Plant Risk Evaluator -- PRE™
Evaluation Report

Camellia oleifera -- Georgia

2017 Farm Bill PRE Project

PRE Score: 4 -- Accept (low risk of invasiveness)
Confidence: 64 / 100
Questions answered: 18 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Completed

Evaluation Date: August 19, 2017

This PDF was created on August 13, 2018

Plant Evaluated

Camellia oleifera

Image by U.S. National Arboretum

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Camellia oleifera*) 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

There is very little information on the potential or existing threat of C.oleifera as an invasive, as it seems it has not naturalized outside its native range of China. The majority of the information found on the species detailed ornamental features of the plant or the potential for its use as an oil seed crop. It scored very low on the PRE as questions 1-5 were all a "no" indicating that the plant remains mostly in its native range, or within ornamental cultivation in countries where it has been planted. Additionally the plant scored low in other sections of the PRE that evaluate the plants biology. Overall this plant seems to present a low risk to the region of concern and may do quite well as an ornamental given that the native range looks like a climate match to Georgia. Whilst conducting this evaluation i found several references indicating that this species is already being trialed as an ornamental plant/alternative oil crop plant. This evaluation suggests these trials are well warranted.

General Information

Status: Completed
Screener: Kylie Bucalo
Evaluation Date: August 19, 2017

Plant Information

Plant: *Camellia oleifera*

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: **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 of this. Plant is native to China, very little distribution data recorded beyond China and India in GBIF resource. There is no evidence C.oleifera has naturalized anywhere in the US.

Reference(s):

- Gilman, E. F., & Watson D. G. (1993). Camellia oleifera _US forestry.
- USDA Research Education & Economics Information (0). Breeding, Evaluation, and Production of New Nursery Crops - UNIVERSITY OF GEORGIA_C.oleifera.
- Missouri Botanical Garden PlantFinder (0). Camellia oleifera - Plant Finder.
- GBIF (0). Camellia oleifera Wall..

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

Answer / Justification:

There is no evidence of this

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

Answer / Justification:

There is no evidence of this

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

Answer / Justification:

There is no evidence of this

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

Answer / Justification:

There was no evidence of this in the Global Compendium of Weeds.

Reference(s):

- [Anonymous] .

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

Answer / Justification:

Using the GBIF resource there are 7 occurrences that are georeferenced. They are in China, in a portion of the country that matches shaded ares in the Plant right climate matching model. The native range of C.oleifera looks like it is a climate match to Georgia. Confidence level given is low, as this is based on 7 occurrences and only one reference.

Reference(s):

- GBIF (0). Camellia oleifera Wall..

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

Answer / Justification:

There is no evidence of this.

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

Answer / Justification:

There is no evidence of this.

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 of this

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 of this

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

Answer / Justification:

There is no evidence of this

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

Answer / Justification:

There is no evidence of this

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:

hard, round up to 1 inch.

Reference(s):

- Gilman, E. F., & Watson D. G. (1993). Camellia oleifera _US forestry.
- USDA Research Education & Economics Information (0). Breeding, Evaluation, and Production of New Nursery Crops - UNIVERSITY OF GEORGIA_C.oleifera.
- Missouri Botanical Garden PlantFinder (0). Camellia oleifera - Plant Finder.
- GBIF (0). Camellia oleifera Wall..

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

- 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

Reference(s):

- [Anonymous] .

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:

unknown. leave blank.

Reference(s):

- [Anonymous] .

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:

unknown. leave blank

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: **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:

answer inferred from flowering period. "Fragrant white flowers (2" diameter) bloom October to January in warm winter climates of the deep South."

Reference(s):

- Missouri Botanical Garden PlantFinder (0). Camellia oleifera - Plant Finder.

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

Answer / Justification:

This is inferred from resources. Seeds are described as "not showy" and "not attracting to wildlife"

Reference(s):

- Gilman, E. F., & Watson D. G. (1993). Camellia oleifera _US forestry.

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:

There is no evidence of this. no seed biology to support wind dispersal.

Reference(s):

- [Anonymous] .

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 of this.

Reference(s):

- [Anonymous] .

Total PRE Score

PRE Score: 4 -- Accept (low risk of invasiveness)
Confidence: 64 / 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:

• John "Doc" Ruter	January 10, 2018
• Eamonn Leonard	December 7, 2017
• Brian Jernigan	November 21, 2017

This evaluation has a total of 3 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.