

## California Pest Rating Proposal for

*Rorippa austriaca* (Crantz) Besser, Austrian fieldcress, Austrian yellowcress

Family: Brassicaceae

Pest Rating: A

Synonyms: *Nasturtium austriacum* Crantz (basionym)

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Comment Period: **07/27/2022 through 09/10/2022**

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### Initiating Event:

*Rorippa austriaca* has previously been assigned a B-rating by the California Department of Food and Agriculture (CDFA), Plant Health and Pest Prevention Services, but has not gone through the current pest risk analysis procedure. *Rorippa austriaca* is designated as a noxious weed as defined by the California Food and Agricultural Code (FAC) Section 5004 and is listed in Title 3, California Code of Regulations (CCR), Section 4500.

### History & Status:

#### General Description

*Rorippa austriaca* is an herbaceous perennial with short, thickened rhizomes. Stems are erect, distally branched, 0.4 to 1 (rarely to 1.8) meter tall. Basal leaves are toothed or pinnatifid, not persisting as a basal rosette after the first year. Stem leaves are clasping, 2.5-15 cm long, oblong to lanceolate, with entire or toothed margins. Leaf size decreases towards the tip of the stem. Flowers are small (0.3 cm), with four yellow petals, and arranged in an elongated raceme. The fruits (if produced) are small, spheroidal silicles approximately 2.5-3.2 millimeters (mm) in length with glabrous valves and the style 1-2 mm long. Seeds are reddish brown with minute bubbly-reticulate sculpturing, ovoid, and very small (0.7-0.9 mm) (Al-Shehbaz, 2010).

#### Worldwide Distribution

*Rorippa austriaca* is native to temperate regions of western and central Asia and eastern and central Europe, including areas of Turkey, the Russian Federation, Armenia, Azerbaijan, Georgia, Kazakhstan, Albania, Austria, Belarus, Bulgaria, Bosnia and Herzegovina, Croatia, Germany, Hungary, North Macedonia, Montenegro, Romania, Serbia, Slovenia, and Ukraine (USDA GRIN, 2022).

It is considered naturalized in other areas of Europe and Asia including Siberia, Japan, Taiwan, Finland, Norway, Sweden, the United Kingdom, Belgium, the Netherlands, Switzerland, Estonia, Lithuania, Latvia, Italy, and France and in North America including in the Canadian provinces of Alberta, Manitoba, and Saskatchewan, and in the United States in Connecticut, New Jersey, New York, Pennsylvania, Illinois,

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Iowa, Nebraska, North Dakota, Wisconsin, Idaho, Washington, New Mexico, California, Nevada, and Utah (CABI, 2019; USDA GRIN, 2022).

**Official Control:**

*Rorippa austriaca* is listed on CCR Section 4500 as a noxious weed defined by California FAC Section 5004. The Department is mandated by California FAC, Division 1, Chapter 3, Section 403 to prevent the introduction and spread of noxious weeds. *Rorippa austriaca* is designated as a Category “A” noxious weed by the states of Nevada and Alaska and is subject to exclusion, eradication, and control activities in those states. The species is also listed as a “C” rated noxious weed species in the state of Washington (NPB, 2022).

*Rorippa austriaca* is listed as a prohibited noxious weed seed in California defined by California FAC Section 52258. Any shipment of agricultural seed found to be infested with seeds of the species is subject to quarantine and abatement. The states of Alaska, Arizona, Hawaii, Idaho, Nevada, Oregon, and Washington also list the species as a prohibited noxious weed seed (USDA AMS, 2022). There is no tolerance for *Rorippa austriaca* in interstate shipments of agricultural seed to these states, as provided for in the Federal Seed Act (Title 7, CFR Section 201.16[b]).

*Rorippa austriaca* is listed as a Harmful Organism subject to phytosanitary restrictions for the country of Australia. All plants in the genus *Rorippa* are designated as Harmful Organisms for the country of Israel (USDA PExD, 2022).

**California Distribution:**

Between 1933-2008, *Rorippa austriaca* has been reported 25 times from Modoc County. It was reported in one time in 1974 in Plumas County and in 1989 and 2001 in Sierra County (CalFlora Database, 2022; Consortium of California Herbaria, 2022).

**California Interceptions:** There are no recorded interceptions of *Rorippa austriaca* in the CDFA Pest and Damage Record database.

**Consequences of Introduction**

**1) Climate/Host Interaction: Score is High (3)**

In North America, *Rorippa austriaca* grows in wetland-riparian or moist areas including roadsides, fields, pastures, marshes, ditches, floodplains, lakeshores, and mud flats between 100-1900 meters (m) above sea level (Al-Shehbaz, 2010). *Rorippa austriaca* does not grow submerged. In California the species has been reported from riversides, drainage ditches, wet meadows, and ricefields in northern areas of the state at elevations of 1000-1900 m (CCH, 2022).

- 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)**

*Rorippa austriaca* can occur wherever general ecological conditions exist that are conducive to its survival.

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- 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)**

Reproduction in *Rorippa austriaca* is usually vegetative, with the plants concentrating their growth in belowground tissue and spreading clonally, forming dense patches (CABI, 2019). Root fragments are capable of growing new plants, and Dietz et al. (2002) have described regeneration from root fragments in field studies as “100% successful”.

Fruits and seeds are rarely produced by *Rorippa austriaca* in North America (Al-Shehbaz, 2010), but seeds that are produced can be a contaminant of agricultural seed. Stuckey (1972) describes two infestations of *Rorippa austriaca*, one in New York in 1910 and one in Wisconsin in 1918, that were believed to have been the result of contaminated grass seed and contaminated alfalfa seed from Turkestan. Based upon specimen material at the CDFA Seed Herbarium collected in Modoc County well-formed seeds are sometimes produced in the California populations (R. Price, personal observation).

- 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: Score is High (3)**

Shipments of agricultural seed infested with *Rorippa austriaca* that are shipped to a destination where it is listed as prohibited are subject to quarantine and eradication measures, typically at the owner’s expense.

*Rorippa austriaca* invades pastures and cultivated fields and competes with desirable forage (University of Minnesota, 1942; Washington State Noxious Weed Control Board, undated). The species has been found to be difficult to eradicate in wet meadow conditions in Modoc County (Robbins et al., 1970).

- 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**
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**5) Environmental Impact: Score is High (3)**

*Rorippa austriaca* competes with native plants (Washington State Noxious Weed Control Board, undated).

- 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:

- 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 *Rorippa austriaca*: **(High 14)**

Low = 5-8 points

Medium = 9-12 points

**High = 13-15 points**

**1) Post Entry Distribution and Survey Information: Score is Low (-1)**

*Rorippa austriaca* has been reported from multiple localities in Modoc County and has been detected only once or twice in two other counties (Plumas and Sierra) (CalFlora database, 2022; CCH, 2022).

-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 (14-1=13)**

**Conclusion and Rating Justification:**

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Due to the limited distribution of this species in northern California, persistent vegetative spread by rhizomes, and the economic impact of *Rorippa austriaca* infestations or infested shipments on agricultural fields and the environment, an A-rating is recommended.

**Uncertainty:**

It is unclear to what degree *Rorippa austriaca* reproduces by seed in California, but the species has been listed as a prohibited noxious weed seed by the state to help protect against any spread of viable seeds, which would significantly increase the likelihood of dispersal due to the very small seed size.

**References**

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**\*Comment Period: 07/27/2022 through 09/10/2022**

**\*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](mailto:permits[@]cdfa.ca.gov).

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**Comment Format:**

- ❖ Comments should refer to the appropriate California Pest Rating Proposal Form subsection(s) being commented on, as shown below.

**Example Comment:**

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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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**Pest Rating: A**

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