Plant Risk Evaluator -- PRE™
Evaluation Report

Arum italicum -- California

California Invasive Plant Council (Cal-IPC)

PRE Score: 19 -- High Potential Risk
Confidence: 82 / 100
Questions answered: 20 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Completed

Evaluation Date: April 15, 2021

This PDF was created on July 05, 2023

This project was funded in part by the USDA National Institute of Food and Agriculture through the Western Integrated Pest Management Center, grant number 2018-70006-28881.

Plant Evaluated

Arum italicum

Image by J. Parker's

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Arum italicum*) in an effort to understand the invasive history, reproductive strategies, and the impact, if any, on the region's native plants and animals. This research reflects the data available at the time this evaluation was conducted.

Summary

Arum italicum is a tuber-forming perennial in the Araceae that has been used extensively in the horticultural industry. It has naturalized throughout the wetter regions of the western U.S. as well as locally in the eastern U.S., in Australia, New Zealand, portions of South America, and other regions. The plant is noted for its aggressive growth habit in gardens and riparian areas, its ability to cause contact dermatitis, and for being unpalatable to toxic for livestock. It reproduces both by seed that can be carried long distances and by lateral tubers, making it very difficult to control once established.

General Information

Status: Completed
Screener: Jutta Burger
Evaluation Date: April 15, 2021

Plant Information

Plant: *Arum italicum*

Regional Information

Region Name: California

Climate Matching Map

To answer four of the PRE questions for a regional evaluation, a climate map with three climate data layers (Precipitation, UN EcoZones, and Plant Hardiness) is needed. These maps were built using a toolkit created in collaboration with GreenInfo Network, USDA, PlantRight, California Invasive Plant Council, and The Information Center for the Environment at UC Davis.

Click here to see the generated climate matching map for this region. This climate match database is hosted by GreenInfo Network and publicly accessible.

Evaluation Questions

These questions are based on an article published by PLOS One, which can be found here: https://doi.org/10.1371/journal.pone.0121053.

Invasive History and Climate Matching (Questions 1 - 6)

1. Has the species (or cultivar or variety, if applicable; applies to subsequent "species" questions) become naturalized where it is not native?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum is native to northern Africa, much of Europe, and parts of Russia and Turkey (USDA-GRIN). It has naturalized in California (Jepson Flora Project 2017), as well as across the western United States and Northeast (Swearingen and Bargeron 2015), Argentina (Forziano et al. 1991), Australia (Victorian Resources Online 2016), and New Zealand (New Zealand Plant Conservation Network 2017).

Reference(s):

- Victorian Resources Online, Department of Economic Development (2016). Invasiveness Assessment - Italian lily (Arum italicum) in Victoria.
- Swearingen, J., & Bargeron C. (2015). Italian arum: Invasive Plant Atlas of the United States.
- Calflora (2011). Calflora: Arum italicum.
- Jepson Flora Project (2017). Jepson eFlora: Arum italicum.
- ARS, USDA. (2014). USDA GRIN: Arum italicum.
- Forziano, M.J., Crisci J.V., & Delucci G. (1991). Arum italicum (Aralaceae) Especie naturalizada de la flora Argentina. Kurziana. 21, 237-241.

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2. Is the species (or cultivar or variety) noted as being naturalized in the US or world in a similar climate?

- Answer: **Yes**, which contributes **2** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum is native to western Europe east to Iraq and Macaronesia (Boyce 1993; USDA GRIN). It is naturalized in several regions with climate similar to that in California, including in California (Calflora, accessed 2021). It is also naturalized in some areas with cooler, moister climates. Regions with overlapping climate and distribution include the Cape region of South Africa, portions of Australia and New Zealand, as well as the western U.S. and eastern U.S. mountain ranges (GBIF 2017).

Reference(s):

- GBIF (2017). GBIF: Arum italicum.
- Calflora (2011). Calflora: Arum italicum.
- Boyce, P. (1993). The genus Arum. A Kew Magazine monograph.. 196.
- ARS, USDA. (2014). USDA GRIN: Arum italicum.

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3. Is the species (or cultivar or variety) noted as being invasive in the U.S. or world?

- Answer: **Yes**, which contributes **2** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum is noted as being invasive in several areas of the world. These include: Australia (Victorian Resources Online 2016), New Zealand (New Zealand Plant Conservation Network 2017), the Pacific Islands (Pacific Islands Ecosystems at Risk 2011), and Washington State (2010).

Reference(s):

- Victorian Resources Online, Department of Economic Development (2016). Invasiveness Assessment - Italian lily (Arum italicum) in Victoria.
- Pacific Island Ecosystems at Risk (PIER) (2011). Arum italicum (PIER species info).
- New Zealand Plant Conservation Network (2017). Arum italicum - New Zealand Plant Conservation Network.
- Washington State Noxious Weed Control Board (2010). Noxious Weed List.

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4. Is the species (or cultivar or variety) noted as being invasive in the US or world in a similar climate?

- Answer: **Yes**, which contributes **3** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum is invasive in several regions with climate similar to that in California. Regions with overlapping climate and documentation of invasiveness include central Europe, portions of Australia (Australia's Virtual Herbarium) and New Zealand (New Zealand Plant Conservation Network 2017), as well as Washington State (Washington State Noxious Weed Board 2014). It is considered locally invasive in Oregon, New York, and Maryland where climate matches to a more limited degree (Swearingon and Bargeron 2015).

Reference(s):

- Swearingen, J., & Bargeron C. (2015). Italian arum: Invasive Plant Atlas of the United States.
- Victorian Resources Online, Department of Economic Development (2016). Invasiveness Assessment - Italian lily (Arum italicum) in Victoria.
- New Zealand Plant Conservation Network (2017). Arum italicum - New Zealand Plant Conservation Network.
- Australia's Virtual Herbarium (2016). Weeds of Australia: Arum italicum.
- Washington State Noxious Weed Control Board (2010). Noxious Weed List.
- Washington State Noxious Weed Control Board (2014). Written findings of the Washington State Noxious Weed Control Board: Arum italicum.
- Cal-IPC (2016). Cal-IPC global map of climate areas matching California.

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5. Are other species of the same genus (or closely related genera) invasive in a similar climate?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Arum maculatum is considered invasive in Chile (Randall 2017).

Reference(s):

- Randall, R.P. (2017). A Global Compendium of Weeds. Third Edition..

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6. Is the species (or cultivar or variety) found predominately in a climate matching the region of concern?

- Answer: **Yes**, which contributes **2** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum extends across three of the five global ecozones that match portions of California's climate (Australia's Virtual Herbarium; Forziano et al., 1991; NC State University, 2016; New Zealand Plant Conservation Network, 2017; Victorian Resources 2016; Washington State Noxious Weed Control Board). It does not appear to occur in either Temperate Desert or Subtropical Desert ecozones (GBIF 2017; California's Climate Matching map) .

Reference(s):

- GBIF (2017). GBIF: Arum italicum.
- Forziano, M.J., Crisci J.V., & Delucci G. (1991). Arum italicum (Aralaceae) Especie naturalizada de la flora Argentina. Kurziana. 21, 237-241.
- Victorian Resources Online, Department of Economic Development (2016). Invasiveness Assessment - Italian lily (Arum italicum) in Victoria.
- Washington State Noxious Weed Control Board (0). Italian arum: Arum italicum Brochure.
- New Zealand Plant Conservation Network (2017). Arum italicum - New Zealand Plant Conservation Network.
- NC State University (2016). NC State Plant List -- Arum italicum.
- Australia's Virtual Herbarium (2016). Weeds of Australia: Arum italicum.
- Cal-IPC (2016). Cal-IPC global map of climate areas matching California.

Impact on Native Plants and Animals (Questions 7 - 10)

7. Does this plant displace native plants and dominate (overtop or smother) the plant community in areas where it has established?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

There is some evidence that Arum italicum can form monocultures that outcompete and overtop natives. In moist, coastal habitats in Washington State, monospecific stands of up to 7500 ft2 have been reported (Washington State Noxious Weed Control Board), though evidence from other areas is more limited.

Reference(s):

- Washington State Noxious Weed Control Board (2014). Written findings of the Washington State Noxious Weed Control Board: Arum italicum.

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8. Is the plant noted as promoting fire and/or changing fire regimes?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

There is no evidence that this species promotes fire or changes fire regimes. It grows primarily in moist climates. However, it does respond favorably to fire by resprouting vigorously (Victorian Resources Online 2016).

Reference(s):

- Victorian Resources Online, Department of Economic Development (2016). Invasiveness Assessment - Italian lily (Arum italicum) in Victoria.

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9. Is the plant a health risk to humans or animals/fish? Has the species been noted as impacting grazing systems?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum contains cyanogenic glucosides, saponins, and Calcium oxalate crystals, which can cause skin irritations, arrhythmia, and internal bleeding (University of California: Safe and Poisonous Garden Plants, Wink 2009). This species can poison and kill livestock as well, and has been listed as being a threat to livestock by several other weed assessments (Washington State Noxious Weed Board 2014).

Reference(s):

- Washington State Noxious Weed Control Board (2014). Written findings of the Washington State Noxious Weed Control Board: Arum italicum.
- Wink, M. (2009). Mode of action and toxicology of plant toxins and poisonous plants. Mitt. Julius Kühn-Inst.. 421, 93-112.
- University of California Agriculture and Natural Resources Division (2012). Toxic Plants (by scientific name).

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10. Does the plant produce impenetrable thickets, blocking or slowing movement of animals, livestock, or humans?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

The plant is low in stature, typically growing no more than 0.5m in height; foliage goes dormant / dies back in summer in all climates and in winter in colder regions (Missouri Botanical Garden 2016).

Reference(s):

- Missouri Botanical Garden (2016). MBOT Plant Finder - Arum italicum.

Reproductive Strategies (Questions 11 - 17)

11. Does this species (or cultivar or variety) reproduce and spread vegetatively?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum can spread by seed as well as vegetatively, by lateral tubers (Boyce 1993). Digging facilitates rapid propagation (Washington State Noxious Weed Control Board 2014, Victorian Resources 2016). Sprouts from tubers will flower in their second year (Mendez and Obeso 1993).

Reference(s):

- Méndez, M., & Obeso J. R. (1993). Size-dependent reproductive and vegetative allocation in Arum italicum (Araceae). Canadian Journal of Botany. 71, 309–314.
- Victorian Resources Online, Department of Economic Development (2016). Invasiveness Assessment - Italian lily (Arum italicum) in Victoria.
- Washington State Noxious Weed Control Board (2014). Written findings of the Washington State Noxious Weed Control Board: Arum italicum.
- Boyce, P. (1993). The genus Arum. A Kew Magazine monograph..

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12. If naturally detached fragments from this plant are capable of producing new plants, is this a common method of reproduction for the plant?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Reports suggest that vegetative reproduction is common in the field (Washington State Noxious Weed Control Board 2014; Victorian Resources Online 2016). Research reports that there is a trade-off between sexual and vegetative reproduction in A. italicum (Mendez and Obeso 1993).

Reference(s):

- Méndez, M., & Obeso J. R. (1993). Size-dependent reproductive and vegetative allocation in Arum italicum (Araceae). Canadian Journal of Botany. 71, 309–314.
- Victorian Resources Online, Department of Economic Development (2016). Invasiveness Assessment - Italian lily (Arum italicum) in Victoria.
- Washington State Noxious Weed Control Board (2014). Written findings of the Washington State Noxious Weed Control Board: Arum italicum.

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13. Does the species (or cultivar or variety) commonly produce viable seed?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

This species produces fleshy red orange/red fruits that contain viable seeds; plants can reproduce by seed as well as vegetatively (Albre and Gibernau 2008). Flowers are self-incompatible through dichogamy but plants are self-compatible (Mendez and Diaz 2001). Sexual reproduction results in lower resource allocation to vegetative reproduction (Mendez and Obeso 1993).

Reference(s):

- Méndez, M., & Díaz A. (2001). Flowering dynamics in Arum italicum (Araceae): relative role of inflorescence traits, flowering synchrony, and pollination context on fruit initiation. American Journal of Botany. 88, 1774–1780.
- Albre, J., & Gibernau M. (2008). Reproductive biology of Arum italicum (Araceae) in the south of France. Botanical Journal of the Linnean Society. 156, 43–49.
- Méndez, M., & Obeso J. R. (1993). Size-dependent reproductive and vegetative allocation in Arum italicum (Araceae). Canadian Journal of Botany. 71, 309–314.

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14. Does this plant produce copious viable seeds each year (> 1000)?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Seed production has been estimated at 83-355 seeds per inflorescence; per plant seed production is estimated at close to, but still less than 1000 seeds (Albre et al. 2003).

Reference(s):

- Albre, J., & Gibernau M. (2008). Reproductive biology of Arum italicum (Araceae) in the south of France. Botanical Journal of the Linnean Society. 156, 43–49.

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15. Is there significant germination (>25%) of seeds the next growing season, with no requirement of an infrequent environmental condition for seeds to germinate (i.e. fire) or long dormancy period?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Seeds have little seed dormancy and germinate readily (Diaz et al. 2006).

Reference(s):

- Diaz, A., Amoin M. Aka, & Gibernau M. (2006). The effectiveness of some mechanisms of reproductive isolation in Arum maculatum and A. italicum (Araceae). Biological Journal of the Linnean Society. 150, 323 - 328.

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16. Does this plant produce viable seed within the first three years (for an herbaceous species) to five years (for a woody species) after germination?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Although vegetative propagules can become sexually reproductive, plants germinating from seed will typically take four years to flower (Albre and Gibernau 2008).

Reference(s):

- Albre, J., & Gibernau M. (2008). Reproductive biology of Arum italicum (Araceae) in the south of France. Botanical Journal of the Linnean Society. 156, 43–49.

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17. Does this plant continuously produce seed for >3 months each year or does seed production occur more than once a year?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum is listed as blooming over a four month period in California (Calflora; Jepson Flora Project).

Reference(s):

- Calflora (2011). Calflora: Arum italicum.
- Jepson Flora Project (2017). Jepson eFlora: Arum italicum.

Dispersal (Questions 18 - 20)

18. Are the plant's propagules frequently dispersed long distance (>100 m) by mammals or birds or via domestic animals?

- Answer: **Yes**, which contributes **1** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Birds have been documented as the primary dispersers of A. maculatum (Snow and Snow 1988), so bird dispersal is also presumed to occur for A. italicum (Mendez 1997). Ants can also disperse seeds (Barroso 2013), though only birds will be likely to disperse seed long distances. Because Arum italicum is poisonous to many mammals and because fruits and seeds do not have any spines or barbs to adhere to fur, mammals are unlikely dispersers.

Reference(s):

- Borroso, A., Amor F., Cerda X., & Boulay R.R. (2013). Dispersal of non-myrmecochorous plants by a ‘‘keystone disperser’’ ant in a Mediterranean habitat reveals asymmetric interdependence. Insectes Sociaux. 60, 75-86.
- Méndez, M. (1997). Sources of Variation in Seed Mass in Arum italicum. International Journal of Plant Sciences. 158, 298-305.
- Snow, B.K., & Snow D.W. (1988). Birds and Berries. 268.

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19. Are the plant’s propagules frequently dispersed long distance (>100 m) by wind or water?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Low** confidence in this answer based on the available literature.

Answer / Justification:

There is no evidence that fruits or seeds are dispersed by wind or water, likely because they are too heavy. Mendez (1997) reported an average seed weight of 33mg and 39mg for two populations of A. italicum. I was not able to find any reference for fruit buoyancy.

Reference(s):

- Méndez, M. (1997). Sources of Variation in Seed Mass in Arum italicum. International Journal of Plant Sciences. 158, 298-305.

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20. Are the plant's propagules frequently dispersed via contaminated seed (agriculture or wildflower packets), equipment, vehicles, boats or clothing/shoes?

- Answer: **No**, which contributes **0** point(s) to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Arum italicum appears to have been introduced primarily as a garden ornamental. There are no records of it being a contaminant of seed, equipment etc. Fruits and seeds also do not carry barbs or hooks that could aid in transport. However, tuber fragments can readily generate new plants (Boyce 1993), so movement of soil from infested areas will move plants.

Reference(s):

- Boyce, P. (1993). The genus Arum. A Kew Magazine monograph..

Evaluation Notes

Websites accessed:

https://www.calflora.org/app/taxon?crn=730

Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2022. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ Accessed: 04/01/2021.

https://www.gbif.org/species/5330661

GBIF Secretariat (2021). GBIF Backbone Taxonomy:*Arum italicum* Mill. Checklist dataset https://doi.org/10.15468/39omei . Accessed via GBIF.org on 04/01/2021.

Total PRE Score

PRE Score: 19 -- High Potential Risk
Confidence: 82 / 100
Questions answered: 20 of 20 -- Valid (80% or more questions answered)

PRE Score Legend

The PRE Score is calculated by adding the point totals for each (answered) question.
< 13 : Low Potential Risk
13 - 15 : Moderate Potential Risk
> 15 : High Potential Risk

Questions Answered Legend

It is important to answer at least 16 questions to consider a PRE Score as "valid".
>= 16 : valid (80% or more questions answered)
<= 15 : invalid (not enough questions answered)

Organization Ownership and Content Privacy

Organization: California Invasive Plant Council (Cal-IPC)
Content Privacy: Public

Evaluation Reviewers

The PRE approach is to base decisions on science and make decisions by consensus of diverse horticultural stakeholders. The literature review and process of answering PRE's questions are based on science; the decisions of which plants to prioritize are based on consensus. To ensure this process is in place and that PRE is collaborative, volunteer stakeholders are recruited from each region to review evaluations. The following experts in their profession (plant science, conservation, or horticultural trade) have participated as volunteer PRE reviewers for this evaluation:

• Scott Oneto	January 4, 2022
• Elizabeth D. Brusati	October 18, 2021
• Alex Simmons	October 18, 2021
• Marie Jasieniuk	August 19, 2021

This evaluation has a total of 4 reviewer(s).

Evaluation Issues

The following section lists all public issues for this evaluation. Issues provide a way for stakeholder reviewers to communicate any concerns or suggestions they might have with the plant or evaluation. Please email info@plantright.org if additional action is required to resolve open issues.

Issue ID # 7815

Date Created: January 4, 2022 - 10:03am
Date Updated: January 4, 2022 - 10:07am

Submitted by: Jutta Burger

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q19. Are the plant’s propagules frequently dispersed long distance (>100 m) by wind or water?

Issue Description

Seed weight only relates to wind dispersal. Sesbania spreads readily in riparian areas. Arum is listed as potentially very invasive in riparian habitats- seen in rip veg in WA. It seems that it could spread in these systems, particularly lower energy systems in wooded uplands. So at minimum, state water dispersal could occur, but has not been documanted yet. (or has it it in Argentina?, did not look at that paper.) -- Jason Giessow

Issue Resolution (Screener's Response to Issue)

Seed/fruit weight is a factor for dispersal by water if the seed/fruit is otherwise not bouyant. But you are right, we don't know that. I reduced confidence to "low" for this question.

Issue ID # 7409

Date Created: October 18, 2021 - 8:17am
Date Updated: October 18, 2021 - 9:20am

Submitted by: Elizabeth D. Brusati

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Evaluation as a whole

Issue Description

PRE reviewed by Elizabeth Brusati

Issue Resolution
No resolution has been entered for this issue.

Issue ID # 6895

Date Created: August 19, 2021 - 2:30pm
Date Updated: October 15, 2021 - 11:17pm

Submitted by: Marie Jasieniuk

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q05. Are other species of the same genus invasive in a similar climate?

Issue Description

Q05. Since the question specifically asks about the species invasiveness, the phrase about it being naturalized and its associated citation should be deleted. Also, the comment about A. italicum being able to hybridize with A. maculatum should be deleted unless some evidence for the hybrids being invasive is presented or some statement is made about the potential invasiveness of the hybrids. MJ

Issue Resolution (Screener's Response to Issue)

Text modified as requested.

Issue ID # 6894

Date Created: August 19, 2021 - 2:26pm
Date Updated: October 18, 2021 - 9:20am

Submitted by: Marie Jasieniuk

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q02. Is the species (or cultivar or variety) noted as being naturalized elsewhere in the US or world in a similar climate?

Issue Description

Q2. As suggested for Q1, it would be informative to add where the species is native. MJ

Issue Resolution (Screener's Response to Issue)

I have added a list of regions where it is native along with references.

Issue ID # 6893

Date Created: August 19, 2021 - 2:23pm
Date Updated: October 15, 2021 - 5:53pm

Submitted by: Marie Jasieniuk

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q01. Has the species (or cultivar or variety, if applicable) become naturalized where it is not native?

Issue Description

Q1. It would be informative to add where it is native to separate the region out from where it is

naturalized and not native. MJ

Issue Resolution (Screener's Response to Issue)

Good point. I have added information on where it is native.

Issue ID # 6892

Date Created: August 19, 2021 - 2:20pm
Date Updated: October 15, 2021 - 5:57pm

Submitted by: Marie Jasieniuk

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q01. Has the species (or cultivar or variety, if applicable) become naturalized where it is not native?

Issue Description

It would be informative to add where it is native to separate the region out from where it is naturalized and not native. MJ

Issue Resolution (Screener's Response to Issue)

Added information about native range in text.

Issue ID # 6891

Date Created: August 19, 2021 - 1:25pm
Date Updated: October 15, 2021 - 11:46pm

Submitted by: Marie Jasieniuk

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q02. Is the species (or cultivar or variety) noted as being naturalized elsewhere in the US or world in a similar climate?

Issue Description

Q1. In addition to stating where the species has naturalized, it would be informative to add where it is native. MJ

Issue Resolution (Screener's Response to Issue)

This issue was resolved previously by adding information on native distribution.

Issue ID # 6857

Date Created: August 17, 2021 - 3:27pm
Date Updated: October 15, 2021 - 5:20pm

Submitted by: PRE Data Manager

Status: Fixed
Type: Suggestion
Severity: Major
Scope: Q07. Does this plant displace native plants and dominate the plant community in areas where it has been established?

Issue Description

Should be at least medium confidence to justify a "yes" answer. (Alex Stubblefield)

Issue Resolution (Screener's Response to Issue)

Although a "yes" is acceptable with low confidence I see that evidence with a source should probably be higher confidence. Upgraded to "medium" confidence.

Issue ID # 6856

Date Created: August 17, 2021 - 3:26pm
Date Updated: October 15, 2021 - 11:40pm

Submitted by: PRE Data Manager

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q06. Is the species found predominately in a climate matching the region of concern?

Issue Description

Add climate matching map as reference. (Alex Stubblefield)

Issue Resolution (Screener's Response to Issue)

Reference added.

Issue ID # 6855

Date Created: August 17, 2021 - 3:25pm
Date Updated: October 15, 2021 - 11:44pm

Submitted by: PRE Data Manager

Status: Fixed
Type: Comment
Severity: Minor
Scope: Q06. Is the species found predominately in a climate matching the region of concern?

Issue Description

Again, I think high confidence would be appropriate here. (Alex Stubblefield)

Issue Resolution (Screener's Response to Issue)

I would opt for keeping this confidence at "medium" because Arum does occur in many areas that do no match California climate.

Issue ID # 6854

Date Created: August 17, 2021 - 3:24pm
Date Updated: October 15, 2021 - 11:38pm

Submitted by: PRE Data Manager

Status: Fixed
Type: Comment
Severity: Minor
Scope: Q05. Are other species of the same genus invasive in a similar climate?

Issue Description

I think with the references for this question a high confidence level could be used here. (Alex Stubblefield)

Issue Resolution (Screener's Response to Issue)

Seems reasonable. I've changed confidence to 'high'.

Issue ID # 6853

Date Created: August 17, 2021 - 3:23pm
Date Updated: October 15, 2021 - 6:03pm

Submitted by: PRE Data Manager

Status: Fixed
Type: Suggestion
Severity: Minor

Scope: Q04. Is the species (or cultivar or variety) noted as being invasive in the US or world in a similar climate?

Issue Description

Add climate match map as a reference. (Alex Stubblefield)

Issue Resolution (Screener's Response to Issue)

Added Climate Match map reference.

Issue ID # 6852

Date Created: August 17, 2021 - 3:22pm
Date Updated: October 15, 2021 - 5:58pm

Submitted by: PRE Data Manager

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q01. Has the species (or cultivar or variety, if applicable) become naturalized where it is not native?

Issue Description

Please state where the species is native to. (Alex Stubblefield)

Issue Resolution (Screener's Response to Issue)

Added information about native range in text.

Issue ID # 6462

Date Created: April 22, 2021 - 1:31pm
Date Updated: July 28, 2021 - 10:32am

Submitted by: Elizabeth D. Brusati

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q20. Are the plant’s propagules frequently dispersed via contaminated seed, equipment, vehicles, boats or clothing/shoes?

Issue Description

Could also add that the seeds don't have structures that would allow them to attach to boots or clothes

Issue Resolution (Screener's Response to Issue)

Have added note that fruits and seeds also do not carry barbs or hooks that could aid in transport.

Issue ID # 6461

Date Created: April 22, 2021 - 1:30pm
Date Updated: July 28, 2021 - 10:31am

Submitted by: Elizabeth D. Brusati

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q19. Are the plant’s propagules frequently dispersed long distance (>100 m) by wind or water?

Issue Description

Do you have a reference that mentions heavy seeds?

Issue Resolution (Screener's Response to Issue)

I have add reference to Mendez (1997), who reported an average seed weight of 33mg and 39mg.

Issue ID # 6460

Date Created: April 22, 2021 - 1:29pm
Date Updated: July 28, 2021 - 10:31am

Submitted by: Elizabeth D. Brusati

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q18. Are the plant’s propagules dispersed long distance (>100 m) by mammals or birds or via domestic animals?

Issue Description

I'm not convinced that this is enough evidence for frequently, and I would definitely move the confidence lower. Mammals don't disperse it and I don't see strong evidence that birds disperse it frequently. The only reference cited is for ants and yet it's the dispersal by birds that is the basis for the Yes answer.

Issue Resolution (Screener's Response to Issue)

Added additional references to support >100m dispersal. Reduced confidence to "medium".

Issue ID # 6459

Date Created: April 22, 2021 - 1:24pm
Date Updated: July 28, 2021 - 10:29am

Submitted by: Elizabeth D. Brusati

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q11. Does this species (or cultivar or variety) reproduce and spread vegetatively?

Issue Description

With the level of references here, I think Very High confidence would be justified

Issue Resolution (Screener's Response to Issue)

Changed to 'high' confidence.

Issue ID # 6458

Date Created: April 22, 2021 - 1:22pm
Date Updated: July 28, 2021 - 10:28am

Submitted by: Elizabeth D. Brusati

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Q06. Is the species found predominately in a climate matching the region of concern?

Issue Description

I would like to see more of the references added here to justify it.

Issue Resolution (Screener's Response to Issue)

Added additional references from other regions matching climate.

Issue ID # 6457

Date Created: April 22, 2021 - 1:19pm
Date Updated: July 28, 2021 - 10:32am

Submitted by: Elizabeth D. Brusati

Status: Fixed

Type: Suggestion
Severity: Minor
Scope: Q02. Is the species (or cultivar or variety) noted as being naturalized elsewhere in the US or world in a similar climate?

Issue Description

If it's already documented as being naturalized in California (via Calflora, for instance) add that information to this question. "Climate like California' includes California itself. Plus the GBIF data from CA probably come at least partly from Calflora.

Issue Resolution (Screener's Response to Issue)

Added reference to species being naturalized in CA (w Calflora reference).

About PRE and this Plant Evaluation Report

The Plant Risk Evaluator (PRE) is an online database and platform designed to assess the risk of a plant becoming invasive in a given region.This tool offers many benefits, and we encourage you to visit the PRE website (https://pretool.org) for more information.

If you would like to learn more about PRE, please email us at info@plantright.org, requesting a PRE Account.

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