

California Pest Rating Proposal for

Limonium ramosissimum (Poir.) Maire: Algerian sea lavender

Family: Plumbaginaceae

Pest Rating: B

Comment Period: **5/26/2020 through 7/10/2020**

Initiating Event:

Limonium ramosissimum is reported as an invasive exotic weed in tidal salt marshes in California. It was found growing in an open space park in 2018 by the San Diego County Agricultural Commissioner's office and has been detected in salt marshes or other wetlands in both northern and southern California. It has been assigned a rating of Q by CDFA. A pest rating proposal is needed to assign a permanent rating to this species.

History & Status:

Background: Algerian sea lavender, *Limonium ramosissimum* is an erect perennial herb up to 50 cm in height native to the coastal Mediterranean region of Europe and North Africa (Pignatti, 1972). It is now naturalized in coastal marshes and wetlands in California (Archbald and Boyer, 2014; Perlmutter et al., 2011). The rosette leaves are approximately 3-10 cm in length and 7-20 mm in width and are obovate to oblanceolate or spoon-shaped with a rounded to acute tip. The inflorescence is an elongate branched spike with small clusters of two to five flowers relatively densely distributed along the axes. The corolla is light pink and approximately 5 to 7 mm long.

The *L. ramosissimum* populations found in California are sometimes listed as belonging to the subspecies *provinciale*, but their subspecific identity is unclear and many collections collected across California are not associated with a subspecies name (Consortium of California Herbaria; Smith, 2005). Some similar plants naturalized in coastal California have sometimes been identified as the related species *L. binervosum* (G.E. Sm.) C. E. Salmon (Consortium of California Herbaria, 2020), but this species is not included in the treatment of the genus in the Jepson Manual (Preston and McClintock, 2012) or mapped by the Calflora website (2020). In both the San Francisco Bay and southern

California, *Limonium ramosissimum* sometimes co-occurs with another related invasive sea lavender, *Limonium duriusculum* (Cal-IPC, 2020).

Worldwide Distribution: *Limonium ramosissimum* is native to Mediterranean region of Europe and North Africa.

Official Control: *Limonium ramosissimum* is a Q rated weed in California. It has not been listed as a harmful organism in any countries of the world (USDA APHIS PCIT).

California Distribution: *Limonium ramosissimum* was reported to be abundantly naturalized by the late 1990s in the Carpenteria salt marsh of Santa Barbara County (Smith, 2005), and was collected in San Diego county by 2000 and in Orange County by 2002 (Consortium of California Herbaria, 2020). It was first reported in coastal areas of the San Francisco Bay Region in 2007. It has been reported from at least 12 counties in the state: Alameda, Contra Costa, Los Angeles, Marin, Riverside, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, and Solano (Calflora, 2020; Consortium of California Herbaria, 2020; Preston and McClintock, 2012).

California Interceptions: The plant has been observed growing naturally as noted under California distribution.

The risk *Limonium ramosissimum* would pose to California is evaluated below:

Consequences of Introduction:

- 1) Climate/Host Interaction:** *Limonium ramosissimum* occurs in coastal salt marshes, coastal or riparian scrub, grassland and disturbed areas in coastal California, including sites in the central and southern parts of San Francisco Bay (Preston and McClintock, 2012; Consortium of California Harbaria). The species thrives best in the higher portions of the coastal salt marshes, which have lower soil moisture and salinity. It thus has a high invasion potential in the coastal salt marsh areas of California (Archbald and Boyer, 2014). It receives a Medium (2) in this category.

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 *Limonium ramosissimum* does not require any one host, but grows wherever ecological conditions are favorable.
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Evaluate the host range of the pest.

Score: 3

- 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:** *Limonium ramosissimum* primarily establishes in naturally disturbed upper salt marshes habitats. The size and reproductive output increases in areas with lowest soil moisture and salinity. Higher salinity and inundation can limit the size and reproductive capacity of this species. It flowers between September and June. It reproduces by seeds and mature plants can produce tens of thousands of seeds per square meter. Seeds float in water for weeks and germinate in fresh or saline waters. It can spread rapidly in areas where it is abundant (Archbald and Boyer, 2014), and is likely to spread to other areas due to seed contamination of restoration plantings. It receives a **High (3)** in this category.

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:** *Limonium ramosissimum* is reported as highly invasive in California coastal marshes. The eradication of limited infestations in wetlands can be challenging without significant economic expenditure (Perlmutter et al., 2011). Because of its habitat preferences, the species is not likely to have any significant economic impact to California's agricultural and urban environment. If established in California, it could impact cultural practices. It receives a **Low (1)** in this category.

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

Economic Impact: D

- 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.
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- High (3) causes 3 or more of these impacts.

5) Environmental Impact: *Limonium ramosissimum* can displace native upper marsh vegetation and is invading the habitat of the rare Point Reyes bird's beak (*Chloropyron maritimus* ssp. *palustris*) in Marin County. It is also disturbing the habitat of endangered salt marsh bird's beak (*Chloropyron maritimus* ssp. *maritimus*) in southern California. By changing the vegetation structure of the its high salt marsh habitat, the species could adversely affect populations of the state and federally endangered California clapper rail (*Rallus obsoletus*) and salt marsh harvest mouse (*Reithrodontomys raviventris*), as both species rely on high marsh vegetation for concealment to avoid predation. *Limonium ramosissimum* could also adversely impact San Francisco Bay songbird species that use tall vegetation for nesting and refuge (Perlmutter et al., 2011). Therefore, it receives a **High (3)** in this category.

Environmental Impact: A, B, 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:

- 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 *Limonium ramosissimum*: Medium (12)

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: *Limonium ramosissimum* has become established in two well separated areas of coastal California and and receives a score of **Medium (-2)** in this category.

Score: -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).
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-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 = Medium (10)*

Uncertainty:

Differing identifications of plants similar to *Limonium ramosissimum* are a source of some uncertainty for the geographic distribution of the species and will need further study using molecular as well as morphological data.

Conclusion and Rating Justification:

Limonium ramosissimum is reported as highly invasive in California. It has naturalized in San Francisco Bay marshes and in riparian and wetland habitats in southern California including San Luis Obispo County (Morro Bay) and San Diego county. Because of the potential further spread of this species in sensitive coastal marsh habitats in California, it is a threat to critical habitat of rare plants and endangered species. A “B” rating is justified.

References:

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***Comment Period: 5/26/2020 through 7/10/2020**

***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).

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: B
