Plant Risk Evaluator -- PRE™
Evaluation Report

Lonicera fragrantissima -- Georgia

2017 Farm Bill PRE Project

PRE Score: 15 -- Evaluate this plant further
Confidence: 65 / 100
Questions answered: 19 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Submitted

Evaluation Date: November 13, 2017

This PDF was created on August 13, 2018

Plant Evaluated

Lonicera fragrantissima

Image by Kurt Stüber

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Lonicera fragrantissima*) 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

Sweet breath of spring (Lonicera fragrantissima) is a deciduous shrub that grows up to 6-10' tall and wide. It bears many small, white, and very fragrant flowers in the early spring, followed by small red berries that grow in early to mid summer. L. fragrantissima is naturalized across much of the Eastern U.S. and is listed on the Georgia and South Carolina EPPC sites as well as by the Tennessee Invasive Plant Council.

General Information

Status: Submitted
Screener: Lila Uzzell
Evaluation Date: November 13, 2017

Plant Information

Plant: *Lonicera fragrantissima*

Regional Information

Region Name: Georgia

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

Answer / Justification:

The Global compendium of Weeds indicates that L. fragrantissima has naturalized in the U.S. and Australia. According to GBIF and Kartesz, it has naturalized as far north as New York, south to Georgia, and as far West as Texas. It is also found in Utah.

Reference(s):

- GBIF (0). Lonicera fragrantissima Lindl. & J. Paxton (gbif).
- Kartesz, J. T. (2015). The Biota of North America Program (BONAP).
- Randall, R. Peter (2017). A Global Compendium of Weeds. Third Edition..

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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:

All of the areas within the US in a similar climate excluding areas of the northwest and Florida (not present), and Utah (different climate) contain this species.

Reference(s):

- GBIF (0). Lonicera fragrantissima Lindl. & J. Paxton (gbif).
- Kartesz, J. T. (2015). The Biota of North America Program (BONAP).

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

Answer / Justification:

L. fragrantissima readily invades open woodland areas, abandoned fields, and other similar sites. This plant has been noted as invasive by Tennessee, Georgia, and South Carolina. The Georgia EPPC lists this species as a category 3 invasive "Exotic plant that is a minor problem in Georgia natural areas, or is not yet known to be a problem in Georgia but is known to be a problem in adjacent states". In Tennessee it is listed as an "alert" or, "Possess invasive characteristics; known to be invasive in similar habitats as those found in Tennessee".

Reference(s):

- Georgia Invasive Species Task Force (2017). List of Non-native Invasive Plants in Georgia - Georgia Invasive Species Task Force.
- Tennessee Invasive Plant Council (2009). Invasive Plants – Tennessee Invasive Plant Council.
- Invasive Plant Atlas of the United States (0). sweet breath of spring: Lonicera fragrantissima (Dipsacales: Caprifoliaceae): Invasive Plant Atlas of the United States.
- USDA, & NRCS (2017). The Plants Database.

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

Answer / Justification:

This species is already listed by the GA and South Carolina EPPC, and is listed by the Tennessee invasive plant council. In Georgia, it is listed as a category 3- "Exotic plant that is a minor problem in Georgia natural areas, or is not yet known to be a problem in Georgia but is known to be a problem in adjacent states." It is also listed as an "emerging threat" by the SC-EPPC or, " Invasive Exotic plant species found in South Carolina or in adjacent states, in limited infestations with substantial management difficulties; or widespread with minor management difficulties". In Tennessee it is listed as an "alert" or, "Possess invasive characteristics; known to be invasive in similar habitats as those found in Tennessee".

Reference(s):

- Tennessee Invasive Plant Council (2009). Invasive Plants – Tennessee Invasive Plant Council.
- Georgia Invasive Species Task Force (2017). List of Non-native Invasive Plants in Georgia - Georgia Invasive Species Task Force.
- South Carolina Exotic Pest Plant Council (2014). South Carolina Exotic Pest Plant Council Terrestrial Exotic Invasive Species List 2014.

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

Answer / Justification:

Many other species within the genus Lonicera are invasive to Georgia and areas in a similar climate. In Georgia, L. japonica and L. maakii are listed by the GA-EPPC.

Reference(s):

- Georgia Invasive Species Task Force (2017). List of Non-native Invasive Plants in Georgia - Georgia Invasive Species Task Force.

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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:

This species is found in areas across the eastern US similar in climate to Georgia, in parts of China similar in climate (where L. fragrantissima is native), and is also found in southeastern Australia. It is also present in Europe, but it is hard to decipher and compare the regions similar in climate to Georgia from GBIF to the PlantRight map.

Reference(s):

- GBIF (0). Lonicera fragrantissima Lindl. & J. Paxton (gbif).
- Kartesz, J. T. (2015). The Biota of North America Program (BONAP).

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

Answer / Justification:

This species can form dense thickets in understory- outcompeting native species for light, restricting native plant growth and tree seedling establishment.

Reference(s):

- Munger, G. T. (2005). Lonicera spp. In: Fire Effects Information System.
- Invasive Plant Atlas of the United States (0). sweet breath of spring: Lonicera fragrantissima (Dipsacales: Caprifoliaceae): Invasive Plant Atlas of the United States.

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 lack of information on bush honeysuckle and fire regimes. However, it should be noted that honeysuckle (that is, the Lonicera genus as a whole) could have an effect on oak forests, since they are known to grown in oak-dominated communities, and fire is an important ecological influence to oak forests.

Reference(s):

- Munger, G. T. (2005). Lonicera spp. In: Fire Effects Information System.

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:

There is no evidence that this species is a health risk to humans or animals. Honeysuckle is grazed occasionally by deer and seed dispersal is typically via birds eating honeysuckle berries.

Reference(s):

- Munger, G. T. (2005). Lonicera spp. In: Fire Effects Information System.

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:

Though this species is known to be bushy, growing tall (up to 10') and wide, it is not known to produce impenetrable thickets to animals or humans (Note: this species does form "dense understory thicket which can restrict native plant growth").

Reference(s):

- Missouri Botanical Garden PlantFinder (0). Lonicera fragrantissima - Plant Finder.
- Invasive Plant Atlas of the United States (0). sweet breath of spring: Lonicera fragrantissima (Dipsacales: Caprifoliaceae): Invasive Plant Atlas of the United States.

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:

" In established populations, vegetative sprouting also aids in the persistence of these exotic shrubs."

Reference(s):

- TexasInvasives.org (0). Texas Invasives Lonicera fragrantissima.

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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:

There is no evidence of this. Since large populations are able to spread vegetatively, this does not seem "common" and does not seem to be a means of reproduction for new L. fragrantissima species.

Reference(s):

- TexasInvasives.org (0). Texas Invasives Lonicera fragrantissima.

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

Answer / Justification:

Left blank.

Reference(s):

- [Anonymous] .

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

Answer / Justification:

There is no direct evidence of seed set, but berries are "abundant" and an excerpt on the showy fly honeysuckle states that "a 'typical' plant may produce >20,000 seeds annually"

Reference(s):

- Munger, G. T. (2005). Lonicera spp. In: Fire Effects Information System.
- TexasInvasives.org (0). Texas Invasives Lonicera fragrantissima.

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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: **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 little information available for L. fragrantissima, but "Sweet breath of spring seeds require warm plus cold stratification prior to breaking dormancy. Although seeds mature in late spring/early summer, they generally will not germinate until late winter/early spring of the following year". Given that they need warm and cold stratification and do not germinate until late the following year, I have answered "No" for this question.

Reference(s):

- Munger, G. T. (2005). Lonicera spp. In: Fire Effects Information System.

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

Answer / Justification:

There is little information on L. fragrantissima viable see production after germination. Other Lonicera species (Amur and Showy fly honeysuckles) take anywhere from 3-8 years. Since these other honeysuckle species took greater than or equal to 3 years to reach reproductive age I answered "No" to this question.

Reference(s):

- Munger, G. T. (2005). Lonicera spp. In: Fire Effects Information System.

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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:

Bloom time is from March- April for this species and fruit ripens in mid-summer. The fruits typically last through winter. It does not seem as though this species continuously produces seed for >3 months nor produces seed more than once a year.

Reference(s):

- Missouri Botanical Garden PlantFinder (0). Lonicera fragrantissima - Plant Finder.
- Invasive Plant Atlas of the United States (0). sweet breath of spring: Lonicera fragrantissima (Dipsacales: Caprifoliaceae): Invasive Plant Atlas of the United States.

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

Answer / Justification:

The most common method of seed dispersal for L. fragrantissima and many Lonicera in general, is via birds.

Reference(s):

- Munger, G. T. (2005). Lonicera spp. In: Fire Effects Information System.
- Missouri Botanical Garden PlantFinder (0). Lonicera fragrantissima - Plant Finder.

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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:

There is no evidence that L. fragrantissima spreads its seeds via wind or water.

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

Answer / Justification:

There is no evidence that propagules are dispersed via these methods.

Reference(s):

- [Anonymous] .

Total PRE Score

PRE Score: 15 -- Evaluate this plant further
Confidence: 65 / 100
Questions answered: 19 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:

- Shelly Matthew Prescott January 4, 2018

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.