

***Vallisneria rubra* (a plant, no common name)**

Ecological Risk Screening Summary

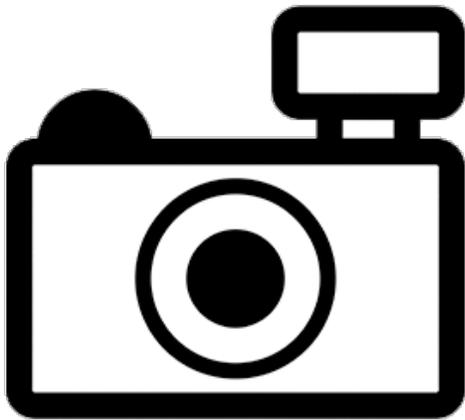
U.S. Fish & Wildlife Service, March 2022

Revised, June 2022

Web Version, 8/22/2022

Organism Type: Plant

Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Les et al. (2008):

“TYPE: West[ern] Australia, nr. King River, East Kimberley”

Status in the United States

No records of introduction to the wild or of trade of *Vallisneria rubra* in the United States were found.

Means of Introductions in the United States

This species is not currently known to be introduced to and spread within the United States.

Remarks

Vallisneria rubra is listed with the common name of Red Vallisneria (Aquarium Plants Factory 2022) and Red giant torta (GTAaquaria 2022). The basionym for this species is *Maidenia rubra* Rendle (GBIF Secretariat 2022); information searches were conducted using both names for this screening.

From Les et al. (2008):

“[...] only *V. rubra* and *V. triptera* (but not *V. caulescens*) are known to grow in the vicinity of hybrid populations. Our examination of the purported hybrid specimens indicated that they probably are robust forms of *V. rubra*.”

“Although the name *Vallisneria rubra* has not been validly published previously, it is widespread in the aquarium trade where it seems to be used more in the sense of a cultivar name applied primarily to *V. spiralis*; however, it has been (mis)used for several taxa characterized by reddish foliage.”

From Winterton et al. (2018):

“The taxonomy of *Vallisneria* is highly problematic, resulting in numerous species being described and these names being widely distributed in the aquarium plant trade. Reliable identification of species is only possible by examining floral structures. [...] The closely related species *Maidenia rubra* Rendle was recently placed in *Vallisneria* based on morphological and molecular data.”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to WFO (2022), *Vallisneria rubra* (Rendle) Les & S.W.L.Jacobs is the accepted name for this species.

From CABI (2019):

Domain: Eukaryota
Kingdom: Plantae
Phylum: Spermatophyta
Subphylum: Angiospermae
Class: Monocotyledonae
Order: Hydrocharitales
Family: Hydrocharitaceae
Genus: *Vallisneria*
Species: *Vallisneria rubra*

Size, Weight, and Age Range

No information available on size, weight, and age range for this species.

Environment

From Aquagreen (2022):

“It is usually found in water less than 50 cm deep. Often found in non-permanent creeks where it multiplies to a large amount just before the creek dries.”

Climate

No information available on climate for this species.

Distribution Outside the United States

Native

From Les et al. (2008):

“TYPE: West[ern] Australia, nr. King River, East Kimberley”

Introduced

V. rubra is recorded as present in United Kingdom (CABI 2019) but no further information was given or found in the literature.

Means of Introduction Outside the United States

No information on means of introduction were found for *Vallisneria rubra*.

Short Description

From Les et al. (2008):

“In other cases (e.g. *Maidenia rubra*), three locules consistently are formed [on the anther] (McConchie 1983).”

“Both *Maidenia rubra* and *V. triptera* possess fused filaments [in the stamen] (McConchie 1983; Jacobs and Frank 1997), [...]”

From Aquagreen (2022):

“It varies in colour from pale green in the shade to deep maroon in the full sun.”

Biology

No information regarding the biology of *Vallisneria rubra* was found.

Human Uses

Vallisneria rubra is a plant used in aquariums (Aquagreen 2022; Aquarium Plants Factory 2022; Aquasabi 2022; GTAquaria 2022PlantedTank 2022). It is confused with other plant species in trade.

From Aquasabi (2022):

“This narrow-leaved *Vallisneria* is produced by the nursery Aquaflora (Netherlands) as "*Vallisneria rubra*". However it is not the Australian species *Vallisneria rubra* (also known as *Maidenia rubra*), a totally different stem plant. We label the plant provisionally as *Vallisneria* sp. "Rubra" as long as its species identity is unclear.”

Diseases

No information on diseases was found for *Vallisneria rubra*.

Threat to Humans

No information on threat to humans was found for *Vallisneria rubra*.

3 Impacts of Introductions

Vallisneria rubra has been reported as introduced outside of its native range in the United Kingdom. It is unclear whether this species is established in this location and impacts of introductions are unknown.

4 History of Invasiveness

Vallisneria rubra has been reported as introduced in the United Kingdom. This report could not be verified with any other source. No information regarding means of introduction, a specific location, or regarding impacts was found. This species is present in trade for aquariums but the name 'rubra' is also applied to varieties of other *Vallisneria* in trade. but the trade volume and duration are unknown. The history of invasiveness is classified as No Known Nonnative Population.

5 Global Distribution

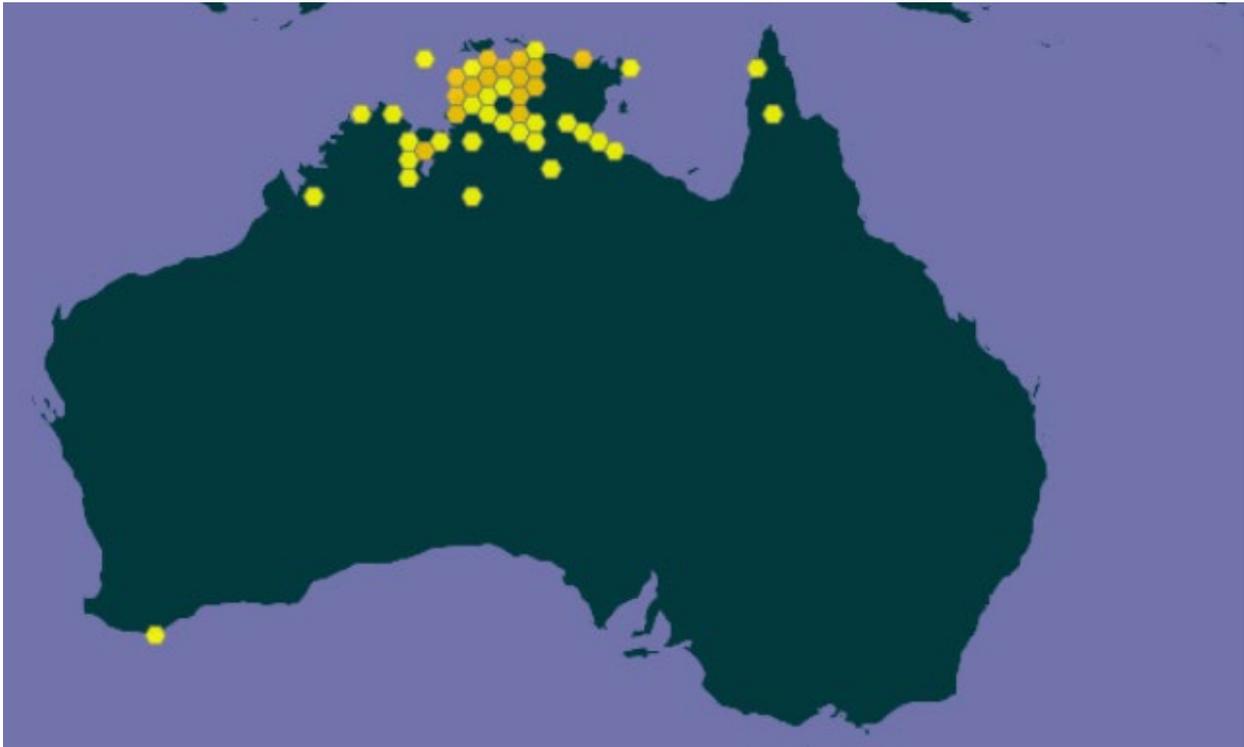


Figure 1. Known global distribution of *Vallisneria rubra*. Observations are reported from Australia. Map from GBIF Secretariat (2022). The observations in southwestern Australia were not used in the climate match. The specimens are over 100 years old and no mention of the species in that area of Australia could be found during the information search.

6 Distribution Within the United States

Vallisneria rubra has not been reported in the wild within the United States.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Vallisneria rubra* to the contiguous United States was mostly low. There were small areas of medium match in Southern Florida and pockets along the Mexican border. There were no areas of high match. The overall Climate 6 score (Sanders et al. 2021; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low. (Scores between 0.000 and 0.005, inclusive, are classified as low.) No states had high individual Climate 6 scores. Florida had a medium individual score. All other States had low individual scores.

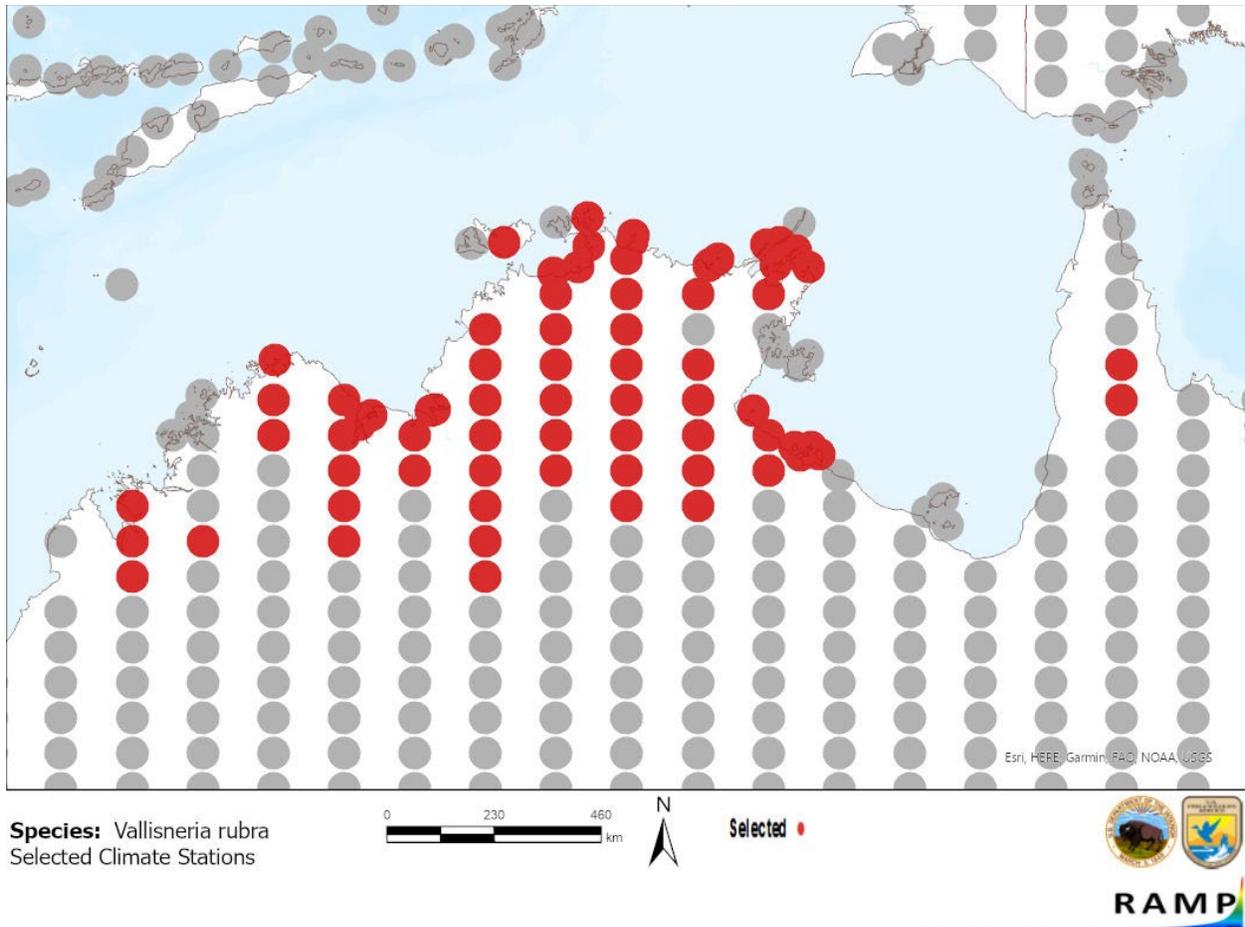


Figure 2. RAMP (Sanders et al. 2021) source map showing weather stations in Australia selected as source locations (red) and non-source locations (gray) for *Vallisneria rubra* climate matching. Source locations from GBIF Secretariat (2022). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

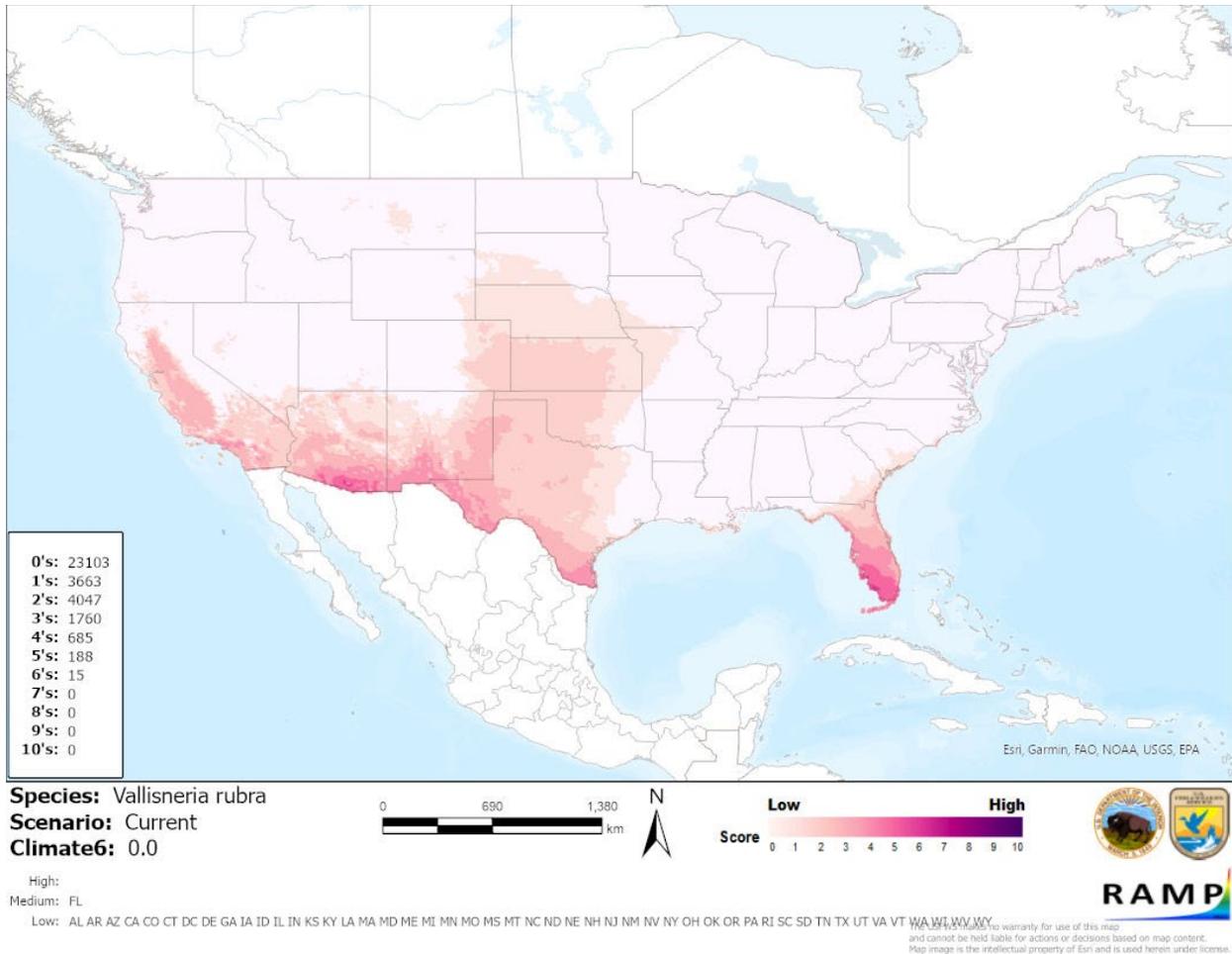


Figure 3. Map of RAMP (Sanders et al. 2021) climate matches for *Vallisneria rubra* in the contiguous United States based on source locations reported by GBIF Secretariat (2022). Counts of climate match scores are tabulated on the left. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

8 Certainty of Assessment

The certainty of assessment is low. Minimal information was available for this species either under the valid name or the synonym. One record of introduction was found with no detailed information, and it could not be corroborated with any other source.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Vallisneria rubra is a freshwater plant native to Australia. It is present in trade for aquariums, but the name is also used in trade for another closely related species. One record of introduction was found but there was no supporting information. The history of invasiveness is classified as No Known Nonnative Population. Overall climate match with the contiguous United States is Low. Medium match can be found in areas of Florida and along the Mexican border. There are no areas of high match. The certainty of this assessment is Low due to a general lack of information. The overall risk assessment category for *Vallisneria rubra* is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks, Important additional information:** No additional information
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

Aquagreen. 2022. *Vallisneria rubra*. Australian native water plants for aquariums. Available: https://www.aquagreen.com.au/plant_data/Vallisneria_rubra.html (March 2022).

Aquarium Plants Factory. 2022. *Vallisneria rubra*. Available: <https://www.aquariumplantsfactory.com/products/vallisneria-rubra> (March 2022).

Aquasabi. 2022. *Vallisneria* sp. “Rubra” Available: <https://www.aquasabi.com/Vallisneria-sp-Rubra-Pot> (March 2022).

[CABI] CAB International. 2019. *Vallisneria rubra*. CABI Invasive Species Compendium. Wallingford, United Kingdom: CAB International. Available: <https://www.cabi.org/isc/datasheet/117766> (March 2022).

GBIF Secretariat. 2022. GBIF backbone taxonomy: *Vallisneria rubra* (Rendle) Les & S.W.L.Jacobs. Copenhagen: Global Biodiversity Information Facility. Available: <https://doi.org/10.15468/dl.u77bde> (March 2022).

GTAaquaria. 2022. 600 aquatics plants just arrived! list inside. Available: <https://www.gtaaquaria.com/threads/600-aquatics-plants-just-arrived-list-inside.44926/> (March 2022).

Les DH, Jacobs SWL, Tippery NP, Chen L, Moody ML, W-HM. 2008. Systematics of *Vallisneria* (Hydrocharitaceae). *Systematic Botany* 33:49–65.

PlantedTank. 2022. Plants for sale in Colorado. Available: <https://www.plantedtank.net/threads/plants-for-sale-in-colorado.64785/> (March 2022).

Sanders S, Castiglione C, Hoff M. 2021. Risk Assessment Mapping Program: RAMP. Version 4.0. U.S. Fish and Wildlife Service.

Winterton S, Scher J, Burnett J, Redford AJ. 2018. *Vallisneria*. Aquarium and pond plants of the world. Edition 3. Sacramento, California: USDA APHIS Identification Technology Program and California Department of Food and Agriculture. Available: <http://idtools.org/id/appw/factsheet.php?name=16046> (June 2022).

World Flora Online. 2022. *Vallisneria rubra* (Rendle) Les & S.W.L.Jacobs. World Flora Online – a project of the World Flora Online Consortium. Available: <http://www.worldfloraonline.org/taxon/wfo-0000837153> (June 2022).

11 Literature Cited in Quoted Material

Note: The following references are cited within quoted text within this ERSS, but were not accessed for its preparation. They are included here to provide the reader with more information.

McConchie CA. 1983. Floral development of *Maidenia rubra* Rendle (Hydrocharitaceae). *Australian Journal of Botany* 31: 585–603.