

California Pest Rating Profile for

Carduus pycnocephalus: Italian thistle

Family: Asteraceae

Pest Rating: C

Seed Rating: R

Comment Period: 08/05/2024 through 09/19/2024

Initiating Event:

This plant has been included on the CDFA noxious weed list. A recent sample received by the CDFA Botany Laboratory received a temporary “Q” rating.

History & Status:

General Description

Italian thistle is an erect annual with prickly winged stems and leaves. Plants exist as basal rosettes until flowering shoots develop at maturity (USDA Plants, 2024). It was first recorded from California in 1920 (California Consortium of Herbaria, 2024). It occupies disturbed open areas, roadsides, pastures, annual grasslands, and waste areas that consist of sandy to clay soils. (UCIPM, 2024). Although distinct, it closely resembles *C. tenuiflorus* and some published records of Italian thistle are probably *C. tenuiflorus* and vice versa (Baldwin et al., 2014). Italian thistle is more common in northern California and *C. tenuiflorus* is more common in southern California. Although the degree of spininess and tough versus brittle stems have been used as diagnostic characters to differentiate the two species, neither characteristic is fully practical (FNA Editorial Committee, 1993+). Italian thistle tends to have few (1-4) flower heads on the terminal stem while *C. tenuiflorus* has 3-12. The phyllaries of flower heads in Italian thistle have notable arachnoid hairs, while the phyllary hairs of *C. tenuiflorus* are short.

Worldwide Distribution

Italian thistle is native to the Mediterranean to Western India. It is reported as naturalized and as an environmental weed in Australia, New Zealand, Macaronesia, South Africa, the Arabian Peninsula, South America, Hawaii, and North America (Bugwoodi, 2024).

Official Control

Italian thistle has been listed on the CDFA noxious weed list. It also is listed as a noxious weed in Arkansas, Iowa, Oregon, and Washington.

California Distribution

Italian thistle is widespread throughout lowland California in full to partial sun, where it is found in more than 50 counties (CalFlora, 2024).

California Interceptions

Vouchers have been submitted to CDFA for identification, including those from Sacramento, San Diego, Shasta, and Trinity (CCH2, 2024).

Consequences of Introduction

1) Climate/Host Interaction:

The plant has had multiple introductions into North America. It has already invaded much of California. Therefore, Italian thistle 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: Score is High (3)

Italian thistle can occur wherever general ecological conditions exist that are conducive to its survival.

- Low (1) has a very limited host range
- Medium (2) has a moderate host range
- **High (3) has a wide host range**

3) Pest Dispersal Potential: Score is Medium (2)

Italian thistle produces via numerous achenes (“seeds”) that can spread via their parachute-like pappus. The seed bank is moderately persistent. Italian thistle 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:

Italian thistle can lower range productivity, land value, and can trigger state quarantines. It can serve as a fire carrier (CABI Digital Library, 2024). Its spininess can lead to injury to livestock. Italian thistle receives a **High (3)** in this category.

- 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:

- 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 plant can dominate grassland, excluding native plants and lowering biodiversity. Rare taxa that might be affected include grassland species such as showy Indian clover (*Trifolium amoenum*) and CA filaree (*California macrophylla*), and CA tiger salamander (*Ambystoma californiense*). The native Painted Lady Butterfly (*Vanessa cardui*), attacks *Carduus* species and several other thistles, including some native thistles. Numbers of butterfly larvae, however, are rarely large enough to reduce the population size of non-native species. Italian thistle is likely to trigger chemical treatments by ranchers and land managers. Therefore, Italian thistle receives a High (3) in this category.

Environmental Impact: A, C, 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: 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.**

The consequences of introduction to California for Italian thistle is **High (14)**

Low = 5-8 points

Medium = 9-12 points

High = 13-15 points

6) Post Entry Distribution and Survey Information: Score is High (-3)

- 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.**
-

7) Final Score: Medium (14-3=11)

Conclusion and Rating Justification:

Italian thistle is a CCR section 4500 listed Noxious Weed in CA, but its widespread distribution and the minimal effect of any regulatory action on its distribution and spread indicate that a **C rating** is appropriate.

Uncertainty: Italian thistle is a well-established weed in California. Uncertainty is low.

References

Bugwoodi. 2024.

https://wiki.bugwood.org/Carduus_pycnocephalus#:~:text=Carduus%20pycnocephalus%2C%20a%20vigorous%20annual%20thistle%2C%20arrived%20in,cultivation%2C%20and%20grazing%20are%20all%20effective%20control%20measures Accessed July 7, 2024

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. The Jepson manual: vascular plants of California, second edition. University of California Press, Berkeley.

CABI Digital Library 2024. <https://www.cabidigitallibrary.org/doi/10.1079/cabicompendium.11260> Accessed July 3, 2024

Calflora. 2024. Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals. Accessed: March 12, 2024
<https://www.calflora.org/app/taxon?crn=1504>

Consortium of California Herbaria (CCH2). 2024. Data provided by the participants of the CCH. Regents of the University of California 2024. Accessed: March 12, 2024
<http://ucjeps.berkeley.edu/consortium/>

FNA Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 25+ vols. New York and Oxford.

Gaskin, John F., Coombs, E., Kelch, D. G., Keil, D. J., & Porter, M. 2019. *Carduus cinereus* (Asteraceae) – New to North America. Madroño, Volume 66: pp. 142-147.

UCIPM, 2024. University of California Agriculture and Natural Resources: Statewide Integrated Pest Management Program. Italian thistle (*Carduus pycnocephalus*). Accessed: March 12, 2024
https://ipm.ucanr.edu/PMG/WEEDS/italian_thistle.html

USDA, 2024. USDA Plants, *Carduus pycnocephalus*. Accessed: March 12, 2024
<https://plants.sc.egov.usda.gov/home/plantProfile?symbol=CAPY2>

Responsible Party: Dean G. Kelch: California Department of Food and Agriculture: 1220 N Street, Sacramento, CA 95814; permits[@]cdfa.ca.gov

***Comment Period: 08/05/2024 through 09/19/2024**

***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.

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
