Plant Risk Evaluator -- PRE™
Evaluation Report

Lilium szovitsianum -- Illinois

2017 Farm Bill PRE Project

PRE Score: 6 -- Accept (low risk of invasiveness)
Confidence: 49 / 100
Questions answered: 20 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Submitted

Evaluation Date: August 4, 2017

This PDF was created on June 15, 2018

Plant Evaluated

Lilium szovitsianum

Image by Michael Kesl

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Lilium szovitsianum*) 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.

General Information

Status: Submitted
Screener: Emily Russell
Evaluation Date: August 4, 2017

Plant Information

Plant: *Lilium szovitsianum*

Regional Information

Region Name: Illinois

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

Answer / Justification:

There are no reports of Lilium szovitsianum naturalizing where it is not native.

Reference(s):

- [Anonymous] .

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

Answer / Justification:

There are no reports of Lilium szovitsianum naturalizing where it is not native.

Reference(s):

- [Anonymous] .

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

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

Answer / Justification:

There are no reports of Lilium szovitsianum as an invasive species.

Reference(s):

- [Anonymous] .

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

Answer / Justification:

There are no reports of Lilium szovitsianum as an invasive species.

Reference(s):

- [Anonymous] .

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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 **Low** confidence in this answer based on the available literature.

Answer / Justification:

Lilium lancifolium is naturalized in Illinois but there is no evidence of significant damage. The Global Compendium of Weeds has many citations for Lilium species, but mostly as naturalized, casual alien, or cultivation escape. Descriptions of significant damage in a similar climate could not be located.

Reference(s):

- Hilty, J. (2016). Tiger Lily (Lilium lancifolium).
- Randall, R. (2012). A Global Compendium of Weeds. 2nd 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** points to the total PRE score.
- The *screener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Lilium szovitsianum is primarily found in the Caucasus, which shares a climate with Illinois.

Reference(s):

- Euro+Med Plantbase (2006). Lilium szovitsianum. In: The Euro+Med Plantbase Project.
- National Germplasm Resources Laboratory (0). Lilium monadelphum M. Bieb. var. szovitsianum (Fisch. & Avé-Lall.) Elwes. In: Taxonomy - GRIN-Global Web v 1.9.8.2.

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 **Low** confidence in this answer based on the available literature.

Answer / Justification:

There is no evidence that Lilium szovitsianum dominates 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 **Low** confidence in this answer based on the available literature.

Answer / Justification:

There is no evidence that Lilium szovitsianum changes fire regimes.

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 **Low** confidence in this answer based on the available literature.

Answer / Justification:

Lilies are toxic to cats, but do not seem to pose a serious threat to humans, wildlife, or grazing systems.

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 **Medium** confidence in this answer based on the available literature.

Answer / Justification:

There is no evidence that Lilium szovitsianum could form impenetrable thickets.

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 **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Lilies reproduce vegetatively by bulb offsets.

Reference(s):

- [Anonymous] .

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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 **Low** confidence in this answer based on the available literature.

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 **High** confidence in this answer based on the available literature.

Reference(s):

- Crook, D. (2013). Lily Germination By Species.
- Specialty Perennials (2017). Lilium szovitsianum.

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

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

Answer / Justification:

"A lily seed pod contains three compartments each with two rows of seeds in. Typically there are one or two hundred seeds per pod." Lilium szovitsianum plants can produce up to 16-20 flowers per stem. There are no reports of low viability rates.

Reference(s):

- Pacific Bulb Society (2013). Lilium Seeds.
- Specialty Perennials (2017). Lilium szovitsianum.

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

Answer / Justification:

Lilium szovitsianum seeds have delayed hypogeal germination, requiring a period of warmth followed by cold stratification followed by warmth - which could be provided naturally by the climate in Illinois. In addition, "the odd seed will germinate as immediate hypogeal." There are no estimates of germination rates, but seeds are available for sale and home gardeners start seeds with no mention of low germination rates on lily gardening forums.

Reference(s):

- Crook, D. (2013). Lily Germination By Species.
- Specialty Perennials (2017). Lilium szovitsianum.

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

Answer / Justification:

"In zone one this Lilium takes 7 to 8 years from seed to first flower"

Reference(s):

- Pacific Bulb Society (2016). Lilium Candidum Section.

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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 **Medium** confidence in this answer based on the available literature.

Answer / Justification:

"Test species of lilies grow on the average on the 19th of April - 6th of May, and bloom, depending on the genotype - from the 10th of June to the 3d of August. The average duration of species blooming is 12 days (6-24 days)."

Reference(s):

- Sorokopudova, O. Anatolievn (2017). Biological features of species and varieties of the genus Lilium L. when introduced into the forest-steppe of Western Siberia. 36–42.

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 **Low** confidence in this answer based on the available literature.

Answer / Justification:

There is no evidence of long distance dispersal by animals.

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 **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Lily seeds are dispersed by wind but not long distances: they are "carried a little way by the wind" or "the seeds fall a little way from the parent."

Reference(s):

- Beal, W. James (1898). Seed dispersal.
- The Seed Site (0). Dispersal of Seeds by Wind.

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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 **Low** confidence in this answer based on the available literature.

Answer / Justification:

There is no evidence of accidental dispersal by people.

Reference(s):

- [Anonymous] .

Total PRE Score

PRE Score: 6 -- Accept (low risk of invasiveness)
Confidence: 49 / 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:

- John Taft September 28, 2017

This evaluation has a total of 1 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.

There are currently no issues associated with this evaluation.

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.