Plant Risk Evaluator -- PRE™
Evaluation Report

Rosa multiflora -- Georgia

2017 Farm Bill PRE Project

PRE Score: 18 -- Reject (high risk of invasiveness)
Confidence: 73 / 100
Questions answered: 18 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Submitted

Evaluation Date: November 3, 2017

This PDF was created on August 13, 2018

Plant Evaluated

Rosa multiflora

Image by JoJan, Wikipedia user

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Rosa multiflora*) 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

Rosa multiflora (multiflora rose) is native to Eastern China, Japan, and Korea. It was introduced to the U.S. as an ornamental in the late 1800's and has become a prolific invasive in many states since. This thorny, perennial shrub is capable of producing thousands of viable seeds that remain viable or up to 20 years. It thrives in sunny areas with well-drained soils, but is capable of tolerating a wide range of environmental conditions. It is currently listed as a category 1 invasive in Georgia, " Exotic plant that is a serious problem in Georgia natural areas by extensively invading native plant communities and displacing native species" (GA-EPPC). There are a variety of removal methods for R. multiflora, that include mechanical and chemical control. Removal methods should be used when possible to prevent this species from affecting native plants within forested areas.

General Information

Status: Submitted
Screener: Lila Uzzell
Evaluation Date: November 3, 2017

Plant Information

Plant: *Rosa multiflora*

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:

"Present distribution is throughout the United States with the exception of the southeastern coastal plains, Rocky Mountains, and western desert areas." It also appears to be present throughout Europe and New Zealand.

Reference(s):

- Southeast Exotic Pest Plant Council (2017). Multiflora Rose, Rosa multiflora - Southeast Exotic Pest Plant Council Invasive Plant Manual.
- GBIF (2017). Rosa multiflora Thunb..

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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:

Rosa multiflora appears to present in most climates similar to Georgia's. Rosa multiflora grows within USDA hardiness zones 5 to 8.

Reference(s):

- Freeport Middle School (2017). Multiflora Rose, Rosa muliflora - Maine invasive.
- GBIF (2017). Rosa multiflora Thunb..

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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:

This species is invasive to most states within the U.S. and is invasive to New Zealand, Taiwan, and Pakistan.

Reference(s):

- CABI (2017). Rosa multiflora (Multiflora rose).
- Munger, G. T. (2002). Rosa multiflora. In: Fire Effects Information System.
- Freeport Middle School (2017). Multiflora Rose, Rosa muliflora - Maine invasive.
- Cornell University (2017). NYIS.

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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 invasive in many states of the U.S. that are similar in climate to Georgia. Additionally, this species is invasive in New Zealand, where the climate is similar.

Reference(s):

- GBIF (2017). Rosa multiflora Thunb..
- Freeport Middle School (2017). Multiflora Rose, Rosa muliflora - Maine invasive.
- United States Department of Agriculture (2017). Invasive Species: Plants - Multiflora Rose (Rosa multiflora).

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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:

The seaside rose is invasive in Connecticut and "...is now found in natural areas in Australia, New Zealand, Europe and North America."

Reference(s):

- The University of Georgia - Center for Invasive Species and Ecosystem Health (2016). Seaside rose: Rosa rugosa (Rosales: Rosaceae): Invasive Plant Atlas of the United States.

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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:

Most sources show that this species is found in areas with similar climate. However, this species is known to adapt well to a varitey of different habitats. " This plant thrives in sunny areas with well-drained soil but can tolerate a wide range of soil and environmental conditions".

Reference(s):

- US Forest Service (2017). Forest Invasive Plants Resource Center- Multiflora Rose.
- Southeast Exotic Pest Plant Council (2017). Multiflora Rose, Rosa multiflora - Southeast Exotic Pest Plant Council Invasive Plant Manual.
- Cornell University (2017). NYIS.
- GBIF (2017). Rosa multiflora Thunb..

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

Answer / Justification:

Several sources indicate that Rosa multiflora is capable of smothering plant communities.

Reference(s):

- US Forest Service (2017). Forest Invasive Plants Resource Center- Multiflora Rose.
- D&R Greenway Land Trust (2017). Multiflora rose fact sheet.
- Bergmann, C., & Swearingen J. M. (2009). PCA Alien Plant Working Group - Multiflora Rose (Rosa multiflora).
- United States Department of Agriculture (2017). Invasive Species: Plants - Multiflora Rose (Rosa multiflora).
- Freeport Middle School (2017). Multiflora Rose, Rosa muliflora - Maine invasive.
- Southeast Exotic Pest Plant Council (2017). Multiflora Rose, Rosa multiflora - Southeast Exotic Pest Plant Council Invasive Plant Manual.
- Cornell University (2017). NYIS.

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

Answer / Justification:

There is no information regarding this species promoting fire/ changing fire regimes.

Reference(s):

- Munger, G. T. (2002). Rosa multiflora. In: Fire Effects Information System.

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

Answer / Justification:

"This plant forms impenetrable, thorny thickets that make forestry work difficult and painful. The hooked thorns are known to puncture vehicle tires as well as inflict deep gashes on unprotected human skin. "

Reference(s):

- US Forest Service (2017). Forest Invasive Plants Resource Center- Multiflora Rose.

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

Answer / Justification:

"Multiflora rose is extremely prolific and can form impenetrable thickets that exclude native plant species. This exotic rose readily invades open woodlands, forest edges, successional fields, savannas and prairies that have been subjected to land disturbance. "

Reference(s):

- Bergmann, C., & Swearingen J. M. (2009). PCA Alien Plant Working Group - Multiflora Rose (Rosa multiflora).

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

Answer / Justification:

This species may reproduce via root stalks. "Multiflora rose reproduces by seed and by forming new plants that root from the tips of arching canes that contact the ground."

Reference(s):

- Bergmann, C., & Swearingen J. M. (2009). PCA Alien Plant Working Group - Multiflora Rose (Rosa multiflora).
- D&R Greenway Land Trust (2017). Multiflora rose fact sheet.

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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:

"R. multiflora canes root at the tip when canes touch the ground, and new stems can also arise from root sprouts and rhizomes (Eastman, 2003, cited in OGTR, 2009), although Doll (2006) claimed that this ‘is not a common phenomenon.’ On the other hand, Christen and Matlack (2009) reported that within-site spread is driven by vegetative propagation in close proximity to parent plants" (CABI).

Reference(s):

- D&R Greenway Land Trust (2017). Multiflora rose fact sheet.
- Bergmann, C., & Swearingen J. M. (2009). PCA Alien Plant Working Group - Multiflora Rose (Rosa multiflora).
- CABI (2017). Rosa multiflora (Multiflora rose).

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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:

This species produces viable seed that can remain viable for up to 20 years.

Reference(s):

- CABI (2017). Rosa multiflora (Multiflora rose).
- D&R Greenway Land Trust (2017). Multiflora rose fact sheet.
- Bergmann, C., & Swearingen J. M. (2009). PCA Alien Plant Working Group - Multiflora Rose (Rosa multiflora).

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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 cane can theoretically produce 17,500 seeds each year; thus each plant has the potential to produce 500,000 seeds every year" (CABI).

Reference(s):

- CABI (2017). Rosa multiflora (Multiflora rose).
- Munger, G. T. (2002). Rosa multiflora. In: Fire Effects Information System.

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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 / Justification:

lack of information.

Reference(s):

- [Anonymous] .

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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 / Justification:

lack of information.

Reference(s):

- [Anonymous] .

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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:

This species produces seed once a year during summer.

Reference(s):

- Bergmann, C., & Swearingen J. M. (2009). PCA Alien Plant Working Group - Multiflora Rose (Rosa multiflora).

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:

Birds deer and rodents are known to consume the berries of R. multiflora. Berries are readily sought after by birds.

Reference(s):

- Bergmann, C., & Swearingen J. M. (2009). PCA Alien Plant Working Group - Multiflora Rose (Rosa multiflora).
- Freeport Middle School (2017). Multiflora Rose, Rosa muliflora - Maine invasive.

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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:

This is not the most frequent means of dispersal for the plant's propagules.

Reference(s):

- Bergmann, C., & Swearingen J. M. (2009). PCA Alien Plant Working Group - Multiflora Rose (Rosa multiflora).
- Freeport Middle School (2017). Multiflora Rose, Rosa muliflora - Maine invasive.

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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:

Lack of evidence.

Reference(s):

- [Anonymous] .

Total PRE Score

PRE Score: 18 -- Reject (high risk of invasiveness)
Confidence: 73 / 100
Questions answered: 18 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:

• Stewart Chandler	January 15, 2018
• John "Doc" Ruter	January 10, 2018

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 # 6295

Date Created: January 15, 2018 - 5:48am
Date Updated: January 19, 2018 - 10:56am

Submitted by: Stewart Chandler

Status: Fixed
Type: Suggestion
Severity: Minor
Scope: Evaluation Notes

Issue Description

The link for the following reference appears to be broken and should be updated or corrected

PCA Alien Plant Working Group - Multiflora Rose https://www.nps.gov/plants/alien/fact/romu1.htm

Issue Resolution (Screener's Response to Issue)

Issue resolved by PRE Data manager -- updated link in bibliographic source. Did not see the source used in Evaluation Notes.

https://www.invasive.org/weedcd/pdfs/wgw/multiflorarose.pdf

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.