

# California Pest Rating Profile for *Cochlicella barbara* (Linnaeus): Small pointed snail Gastropoda: Cochlicellidae Pest Rating: C

Comment Period: 02/05/2025 - 03/22/2025

# **Initiating Event:**

*Cochlicella barbara* is established in five counties in California, from the San Francisco Bay area to coastal southern California, based on official samples. Based on citizen science reports, it is even more widespread in the state. It is currently B-rated. A pest rating proposal is needed.

# **History & Status:**

## **Background:**

*Cochlicella barbara* is reported to feed on dead organic matter and living plants (Khalaf et al., 2020). It is reported to be a pest of wheat and canola in South Africa and to be a grain, canola, and pasture pest in Australia. Regarding grain, the pest impacts include contamination of grain. Damage to canola seedlings is reported (Herbert, 2010; Molet, 2014). It has also been found associated with Swiss chard, squash, and sunflowers (Roth and Hertz, 1997).

In Spain, the following lungworm species known to infect livestock were found in this snail: *Cystocaulus ocreatus, Muellerius capillaris,* and *Neostrongylus linearis* (Morrondo-Pelayo et al., 1992).



Worldwide Distribution: Cochlicella barbara is reported from: Africa: South Africa; Asia: Iraq, Turkey; Europe: Spain, United Kingdom; North America: United States (California) (Al-Doori et al., 2018; Ekin and Şeşen, 2020; Herbert, 2010; Morrondo-Pelayo et al., 1992; Roth and Hertz, 1997; Walker, 2023).

**<u>Official Control</u>**: *Cochlicella barbara* is not under official control.

<u>California Distribution:</u> *Cochlicella barbara* has been found in the environment in Alameda, Monterey, San Diego, San Luis Obispo, and Santa Cruz counties (California Department of Food and Agriculture, 2025). It is also reported from Los Angeles and Orange counties (Vendetti et al., 2018). Based on citizen scientist sightings, it has also been observed in Fresno, Napa, Riverside, San Bernardino, Santa Barbara, Sonoma, and Ventura counties (iNaturalist.org).

<u>California Interceptions</u>: *Cochlicella barbara* was found on plants in a nursery in Ventura County in 2024 (California Department of Food and Agriculture, 2025).

The risk *Cochlicella barbara* poses to California is evaluated below.

# **Consequences of Introduction:**

- Climate/Host Interaction: Cochlicella barbara is reported to feed on dead organic matter and living plants. Food is not expected to be a limiting factor. Much of California is presumed to have a climate suitable to this snail. Therefore, C. barbara 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.
- Known Pest Host Range: Allopeas clavulinum feeds on leaf litter and reportedly a variety of living plants as well. 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:** *Cochlicella barbara* can likely be moved with plant material. 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. Few details were found in agricultural impacts attributed to this snail, but it is clear that it is considered a significant pest, in grain, for example. It is an intermediate host of lungworms that impact livestock. Therefore, it receives a Medium (2) in this category.

### Economic Impact: B, E

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. The presence of this snail in California could possibly impact gardens and trigger treatments. Therefore, *C. barbara* 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 Cochlicella barbara: High (13)

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:** *Cochlicella barbara* is not known to be established in the environment in 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: 11 (Medium)

# **Uncertainty:**

There is uncertainty regarding the distribution of this snail in California. It may be present in additional counties in the state. There is also uncertainty regarding potential impacts to agriculture.

# **Conclusion and Rating Justification:**

*Cochlicella barbara* is a snail that is reported to be a pest of agriculture. It is widespread in California but reports have not been found of impacts in the state. For these reasons, a "C" rating is justified.

# **References:**

Al-Doori, N., Al-Doori, M., and Al-Juburi, H. Q. 2018. A first record and developmental stages of an exotic species *Cochlicella barbara* (Linnaeus, 1758) (Gastropoda-Cochlicellidae) in Iraq Baghdad. Journal of Global Pharma Technology 10:104-107.

California Department of Food and Agriculture. Pest and damage record database. Accessed January 3, 2025: https://pdr.cdfa.ca.gov/PDR/pdrmainmenu.aspx

Ekin, I., and Şeşen, R. 2020. First record of the pest and parasitic intermediate host snail *Cochlicella barbara* (Linnaeus, 1758) in the south-eastern Anatolia. International Journal of Agriculture Environment and Food Science 4:57-61.



Herbert, D. G. 2010. The introduced terrestrial Mollusca of South Africa. South African National Biodiversity Institute, Pretoria.

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Khalaf, M. Z., Tareq, A. M., Nahar, F. H., Salman, A. H., and Hamza, B. H. A. 2020. Some aspects of banded conical snail *Cochlicella barbara*: Linnaeus, 1758 (Gastropoda: Cochlicellidae). Biochemical and Cellular Archives 20:1479-1484.

Molet, T. 2014. CPHST Pest Datasheet for *Cochlicella* spp. USDA-APHIS-PPQ-CPHST. Accessed January 15, 2025: https://download.ceris.purdue.edu/file/2552

Morrondo-Pelayo, P., Diez-Baños, P., Mezo-Menendez, M., Diez-Baños, N., Flores-Calvete, G. 1992. Natural infection of *Cochlicella barbara* (Mollusca) by Protostrongylidae (Nematoda) in paddocks with different grass heights in the northwest of Spain: Periods of risk for the definitive hosts. Annales de Parasitologie Humaine et Comparée 67:180-187.

Roth, B., and Hertz, C. M. 1997. Recent records of *Cochlicella barbara* (Linnaeus, 1758) (Hygromiidae) in southern and central California. The Festivus 9:81-83.

Vendetti, J. E., Lee, C., LaFollette, P., and citizen science participants in SLIME and BioSCAN. 2018. Five new records of introduced terrestrial gastropods in southern California discovered by citizen science. American Malacological Bulletin 36:232-247.

Walker, T. 2023. The introduction of *Cochlicella acuta* and *Cochlicella barbara* into Britain and the extinction of *Xerocrassa geyeri* in Cornwall. Journal of Conchology 44:563-573.

# **Responsible Party:**

Kyle Beucke (see comment regarding authorship above, in Background), 1220 N Street, Sacramento, CA 95814, 916-698-3034, permits[@]cdfa.ca.gov

# \*Comment Period: 02/05/2025 - 03/22/2025

## **\*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: C