carolina); **South America:** Argentina (Campadelli and Sama, 1988; Drumont et al., 2014; Đukić, and Rapuzzi, 2020; Iwata et al., 2007; Maier, 2008; Turienzo, 2007).

Official Control: *Callidiellum rufipenne* is on the A1 list for Brazil (EPPO global database).

California Distribution: *Callidiellum rufipenne* is not known to be established in California (California Department of Food and Agriculture).

California Interceptions: *Callidiellum rufipenne* has been intercepted numerous times in wood packing material (California Department of Food and Agriculture).

The risk *Callidiellum rufipenne* poses to California is evaluated below.

Consequences of Introduction:

1) **Climate/Host Interaction:** There is one native California species in each of the known host genera *Chamaecyparis* and *Thuja* and there are other species in the family Cupressaceae in California that could potentially be hosts. This beetle occurs in areas with a temperate climate. It may be able to establish in northern California. Therefore, it receives a **Medium (2)** 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:** *Callidiellum rufipenne* is apparently limited to the family Cupressaceae. 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:** *Callidiellum rufipenne* could be moved with infested plant material, including greenwaste. It presumably can 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:** No reports were found of *C. rufipenne* having economic impacts. It is regulated by Brazil, and the presence of this beetle in California could result in the loss of markets. 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:** *Calidiellum rufipenne* apparently restricted to the Cupressaceae and could become established in cooler parts of California. California has 22 native species of Cupressaceae (eight of them rare), including coast redwood and giant sequoia, which are iconic symbols of California. Although there is significant uncertainty regarding the ability of this beetle to attack living trees, and even more uncertainty regarding its potential to cause death or significant damage to living hosts (such impacts are not supported by available reports), reports of attacks on living hosts leave open the possibility that impacts are possible, especially in a novel environment (California) and on novel hosts. Therefore, *C. rufipenne* receives a **High (3)** in this category.

Environmental Impact: A, B

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 *Callidiellum rufipenne*: 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:** *Callidiellum rufipenne* is not known to be established in California. 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:

There is some uncertainty regarding the potential for *C. rufipenne* to become established in California. There is a high degree of uncertainty regarding the potential of this species to have environmental impacts. Native California Cupressaceae do not include known host species, although two native species are in host genera. The available evidence suggests that either this beetle does not attack healthy tissue in living plants or that this occurs only in certain situations.

Conclusion and Rating Justification:

Callidiellum rufipenne is a beetle that is not known to be established in California. It appears capable of becoming established in the northern part of the state. It is considered to pose a risk (with a high degree of uncertainty) to Cupressaceae, including rare and culturally-significant trees. For these reasons, an "A" rating is justified.

References:

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Drumont, A., Smets, K., Scheers, K., Thomaes, A., Vandenhoudt, R., and Lodewyckx, M. 2014. *Callidiellum rufipenne* (Motschulsky, 1861) en Belgique: Bilan de sa presence et de son installation sur notre territoire (Coleoptera: Cerambycidae: Cerambycinae). Bulletin de la Société royale belge d'Entomologie/Bulletin van de Koninklijke Belgische Vereniging voor Entomologie 150:239-249.

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Maier, C. T. 2007. Distribution and hosts of *Callidiellum rufipenne* (Coleoptera: Cerambycidae), an Asian cedar borer established in the eastern United States. Journal of Economic Entomology 100:1291-1297.

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Turienzo, P. 2007. New records and emergence period of *Callidiellum rufipenne* (Motschulsky, 1860) [Coleoptera: Cerambycidae: Cerambycinae: Callidiini] in Argentina. Boletín de Sanidad Vegetal, Plagas 33:341-349.

Responsible Party:

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***Comment Period: 06/08/2022 – 07/23/2022**

***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.

Pest Rating: A