Plant Risk Evaluator -- PRE™
Evaluation Report

Scilla siberica -- Minnesota

2017 Farm Bill PRE Project

PRE Score: 11 -- Accept (low risk of invasiveness)
Confidence: 86 / 100
Questions answered: 20 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Completed

Evaluation Date: July 12, 2017

This PDF was created on June 15, 2018

Plant Evaluated

Scilla siberica

Image by Dominicus Johannes Bergsma

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Scilla siberica*) 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

Scilla siberica is one of numerous plants that have a reputation for being invasive in garden beds, but the extent of their invasiveness is limited or unsubstantiated in natural areas. S. siberica has been noted as having escaped cultivation, and has thus naturalized, but the vast majority of these areas are non-natural areas such as lawns or parks.

General Information

Status: Completed
Screener: Mike Monterusso
Evaluation Date: July 12, 2017

Plant Information

Plant: *Scilla siberica*

Regional Information

Region Name: Minnesota

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 in an original article published at the University of California, Davis, and can be found on the PLOS One website, 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** points to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Scilla siberica has naturalized in several states and provinces.

Reference(s):

- United States Department of Agriculture (2017). Plants Profile for Scilla siberica (Siberian squill).

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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** points to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Scilla siberica has naturalized in Wisconsin

Reference(s):

- United States Department of Agriculture (2017). Plants Profile for Scilla siberica (Siberian squill).

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

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

Answer / Justification:

Scilla siberica is noted as being invasive by the Minnesota Wildflower organization, which is a well-respected resources available to the general public [interested in learning] about plants growing wild in Minnesota.

Reference(s):

- Minnesota Wildflowers (2017). Scilla siberica (Siberian Squill): Minnesota Wildflowers.

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** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Scilla siberica is noted as being invasive by the Minnesota Wildflower organization.

Reference(s):

- Minnesota Wildflowers (2017). Scilla siberica (Siberian Squill): Minnesota Wildflowers.

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

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

Answer / Justification:

None found.

Reference(s):

- [Anonymous] .

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

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

Answer / Justification:

In reviewing GBIF, Scilla siberica is found predominately in Europe and the Northeastern North America.

Reference(s):

- GBIF (2017). Scilla siberica Haw. - Checklist View.

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

Answer / Justification:

While some anecdotal (non-scientific) references can be found describing how this plant "could" displace native plants, there is no evidence that this has occurred in natural areas. It can be prolific in lawns and other non-natural areas. In instances where it has escaped into natural areas, it does not appear to dominate or smother existing plant communities.

Reference(s):

- [Anonymous] .

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

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

Answer / Justification:

No evidence found.

Reference(s):

- [Anonymous] .

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

Answer / Justification:

No evidence found.

Reference(s):

- [Anonymous] .

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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** points to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

No evidence found.

Reference(s):

- [Anonymous] .

Reproductive Strategies (Questions 11 - 17)

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

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

Answer / Justification:

"...plants that will naturalize rapidly by bulb offshoots and self-seeding." (Missouri Botanical Garden)

Reference(s):

- Missouri Botanical Garden (2017). Scilla siberica 'Spring Beauty' - Plant Finder.

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

Answer / Justification:

As a bulb, Scilla siberica does reproduce by bulb division. However, this type of reproduction does not appear to be consistent with the intent of the question.

Reference(s):

- [Anonymous] .

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

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

Answer / Justification:

"...plants that will naturalize rapidly by bulb offshoots and self-seeding." (Missouri Botanical Garden)

Reference(s):

- Missouri Botanical Garden (2017). Scilla siberica 'Spring Beauty' - Plant Finder.

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

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

Answer / Justification:

Each individual plant produces just a few seeds... perhaps 20 or so. However, if an entire colony is consider it could reach 1000. (personal observation)

Reference(s):

- [Anonymous] .

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** points to the total PRE score.
- The *screener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

While no specific information could be found, given the prolific nature of the plant it is relatively safe to assume that the germination rate is at least 25%.

Reference(s):

- [Anonymous] .

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** points to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Anecdotal information suggests that Scilla takes 3+ years to flower from seed.

Reference(s):

- The National Gardening Association (2017). Siberian Squill (Scilla siberica) - Garden.org.

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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: **No**, which contributes **0** points to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Scilla siberica sets seed once/year (personal observation).

Reference(s):

- [Anonymous] .

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

Answer / Justification:

No evidence found, although seeds and bulbs (or bulb fragments) could theoretically be moved by birds or small mammals.

Reference(s):

- [Anonymous] .

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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** points to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

No evidence found.

Reference(s):

- [Anonymous] .

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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** points to the total PRE score.
- The *screener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

No evidence found.

Reference(s):

- [Anonymous] .

Total PRE Score

PRE Score: 11 -- Accept (low risk of invasiveness)
Confidence: 86 / 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 : accept (low risk of invasiveness)
13 - 15 : evaluate further
> 15 : reject (high risk of invasiveness)

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: 2017 Farm Bill PRE Project
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:

• Laura Van Riper	December 18, 2017
• Tom Buechel	November 10, 2017

This evaluation has a total of 2 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 PlantRight@suscon.org if additional action is required to resolve open issues.

Issue ID # 5968

Date Created: November 27, 2017 - 10:28am
Date Updated: November 30, 2017 - 8:22am

Submitted by: Laura Van Riper

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

Issue Description

The tone in the evaluation summary is strange. "the economic and environmental impact is speculative at worst." is odd phrasing for a scientific review. It seems that there haven't been studies on the economic or environmental impact and that could just be stated.

The EDDMapS reports of scilla in Minnesota (https://www.eddmaps.org/distribution/viewmap.cfm?sub=17359) have reports of scilla in non-landscaped areas (parks) in both the central and northeast part of the state. These reports of scilla naturalizing in non-yard areas could be acknowledged.

Issue Resolution (Screener's Response to Issue)

Summary language modified. The USDA Plants database and the Minnesota Wildflower Association both note the naturalization of this plant in natural areas such as parks. The screener's position is that the naturalization of this plant has little or no economic impact, thereby limiting its invasive status.

About PRE and this Plant Evaluation Report

The PlantRight Plant Risk Evaluator -- PRE is an online database and platform enabling those involved in non-native, terrestrial plant production to know before they grow if a plant poses a regional invasive risk. This tool offers many benefits, and we encourage you to visit the PRE website (https://pre.ice.ucdavis.edu) for more information.

If you are a nursery trade association, or involved in the research, development or distribution of horticultural plants we invite you to join the PRE community. If you are a plant scientist, affiliated with a horticultural college or botanic garden, and would like to learn more about becoming a PRE Screener, please drop us an email, PlantRight@suscon.org, requesting a PRE Account.

PRE beta funding is provided by Sustainable Conservation (http://www.suscon.org/) and a USDA Farm Bill grant.