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Entomological Society of America
Proposal Form for New Common Name or Change of ESA-Approved Common Name

Complete this form and e-mail to pubs@entsoc.org.
Submissions will not be considered unless this form is filled out completely.

February 20, 2025

Esteemed ESA Common Names Committee members,

As the Chair for the Western Forest Insect Work Conference (WFIWC) Common Names Committee (CNC), I am pleased to present the following insect for your consideration:

Cucujus puniceus Mannerheim -- western red cucujid

This proposal is part of a current effort to update the important publication Western Forest Insects and formalize common names used therein not yet recognized by ESA, or to propose new names for insects WFIWC membership believes warrants a common name. Note that it is being submitted in conjunction with *Cucujus clavipes* Fabricus.

Our committee also works with the Entomological Society of Canada and so you will find entries in our form that are in addition to those you require. All ESA questions are numbered and worded as found on your form.

If you have any questions or concerns about this or other submissions from our organization, we encourage you to contact us.

Sincerely,

/s/ *Brytten Steed*

Brytten Steed
WFIWC-CNC Chair
Brytten.steed@usda.gov

WFIWC Proposal Form for New Common Name or Change of ESA or ESC-Approved Common Name

I ask that the WFIWC Standing Committee on Common Names of Insects facilitate the submission of the following common name or name change to ESA and ESC.

1. Proposed new common name (English): western red cucujid

1b. Proposed new common name in French (optional): None

2. Previously approved ESA common name (if any): None

2b. Previously approved English ESC common name (if any): None

2c. Previously approved French ESC common name (if any)-include direct translation to English: None

3. Scientific name (genus, species, author): *Cucujus puniceus* Mannerheim
Order: Coleoptera
Family: Cucujidae

3b. List important previous scientific names (esp. note if this scientific name is different from that noted in Western Forest Insects or in the literature cited).
Cucujus clavipes Fabricius which included both subspecies *C.c. clavipes* Fabricius (eastern) and *C.c.puniceus* Mannerheim (western) which have both been raised to species status (Lee & Thomas 2011; Kadej et al. 2022).

Supporting Information

4. Please provide a clear and convincing explanation for why a common name is needed, possibly including but not limited to the taxon's economic, ecological, or medical importance, striking appearance, abundance, or conservation status:

There is no ESA approved common name for this insect, nor is there one provided in Western Forest Insects. "Red flat bark beetle" is the name commonly used when referring to *Cucujus clavipes puniceus* in several refereed journal publications. However, this insect is not considered part of the specialized clade of Curculionidae known as "bark beetles". Assigning a common name that excludes this misnomer would serve to eliminate potential confusion.

Cucujus clavipes clavipes and *Cucujus clavipes puncieus* have been considered subspecies of *Cucujus clavipes* for many years. They were considered two separate species, but then combined and classified as subspecies of the same species. Lee and Thomas (2011), suggested, but could not prove inconclusively, that they might be two separate species based on larval morphological characteristics. More recently Kadej and

others (2022) determined, based on morphology and DNA, that the two insects were in fact two separate species and reinstated them from previous identification.

The name "red flat bark beetle" has been used for the eastern subspecies, and therefore now would refer to both the western and the eastern species with the same common name. In addition, there are many publications and websites that refer to the species *Cucujus clavipes* as the northern red flat bark beetle, flat red bark beetle, flat bark beetle, red cucujid, or cucujid beetle, with or without reference or differentiation to subspecies or geographic location.

Flat bark beetle is also a commonly used name for *Silvinus bidentatus* (Fabricius, 1801), a species of silvanid flat bark beetles in the family Silvanidae.

The proposed common name would provide geographic identity to differentiate it from the species *Cucujus clavipes*, which is predominantly found in the eastern half of the United States and Canada. A separate proposal is being submitted to provide a common name for the eastern species.

5. Stage or characteristic to which the proposed common name refers:
"Western" refers to its geographic distribution in the western contiguous United States and Alaska, and Provinces of western Canada. Its characteristic scarlet "red" coloration gives it a standout appearance resulting in an unavoidable inclusion; To the professional and amateur entomologist, "cucujid" gives a quick identity of belonging to the cosmopolitan, polyphagous Family Cucujidae, and differentiate it from bark beetles (Subfamily Scolytinae).

6. Distribution (includes citations):
USA: Alaska to the Pacific Coast (Sformo et al. 2010); Alaska, Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, Utah, Washington (Horak and Chobolt 2009, Lee and Thomas 2011)

Canada: Alberta and British Columbia; (Horak and Chobolt 2009, Lee and Thomas 2011)

7. Principal hosts (include citations):

In Alaska, Carrasco et al. (2011) found "It overwinters primarily as larvae located under the decaying bark of dead poplar trees, either fallen or standing."

The following generalizations were found for *Cucujus clavipes puniceus*:
"beneath the bark of fallen trees" (Sformo et al. 2009).
"Both adults and larvae live under the bark of dying and dead trees." (Horak and Chobolt 2009)

8. Please provide multiple references indicating clearly that the proposed name is already established and ideally widespread in use. If the name has been newly coined for purposes of this application, please state so: No previous use of this name found. The name has been submitted in connection with *Cucujus clavipes* Fabricus.

9. Please identify any common names in use, including those used by indigenous peoples in the insect's area of origin, that have been applied to this taxon, other than the one herein proposed, with references. Please briefly describe the methods used to find alternative names and, if necessary, justify why each alternate name is inadequate: *(This entry is for English language names.)*

Red Flat Bark Beetle:

Carrasco, M.A.; Buechler S.A.; Arnold, R.J.; Sformo T.; Barnes, B.M.; Duman, J.G. 2011. Elucidating the biochemical overwintering adaptations of larval *Cucujus clavipes puniceus*, a nonmodel organism, via High Throughput Proteomics. J. Proteome Res. 2011, 10: 4634-4646. https://pubs.acs.org/doi/pdf/10.1021/pr200518y

Carrasco, M.A. III. 2012. Elucidating the biochemical overwintering adaptions of larval *Cucujus clavipes puniceus* and *Cucujus clavipes clavipes*, non-model organisms, via High Throughput Proteomics (Doctoral dissertation, University of Notre Dame). Retrieved from https://curate.nd.edu/downloads/n009w091c4m

Evans, A.V.; Hogue, J.N. 2006. Field Guide to Beetles of California. California Natural History Guide series no. 88. University of California Press, Berkeley and Los Angeles, CA. 432 p.

Sformo, T.; Walters, K.; Jeannet, K.; Wowk, B.; Fahy, G.M.; Barnes, B.M.; Duman, J.G. 2010. Deep supercooling, vitrification and limited survival to –100°C in the Alaskan beetle *Cucujus clavipes puniceus* (Coleoptera: Cucujidae) larvae. J. Exp. Biol. 2013, 502-509. https://jeb.biologists.org/content/213/3/502.full

BugGuide - http://bugguide.net/node/view/7531

Smithsonian - https://www.si.edu/object/red-flat-bark-beetle-red-cucujid:nmnheducation_10001848

Wikipedia - https://en.wikipedia.org/wiki/Cucujidae

Flat red bark beetle

https://www.whatsthatbug.com/2010/11/05/flat-red-bark-beetle/

Wikipedia - https://en.wikipedia.org/wiki/Cucujidae

Flat bark beetle

http://www.psu.edu/dept/nkbiology/naturetrail/speciespages/flat_bark_beetle.html

Red cucujid

Arnett, R.H. 2000. American insects, a handbook of the insects of America north of Mexico, 2nd ed. 1001 p. CRC Press.

Idaho Species <ID Official Gov. Website>: https://idfg.idaho.gov/species/observations/list?species_id=33185

Smithsonian - https://www.si.edu/object/red-flat-bark-beetle-red-cucujid:nmnheducation_10001848

Cucujid beetle

Duman, J. G. 1984. Change in the overwintering mechanism of the cucujid beetle, *Cucujus clavipes*. J. Insect. Physiol. 30: 235-239. http://www.sciencedirect.com/science/article/pii/0022191084900088

Northern red flat bark beetle

https://sydkab.com/tag/red-flat-bark-beetle/

9b. References using common names in a non-English language (give the common name in the non-English language and give the direct translation to English, if possible): None found

10. Please identify any other organisms to which your proposed common name could apply, giving careful consideration to closely related taxa. Please justify why the proposed common name is (i) unsuitable for each of those taxa and/or (ii) better suited for the proposed taxon: No other organisms identified

10 b. List references cited in questions 6-10:

Arnett, R.H. 2000. American insects, a handbook of the insects of America north of Mexico, 2nd ed. 1001 p. CRC Press.

Bennet, V.A., Sformo, T., Walters, K., Toien, O., Jeannet, K., Hochstrasser, R., Qingfeng, P., Serianni, A.S., Barnes, B.M., and Duman, J.G. 2005. Comparative overwintering physiology of Alaska and Indiana populations of the beetle *Cucujus clavipes* (Fabricius): roles of antifreeze proteins, polyols, dehydration and diapause. J. Exp. Biol. 208: 4467-4477.

Carrasco, M.A. III. 2012. Elucidating the biochemical overwintering adaptions of larval *Cucujus clavipes puniceus* and *Cucujus clavipes clavipes*, non-model organisms, via High Throughput Proteomics (Doctoral dissertation, University of Notre Dame). Retrieved from https://curate.nd.edu/downloads/n009w091c4m

Carrasco, M.A.; Buechler S.A.; Arnold, R.J.; Sformo T.; Barnes, B.M.; Duman, J.G. 2011. Elucidating the biochemical overwintering adaptations of larval *Cucujus clavipes puniceus*, a nonmodel organism, via High Throughput Proteomics. J. Proteome Res. 2011, 10: 4634-4646. https://pubs.acs.org/doi/pdf/10.1021/pr200518y

Carrasco, M.A.; Buechler S.A.; Arnold, R.J.; Sformo T.; Barnes, B.M.; Duman, J.G. 2012. Investigating the deep supercooling ability of an Alaskan beetle, *Cucujus*

clavipes puniceus, via high throughput proteomics. J Proteomics, 75(4): 1220-1234. https://www.sciencedirect.com/science/article/pii/S1874391911005446

Duman, J. G. 1984. Change in the overwintering mechanism of the cucujid beetle, *Cucujus Clavipes*. J. Insect. Physiol. 30: 235-239. http://www.sciencedirect.com/science/article/pii/0022191084900088

Evans, A.V.; Hogue, J.N. 2006. Field Guide to Beetles of California. California Natural History Guide series no. 88. University of California Press, Berkeley and Los Angeles, CA. 432 p.

Horak, J.; Chobolt, K. 2009. Worldwide distribution of saproxylic beetles of the genus Cucujus Fabricius 1775 (Coleoptera: Cucujidae) *in* Buse, J.; Alexander, K.N.A.; Ranius, T., Assmann, T. (Eds.) 2009. Saproxylic Beetles - their role and diversity in European woodland and tree habitats. *Proceedings of the 5th Symposium and Workshop on the Conservation of Saproxylic Beetles*, pp. 189-206 https://www.researchgate.net/profile/Jakub-Horak-3/publication/228652670_Worldwide_distribution_of_saproxylic_beetles_of_the_genus_Cucujus_Fabricius_1775_Coleoptera_Cucujidae/links/5425ce580cf238c6ea77830a/Worldwide-distribution-of-saproxylic-beetles-of-th

Kadej, M; Zajac, K., Gutowski, J., Joworski, T., Plewa, R., Ruta, R., Sikora, K., Smolis, A., Magoga, G., Montagna, M., Eckelt, A., Birkemoe, T., Bonacci, T., Brandmayr, P., Heibl, C., Cizek, L., Daveus, S.A., Fuchs, L., Horak, J., Kapla, A., Kulijer, D., Merkl, O., Muller, J., Noordijk, J., Saluk, S., Sverdrup-Thygeson, A., Vrezec, A., Kajtoch, L. 2022. Disentangling phylogenetic relations and biogeographic history within the *Cucujus haematodes* species group (Coleptera:Cuccujidae). Molercular Phylogenetics and Evolution 173 (32022) 107527. https://doi.org/10.1016/j.ympev.2022.107527

Lee, J.; Thomas, M.C. 2011. Clarification of the taxonomic status of *Cucujus clavipes* with descriptions of the larvae of *C. C. Clavipes and C. C. Puniceus* (Coleoptera: Cucujidae). Fla. Entomol. 94(2): 145-150. https://www.jstor.org/stable/23048008?seq=1#metadata_info_tab_contents or Clarification of the Taxonomic Status of Cucujus clavipes with Descriptions of the Larvae of C. C. Clavipes and C. C. Puniceus (Coleoptera: Cucujidae) (bioone.org)

Sformo, T.; Walters, K.; Jeannet, K.; Wowk, B.; Fahy, G.M.; Barnes, B.M.; Duman, J.G. 2010. Deep supercooling, vitrification and limited survival to –100°C in the Alaskan beetle *Cucujus clavipes puniceus* (Coleoptera: Cucujidae) larvae. J. Exp. Biol. 2013: 502-509. https://jeb.biologists.org/content/213/3/502.full

Smith, D.B.; Sears, M.K. 1982. Mandibular structure and feeding habits of three morphologically similar coleopterous larvae: *Cucujus clavipes* (Cucujidae),

Dendroides canadensis (Pyrochroidae), and *Pytho depressus* (Salpingidae). Can. Entomol., Vol. 114, Issue 2, pp. 173-175. https://doi.org/10.4039/Ent114173-2

Various websites including:

http://bugguide.net/node/view/7531
https://www.si.edu/object/red-flat-bark-beetle-red-cucujid:nmnheducation_10001848
https://www.whatsthatbug.com/2010/11/05/flat-red-bark-beetle/
https://www.ipmimages.org/browse/detail.cfm?imgnum=5380053
https://sydkab.com/tag/red-flat-bark-beetle/
https://idfg.idaho.gov/species/observations/list?species_id=33185
https://en.wikipedia.org/wiki/Cucujidae
https://en.wikipedia.org/wiki/Silvanus_bidentatus

11. Please document your efforts to consult with entomologists (including taxonomic specialists), colleagues, or other professionals who work with the taxon as to the suitability and need for the proposed common name. Please note that this is an important element of your proposal; proposals that do not document these steps are less likely to be successful:

Sent to the Western Forest Insect Work Conference membership in April 2023 as a proposal for *C. clavipes* (both subspecies combined).

Comments received include the following from **Adam J. Brunke, Research Scientist, Entomology (Coleoptera) / Canadian National Collection of Insects, Arachnids and Nematodes** / Agriculture and Agri-Food Canada / 960 Carling Avenue, K.W. Neatby Building / Ottawa, Ontario, K1A 0C6, Canada (Email: adam.brunke@agr.gc.ca, or adam.j.brunke@gmail.com [for larger files]).

"Just a note regarding the submission for Cucujus that may come up during the ESA submission. There is a complication for this submission because the two subspecies were actually raised to species level recently (see attached paper <Kadej et al. 2022>) and are readily diagnosable as adults and larvae. The authors also found that these taxa were not each other's closest relatives when the world fauna was considered. I'm not sure what the ESA committee would recommend but my first thoughts would be that each of these taxa (regardless of whether you call them species or subspecies) should have a unique common name."

Additional reviewed by a number of Forest Health professional entomologists of the Common Names Committee of Western Forest Insect Work Conference including:

- Iral Ragenovich, Forest Entomologist, USDA Forest Service, Pacific Northwest Region
- Brytten Steed, Forest Entomologist, USDA Forest Service, Northern Region
- Celia Boon, Research Forest Entomologist, Ministry of Forests, British Columbia
- Richard Hofstetter, Professor of Forest Entomology, Associate Director of the School of Forestry / Graduate Coordinator of the School of Forestry, Northern Arizona University

11b. What type of literature searches/checks did you conduct (e.g. CABI, ESA and ESC web pages, USDA FS library, formal library search engine-list, etc.)

Search on ESA Common Names site (https://entsoc.org/publications/common-names) to determine if this species had a common name, if the common name belonged to another species.

Review of the ESC Common Names site (https://esc-sec.ca/entomology-resources/common-names/) to determine if this species had a common name in either English or French, or if the English common name proposed belonged to another species.

(PDF) Checklist of beetles (Coleoptera) of Canada and Alaska. Second edition | Derek Sikes - Academia.edu

USDA Forest Service Library (research paper requests)

Search of www using the Google and Google Scholar search engines

Personal reference publications

List of citations in #10

12. Proposed by: Western Forest Insect Work Conference group (WFIWC), Common Names Committee Chair – Brytten Steed

Proposal prepared and submitted to the WFIWC CNC by Lee Pederson (retired USDA Forest Service, Forest Entomologist)

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Date: 20 February