



Figure 1: *Ludwigia hexapetala* (water-primrose). Photo by Zoya Akulova, 2012.

## California Pest Rating Proposal for

*Ludwigia hexapetala* (Hook. & Arn.) Zardini et al.: water-primrose, family Onagraceae

**Current Pest Rating: Q**

**Proposed Pest Rating: C**

**Synonyms:** *Ludwigia grandiflora* subsp. *hexapetala* (Hook. & Arn.) G. L. Nesom & Kartesz;

*Ludwigia uruguayensis* auct., in part

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**Comment Period: 10/02/2019 through 11/16/2019**

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### Initiating Event:

This plant has been included on the CDFA noxious weed list [3 CCR § 4500] as a non-rated plant pest. Water-primrose has not been reviewed under the current pest rating system. A pest rating proposal is required to evaluate the current rating and status of water-primrose in the state of California.

### History & Status:

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**Background:** Water-primrose is a non-native perennial herb found growing along wetland shorelines or floating on the water surface. This South American plant is robust with bright yellow, showy flowers and willow-like leaves. Water-primrose has established in many bodies of water in California. It forms very dense mats of vegetation along shorelines and out into the water. Plants favor the margins of lakes, ponds, ditches, and streams. Plants bloom throughout the summer and produce copious seed in fall.

**Worldwide Distribution:** The species is widespread in South America (where it is native) as well as in the southeastern United States, where it is also considered native by the USDA ARS GRIN database. It has become naturalized in Europe and in western North America, including Washington, Oregon, and California.

**Official Control:** It is listed as a noxious weed by California, Washington, North Carolina, and South Carolina.

**California Distribution:** Water-primrose is widely distributed in coastal and near coastal counties of California and also in the Central Valley. It has been reported for 19 counties in the Consortia of California Herbaria and is mapped for approximately 30 counties in the Calflora website. Because of its occurrence along bodies of water it is likely to be underrepresented in herbarium collections.

**California Interceptions:** Specimens have been submitted to the CDFA by land managers in Glenn, Mendocino, Santa Clara, Sacramento, and Lake counties (CDFA PDR database).

The risk water-primrose would pose to California is evaluated below.

## Consequences of Introduction:

- 1) **Climate/Host Interaction:** Risk is **Medium (2)**. Water-primrose could occur in wetlands such as the Sacramento-San Joaquin River Delta as well as irrigation canals and watering ponds.

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

**Score: 2**

- 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:** Risk is **High (3)** as weeds do not require any one host, but grow wherever ecological conditions are favorable.

Evaluate the host range of the pest.

**Score: 3**

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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:** Risk is **High (3)**. Water-primrose produces via numerous seeds and can spread rapidly in water and on boats and equipment. Water-primrose can also be spread by waterfowl which eat the seeds.

Evaluate the natural and artificial dispersal potential of the pest.

**Score: 3**

- 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:** Risk is **Low (1)**. Water-primrose can form dense mats in water channels and could potentially interfere with agricultural water supplies.

Evaluate the economic impact of the pest to California using the criteria below.

**Economic Impact: G**

- 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: 1**

- **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:** Risk is **Medium (2)**. Water-primrose could invade the water systems of California, disrupt natural wetland communities and potentially lower biodiversity by invading wetlands. This dense growth impedes water movement, blocks the growth of native plants, and reduces available habitat for water birds and fish.

**Environmental Impact: A**

- A. The pest could have a significant environmental impact such as lowering biodiversity, disrupting natural communities, or changing ecosystem processes.**
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- 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:**

- 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 water-primrose: Medium (11)**

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:** Water-primrose has a wide distribution in California. CalFlora shows distributions in more than 25 counties stretching from San Diego county in the south, to Shasta county in the north. It receives a **High (-3)** in this category.

**Score: -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) The final score is** the consequences of introduction score minus the post entry distribution and survey information score:

**Final Score:** *Score of Consequences of Introduction – Score of Post Entry Distribution and Survey Information = Low (8)*

**Uncertainty:**

The plant has been recorded in California since the 1940s and is well established. The impacts are relatively well-known at this point.

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## Conclusion and Rating Justification:

Water-primrose is a common California weed in natural wetlands and irrigation canals. A rating of “C” rating appears justified under CCR 3162 because of the relatively wide distribution of the species in California.

## References:

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<https://pdr.cdfa.ca.gov/PDR/pdrmainmenu.aspx>

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**Author:**

Dean G. Kelch, Environmental Program Manager; CDFA/PHPPS Permits and Regulation/Environmental Compliance/ PDAS; 2800 Gateway Oaks, Suite 200, Sacramento, CA 95833; Tel. (916) 403-6650; plant.health[@]cdfa.ca.gov.

**Responsible Party:**

Robert Price, Ph.D., Primary State Botanist; California Department of Food & Agriculture; 3294 Meadowview Road, Sacramento, CA 95832; Tel. (916) 738-6700; plant.health[@]cdfa.ca.gov.

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**\*Comment Period: 10/02/2019 through 11/16/2019**

**\*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.

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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.]

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- ❖ 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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**Proposed Pest Rating: C**

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