



***Plant Risk Evaluator -- PRE™
Evaluation Report***

Lonicera japonica -- Georgia

2017 Farm Bill PRE Project

PRE Score: 20 -- Reject (high risk of invasiveness)

Confidence: 62 / 100

Questions answered: 20 of 20 -- Valid (80% or more questions answered)

Privacy: Public

Status: Submitted

Evaluation Date: November 8, 2017

This PDF was created on August 13, 2018



Plant Evaluated

Lonicera japonica



Image by Aftabnoori, Wikipedia user



Evaluation Overview

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

Japanese honeysuckle is a non-native invasive plant from Japan, Korea, and eastern China, occurs in thickets in its native range. It is naturalized in several in 42 states and Puerto Rico and other parts of the world like Australia and New Zealand. It is believed to have reached Central and South America, but there is a need for more research on those areas. Japanese honeysuckle is a trailing perennial that climbs arboreal canopy or densely covers the ground surface. Flowering can happen after a year of germination or two years. In both the northern and southern hemisphere, fruit and seed dispersal is performed by a wide range of bird and mammals (big and small).

General Information

Status: Submitted

Screener: Melina Lozano Duran

Evaluation Date: November 8, 2017

Plant Information

Plant: *Lonicera japonica*

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

Answer / Justification:

Japanese honeysuckle, its native of Eastern Asia and it is a well established introduced ornamental vine in the US. Reported to be invasive throughout the eastern US. It is adapted to a wide variety of habitats, full sun to shade.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
-

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

Answer / Justification:

Lonicera Japonica seems to have adapted to areas outside its native range, and its naturalized in areas from Maine to Florida, west Wisconsin, and Texas. It has adapted to a wide range of habitats from full sun to shade.



Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
-

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

Answer / Justification:

Japanese honeysuckle is present in 42 states and Puerto Rico has become a pest in the drier parts of North America where there is irrigation. In the Pacific Islands becoming a management problem for Kauai, Oahu, East Maui, and Hawaii. It also has become a serious threat to native vegetation in Australia and New Zealand.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
-

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

Answer / Justification:

Japanese honeysuckle is an introduced species from Japan, and according to PRE climate match map in contrast with GBIF *Lonicera japonica* occurrences map, it can be found in areas where the climate is a match for GA.



Reference(s):

- UF / IFAS Center for Aquatic and Invasive Plants (2017). *Lonicera japonica* – UF/IFAS Center for Aquatic and Invasive Plants-MLD.
 - Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
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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 *screeener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

Family Caprifoliaceae have several honeysuckles considered invasive like *Lonicera maackii*, in Connecticut has been banned, Massachusetts is prohibited and in Vermont is under class B noxious weed classification. *Lonicera morrowii* native of Japan and Korea, invades open woodlands, old fields, and other disturbed sites. *Lonicera tatarica* native of Southern Russia to Central Asia can form extremely dense understory thicket that restricts native plant growth and tree seedling establishment.

Reference(s):

- Invasive Plant Atlas of the United States (2015). Invasive Plant Atlas-*Lonicera morrowii*.
 - New York Botanical Garden (2008). New York Botanical Garden-Mistaken Identity-*Lonicera* sp.
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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 *screeener* has a **Medium** confidence in this answer based on the available literature.



Answer / Justification:

According to GBIF *Lonicera japonica* world distribution map and an overlap with PRE climate match for GA, the species distributes in the same regions of the world with a climate match.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
 - GBIF (2017). GBIF-*Lonicera japonica*-Word Map Occurrences.
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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 *screeners* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

Lonicera japonica is a fast growing vine that coils around stems of shrubs and other herbaceous plants. In full sun large tangles smother and kill vegetation. It presents a serious threat to forest and orchards through water competition and general interference of farming operations.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
 - UF / IFAS Center for Aquatic and Invasive Plants (2017). *Lonicera japonica* – UF/IFAS Center for Aquatic and Invasive Plants-MLD.
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8. Is the plant noted as promoting fire and/or changing fire regimes?

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



Answer / Justification:

Lonicera japonica is considered an essential species in the disruption of fire regimes throughout the eastern U.S. According to a report in areas of fire suppression, Japanese honeysuckle competes for light gaps, establishes ground biomass and its hypothesized to promote the growth of other shade-tolerant species.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
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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** points to the total PRE score.
- The *screeener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

According to one source, Japanese honeysuckle is displacing the flora that provides habitat for marsupial ringtail possums in Australia. There is no information about being a health risk for humans and historically in its area of origin has been used for medicinal purposes, nevertheless is not recognized as safe by the US- FDA.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
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10. Does the plant produce impenetrable thickets, blocking or slowing movement of animals, livestock, or humans?

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



Answer / Justification:

Japanese honeysuckle is a trailing perennial that climbs into arboreal canopy or spreads its cover to the ground surface. Its stems become densely tangled during growth. According to a source, it competes for water resources in orchards and other agricultural settings.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
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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 *screeener* has a **Low** confidence in this answer based on the available literature.

Answer / Justification:

Japanese honeysuckle is capable of reproducing vegetatively via root and rhizomes, but it mainly reproduces and spreads by seed through birds and mammal dispersal. Animals disseminate fruit and seed ensuring its establishment along edges, fence lines, hedgerows, and other disturbed areas.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
 - Invasive Plant Atlas of the MidSouth (IPAMS) (2008). IPAMS-*Lonicera japonica*-MLD.
-

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



Answer / Justification:

Lonicera japonica even though can reproduce via root and rhizomes, it's primary form of reproduction is by seed production and spreading with the help of birds and small mammals.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
 - Invasive Plant Atlas of the MidSouth (IPAMS) (2008). IPAMS-*Lonicera japonica*-MLD.
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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 *screeener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

The seed of Japanese honeysuckle are dormant and require stratification of 5 to 8 C for 60 days. Germination begins at temperatures of 10C. After three years seed availability is 1 to 3 % and thus relies on dispersal just before or following disturbance. Seedling survival with adequate moisture is 60% in 2 % full sun and 100% at 3% full sun.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
 - Invasive Plant Atlas of the MidSouth (IPAMS) (2008). IPAMS-*Lonicera japonica*-MLD.
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14. Does this plant produce copious viable seeds each year (> 1000)?

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



Answer / Justification:

The flowering of j.honeysuckle has been observed to begin a year after germination, but it mostly starts after the second year. A mature stem of 30 cm long will produce approximately 27 flowers, and with no controlled pollination 57% of flowers will produce fruit that contains 1 to 10 seeds. Under ideal growing conditions, flowering period can last for eight months.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
 - Global Invasive Species Database (0). Global Invasive Species Database-Fallopia japonica.
-

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

Answer / Justification:

This can be a no or a yes answer depending on the region where *Lonicera japonica* establishes, according to two sources germination begins at temperatures of approximately 10 C but is greatest from 18 to 25 C. Seed can be dormant for a year, but in GA can germinate quick.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
-

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



Answer / Justification:

The flowering of *Lonicera japonica* has been observed to be within a year after germination. It has a limited tolerance to drought, it has a need for seed stratification, a need for obligate outcrossing, it has limited weed viability after one year, and its susceptible to temperatures below zero.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
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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 *screeener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

In its naturalized range in the US, *Lonicera japonica* produces an abundance of flowers and is anecdotally reported to produce abundantly from seed. But there is not quantity data is sufficient to support this.

Reference(s):

- Larson, K. C., Fowler S. P., & Walker J. C. (2002). Lack of pollinators limits fruit set in *Lonicera japonica*. *The American Midland Naturalist*. 54-60.
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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 *screeener* has a **High** confidence in this answer based on the available literature.



Answer / Justification:

"The fruits of Japanese honeysuckle provide a dependable source of protein and nutrients for and the seeds are distributed by birds and small mammals wherever it occurs (Miller and Miller, 1989). Japanese honeysuckle fruits have been observed being eaten by wild turkeys, bobwhites, mockingbirds, whitethroated sparrows, white-crowned sparrows, slate-colored juncos, American robins, purple ?nches, gold?nches, bluebirds, pine grosbeaks, hermit thrushes, and house ?nches in North America (Martin et al., 1951; Handley, 1945)"

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
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19. Are the plant's propagules frequently dispersed long distance (>100 m) by wind or water?

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

Answer / Justification:

Lonicera japonica depends on animal dispersion mostly, and there is not sufficient information about how elements like water and wind help it disperse effectively.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.
-

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 *screeners* has a **Very Low** confidence in this answer based on the available literature.



Answer / Justification:

Lonicera japonica mechanism of dispersion is mostly done by animals, birds, and mammals. It can come in contact with humans but there is not enough information about if it can be dispersed by them. Also, it can come in contact with big ag machines and motor vehicles, but there is not enough information about this either.

Reference(s):

- Schierenbeck, K. A. (2004). Japanese Honeysuckle as an invasive species, History, Ecology and Context.

Total PRE Score

PRE Score: 20 -- Reject (high risk of invasiveness)

Confidence: 62 / 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 "Doc" Ruter

January 10, 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.