Plant Risk Evaluator -- PRE™
Evaluation Report

Syringa reticulata -- Minnesota

2017 Farm Bill PRE Project

PRE Score: 7 -- Accept (low risk of invasiveness)
Confidence: 68 / 100
Questions answered: 20 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Completed

Evaluation Date: May 4, 2017

This PDF was created on June 19, 2018

Plant Evaluated

Syringa reticulata

Image by By Herman, D. E., et al. (1996). North Dakota tree handbook. - USDA NRCS [1]

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Syringa reticulata*) 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

This plant was included in our PRE evaluations because seedlings were found near cultivated specimens at the Minnesota Landscape Arboretum. Although Syringa reticulata has the ability to produce copious amounts of seed, it does not disperse the seeds far and saplings grow slowly in the understory. There are limited reports in other states where it has naturalized (New York and Vermont) and it's invasive potential is so far unknown; however, it should be reevaluated for potential invasiveness in the future if additional wild populations are discovered.

General Information

Status: Completed
Screener: Mike Monterusso
Evaluation Date: May 4, 2017

Plant Information

Plant: *Syringa reticulata*

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:

Syringa reticulata has been reported naturalized in New York and Vermont.

Reference(s):

- Springer, J. C., & Parfitt B. D. (2007). Syringa reticulata (Oleaceae) naturalized in northwestern Vermont. Rhodora. 109(938),
- Young, S. (2010). Is Japanese Lilac-tree Invasive?.

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

Answer / Justification:

Saplings of Syringa reticulata were found in a wooded area near Duluth, Minnesota in 2009. These saplings were removed but Schimpf and Bollin stated that "there is a reasonable probability that some of these lilac saplings could eventually reach reproductive status, at which point naturalization could be said to occur."

Reference(s):

- Schimpf, D.J.., Pomroy D.L.., Gatske S.C.., & Green J.C.. (2009). Noteworthy Collections; Minnesota. The Michigan Botanist. 48(2), 49-60.

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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:

New York completed a Non-Native Plant Invasiveness Ranking Form on Syringa reticulata in 2010, but concluded it's invasiveness as "Unknown" due to lack of supporting information.

Reference(s):

- Jordan, M.J.., Moore G.., & T.W. W. (2008). New York Non-Native Plant Invasiveness Ranking Form.

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

Answer / Justification:

There are no climate match areas where it is reported to be invasive

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: **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:

Late lilac (Syringa villosa) is hardy throughout Minnesota's plant hardiness zones and may become weedy or invasive in some habitats.

Reference(s):

- Tober, D.A.. (2013). Plant Guide for Late Lilac (Syringa villosa).

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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:

Syringa reticulata is found throughout plant hardiness zones 4 - 7a in the United States

Reference(s):

- Gillman, E.F.., & Watson D.G.. (1994). USFS Fact Sheet. USFS Fact Sheet ST-610.

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

Answer / Justification:

There is no evidence that Syringa reticulata will displace native plants. The New York WRA reported the ecological impact as "Unknown"

Reference(s):

- Jordan, M.J.., Moore G.., & T.W. W. (2008). New York Non-Native Plant Invasiveness Ranking Form.

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

Answer / Justification:

There is no evidence in the literature that this plant will promote fire

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

Answer / Justification:

There is no evidence in the literature that this plant is a health risk to humans, animals, or fish

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 Syringa reticulata forms impenetrable thickets.

Reference(s):

- [Anonymous] .

Reproductive Strategies (Questions 11 - 17)

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

- 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:

Syringa reticulata is not known to spread by rhizomes or other vegetatative means

Reference(s):

- Springer, J. C., & Parfitt B. D. (2007). Syringa reticulata (Oleaceae) naturalized in northwestern Vermont. Rhodora. 109(938),

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

Answer / Justification:

This plant is not known to reproduce by fragmentation

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.

Answer / Justification:

Syringa reticulata produces viable seeds; however, stratification is normally necessary to break dormancy.

Reference(s):

- West, T.P.., DeMarais S.L.., & Lee C.W.. (2014). Germination of Nonstratified Japanese Tree Lilac Seeds as Influenced by Seed Capsule Maturity and Moisture Content. HortTechnology. 24(2), 177 - 180.

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

Answer / Justification:

Each tree produces numerous upright panicles to 12" long.

Reference(s):

- Missouri Botanical Garden (2017). Syringa reticulata - Plant Finder.

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

Answer / Justification:

Although a 30 to 90 day stratification period is recommended for germination of Syringa reticulata seeds, fall planting of "green" seed can easily produce germination > 25%.

Reference(s):

- West, T.P.., DeMarais S.L.., & Lee C.W.. (2014). Germination of Nonstratified Japanese Tree Lilac Seeds as Influenced by Seed Capsule Maturity and Moisture Content. HortTechnology. 24(2), 177 - 180.

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

Answer / Justification:

Syringa reticulata has a slow to medium growth rate and is shade tolerant. It may be that during invasion, saplings will persist in the understory in a suppressed state for a number of years, than extend more rapidly when light is made available from canopy gaps.

Reference(s):

- Schimpf, D.J.., Pomroy D.L.., Gatske S.C.., & Green J.C.. (2009). Noteworthy Collections; Minnesota. The Michigan Botanist. 48(2), 49-60.

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

Answer / Justification:

According to Dirr, flowering period is early to mid-June and effective for 2 weeks

Reference(s):

- Dirr, M. (2009). Manual of woody landscape plants: their identification, ornamental characteristics, culture, propagation, and uses.

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:

There is no evidence of long-distance dispersal by birds or other 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 **High** confidence in this answer based on the available literature.

Answer / Justification:

Naturalized saplings are rarely found > 100 m from a cultivated tree

Reference(s):

- Springer, J. C., & Parfitt B. D. (2007). Syringa reticulata (Oleaceae) naturalized in northwestern Vermont. Rhodora. 109(938),
- Schimpf, D.J.., Pomroy D.L.., Gatske S.C.., & Green J.C.. (2009). Noteworthy Collections; Minnesota. The Michigan Botanist. 48(2), 49-60.

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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 not provided a confidence score on this question. Consider creating an issue on PRE so the screener can become aware of this detail.

Answer / Justification:

There is no evidence in the literature that Syringa reticulata propagules are dispersed this way.

Reference(s):

- [Anonymous] .

Total PRE Score

PRE Score: 7 -- Accept (low risk of invasiveness)
Confidence: 68 / 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	November 22, 2017
• Tom Buechel	November 9, 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.

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.