



## California Pest Rating Proposal for

*Boehmeria cylindrica*, bog-hemp, false nettle, smallspike false nettle

Family: Urticaceae

Pest Rating: C

Synonyms: *Urtica cylindrica* L.

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**Comment Period: 5/22/2020 through 7/6/2020**

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### **Initiating Event:**

*Boehmeria cylindrica* has not been rated (“N”) by the California Department of Food and Agriculture, Plant Health and Pest Prevention Services. However, it has been detected and submitted to CDFA for identification.

### **History & Status:**

#### **Background:**

*Boehmeria cylindrica* is a perennial, rhizomatous herb in the Urticaceae (nettle) family (FNA, 1993). Unlike some other plants in this family, *B. cylindrica* lacks stinging hairs. It grows to 160 cm (1-3 feet) tall, with erect stems and opposite or nearly opposite, toothed leaves that may be free of or densely covered with short hairs (Preston and Woodland, 2012; FNA, 1993). Small, greenish-white, unisexual flowers are densely arranged linearly or in clusters along a spike-like inflorescence that emerges from the leaf axils. Plants are monocious or dioecious (Les, 2017). Seeds (achenes) are small, dry, dark brown, and may have hooked or straight hairs (FNA, 1993).

*Boehmeria cylindrica* is described as an herb, emergent herb (Les, 2017) or subshrub (FNA, ), which is defined as a short, woody plant that may be largely herbaceous with overwintering, perennial, low, woody growth.

#### **Worldwide Distribution:**

*Boehmeria cylindrica* is native to portions of North, South, and Central America and the Caribbean. In North America, it is listed as native to Québec, Ontario, and New Brunswick (Canada), Mexico, and in the United States in Alabama, Arkansas, Arizona, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Maryland,

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Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Oklahoma, Ohio, Pennsylvania, Rhode Island, South Dakota, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, Wisconsin, and West Virginia (USDA, ARS, 2019).

**Official Control:** *Boehmeria cylindrica* does not appear on the United States Department of Agriculture, Federal Noxious Weed list, nor is it listed as a regulated or noxious weed in any U.S. state, including California (NPB, 2019) or in Europe (EPPO, 2019).

**California Distribution:** *Boehmeria cylindrica* has been collected at several locations in the Sacramento Valley along the Sacramento River, including in the counties of Colusa, Glenn, and Sacramento, and from the Sacramento River Delta Region in Yolo County (Calflora, 2019; CCH, 2019).

**California Interceptions:** *Boehmeria cylindrica* has been intercepted one time in a nursery shipment by inspectors in California (PDR 19TP06855606) and has been collected two times by California county inspectors and submitted to the California Department of Food and Agriculture, Plant Pest Diagnostics Branch, for identification (PDR's 060p06089084,1508942) (CDFA/PDR Database, 2019).

### Consequences of Introduction

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

*Boehmeria cylindrica* inhabits a wide spectrum of freshwater sites including alluvial plains and woods, bogs, ditches, levees, marshes, meadows, prairies, swamps, and margins of ponds, rivers, and streams at elevations below 1800 meters (approximately 6,000 feet) (Les, 2017). It can be found in riparian areas (FNA, 1993), is shade tolerant (Les, 2017), and is characteristic of disturbed places (USDA, ARS, 2019). It seems to prefer less flooded habitats (Sánchez-García, Rodríguez-Medina, Moreno-Casasola, 2016).

Evaluate if the pest would have suitable hosts and climate to establish in California

- 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)**

*Boehmeria cylindrica* can occur wherever 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 **High (3)**

*Boehmeria cylindrica* reproduces via seed. The small, inconspicuous female flowers are wind pollinated. Seed dispersal can occur via water currents (Neff and Baldwin, 2005; Les, 2017) and wind (Les, 2017). Les (2017) also notes that seeds of *B. cylindrica* have been observed in horse manure and indicates that grazing of *B. cylindrica* occurs by white-tailed deer (name) and some waterfowl.

Studies conducted along the eastern coast of Central America show seed germination is reduced in salinity levels above 5 parts per million (Sánchez-García et al, 2016).

Evaluate the natural and artificial dispersal potential of the pest.

- 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**

**3) Economic Impact: Score is Low (1)**

Les (2017) notes that *Boehmeria cylindrica* may have economic value as a leafy green vegetable or an addition to floral arrangements. *Boehmeria cylindrica* contains chemicals which are known to have antimicrobial, antiviral, and cytotoxic properties, but no medicinal uses are known (Les, 2017).

- 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

**4) Environmental Impact: Score is High (3)**

*Boehmeria cylindrica* is an ovipositional and larval feeding host for several butterflies known to occur in California, including the red admiral butterfly (*Vanessa atalanta*) (Scudder, Davis, Woodworth, Howard, Riley, and Williston, 1889), Milbert's tortoiseshell (*Nymphalis milberti*), the questionmark butterfly (*Polygonia interrogationis*), and the eastern comma butterfly (*Polygonia comma*) (Hall and Butler, 2008). *Boehmeria cylindrica* is also known to be a host for several moths (*Pleuroptya fluctuosalis*, *P. silicalis*, and *Pilocrosis ramentalis*), a gall midge (*Neolasioptera boehmeriae*), and is noted to provide substantial forage to white-tailed deer (*Odocoileus virginianus*) (Les, 2017) in areas where they occur (not in California). *Boehmeria cylindrica* colonizes the high marsh in the Suisun Marsh and Delta regions; here it could occupy habitat and displace rare high marsh plants such as the Delta tule pea (*Lathyrus jepsonii* ssp. *jepsonii*) and the Suisun Aster (*Symphyotrichum lentum*).

Environmental Impact:

- 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.**
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- 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 *Boehmeria cylindrica*: **High (13)**

Low = 5-8 points

Medium = 9-12 points

High = 13-15 points

**5) Post Entry Distribution and Survey Information:** Score is **Medium (2)**

- 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 (11)** 13-2=11

#### **Uncertainty:**

**Taxonomic Uncertainty:** Both the United States Department of Agriculture, Natural Resource Conservation Service, and Flora of North America provide several synonyms (*Boehmeria cylindrica* var. *drummondiana*; *B. cylindrica* var. *scabra*; *B. austrina*; *B. decurrens*; *B. drummondiana*; *B. scabra*; *Urtica cylindrica*) (USDA/NRCS, 2019; FNA, 2019). Flora of North America also notes that the characteristics described for this species may or may not occur together, and that one characteristic may grade into another, even among plants in the same region, and that more studies are necessary to determine the biological basis for the variety (FNA, 2019).

**Conclusion and Rating Justification:** Due to the medium score of this analysis, a C-rating is recommended for *Boehmeria cylindrica*. It will invade certain wetland areas, but its impacts are unknown. Its control, given the wetland habitat, would prove difficult.

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**Responsible Party:** Robert Price, Primary State Botanist; California Department of Food & Agriculture; Seed Laboratory and Herbarium; 3294 Meadowview Road, Sacramento, CA 95832; (916) 738-6700; [Robert.price@cdfa.ca.gov](mailto:Robert.price@cdfa.ca.gov).

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**\*Comment Period: 5/22/2020 through 7/6/2020**

**\*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 [plant.health\[@\]cdfa.ca.gov](mailto:plant.health[@]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:**

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.
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- ❖ 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: C**

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