



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

Acer buergerianum -- Georgia

2017 Farm Bill PRE Project

PRE Score: 3 -- Accept (low risk of invasiveness)

Confidence: 70 / 100

Questions answered: 17 of 20 -- Valid (80% or more questions answered)

Privacy: Public

Status: Submitted

Evaluation Date: July 8, 2017

This PDF was created on August 13, 2018



Plant Evaluated

Acer buergerianum



Image by Hurricanefan24



Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Acer buergerianum*) 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

Acer buergerianum has done well in this evaluation with a score of 3, and seems like a good choice as a street or garden tree for the region of concern. The tree only contains one biological characteristic that may increase chance of spread (winged samara fruits) and many that do not (slow grower, flowers and fruits not persisting, fruits not attractive to animals). There are also not many occurrence of this plant extending beyond its native range which indicates it has not yet become naturalized or invasive.

General Information

Status: Submitted

Screener: Kylie Bucalo

Evaluation Date: July 8, 2017

Plant Information

Plant: *Acer buergerianum*

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

Answer / Justification:

There is no evidence of this. USDA plant profile shows no states have trident maple introduced. GBIF documents 868 occurrences of trident maple, of which 610 occur in Asia, indicating that there has not been naturalization outside of its native range in many areas, if at all . Few and scattered occurrences may not mean that a plant has naturalized, so this answer stays as a no.

Reference(s):

- USDA Plants Database (0). Plants Profile for *Acer buergerianum* (trident maple).
- GBIF (2016). GBIF Backbone Taxonomy- *Acer buergerianum*.

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

Answer / Justification:

There is no evidence of this. USDA plant profile shows no states have trident maple introduced. Other occurrences are not a climate match.



Reference(s):

- USDA Plants Database (0). Plants Profile for *Acer buergerianum* (trident maple).
 - GBIF (2016). GBIF Backbone Taxonomy- *Acer buergerianum*.
-

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

Answer / Justification:

There is no evidence of this. Continual references cited *Acer palmatum* (Japanese Maple) and *Acer platanoides* (Norway Maple) but I could not find anything on *Acer buergerianum*.

Reference(s):

- [Anonymous] .
-

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

Answer / Justification:

There is no evidence of this. Continual references cited *Acer palmatum* (Japanese Maple) and *Acer platanoides* (Norway Maple) but I could not find anything on *Acer buergerianum*.

Reference(s):

- [Anonymous] .
-



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

Answer / Justification:

Acer platanoides invasive in Connecticut, New Jersey, New York, Vermont, Virginia, Wisconsin. Of which parts of Virginia, New Jersey and New York are a climate match for the region of concern.

Reference(s):

- CABI (0). *Acer platanoides* (Norway maple)_CABI.
-

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

Answer / Justification:

Domestic USA distribution from USDA shows that trident Maple has not been introduced or naturalized in America. GBIF shows scattered occurrence records across America (44 in total), most of which are not in the southeastern region. Distribution of this plant outside its native range was hard to find. Most resources give native range as "eastern China and Japan" with no regional information. GBIF resource indicates native range in Japan is NOT a match to the region of concern, whilst occurrences in China appear to be a match. Records of Trident maple for the Pacific countries Australia (13) and New Zealand (11) are also not a match. Lastly occurrences in South Africa are also not a match.

Reference(s):

- Missouri Botanical Garden PlantFinder (0). *Acer buergerianum* - Plant Finder MOBOT.
- University of Connecticut Plant Database (0). *Acer buergerianum*, Trident Maple - Plant Database - University of Connecticut.
- USDA Plants Database (0). Plants Profile for *Acer buergerianum* (trident maple).



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

Answer / Justification:

There is no evidence of this.

Reference(s):

- [Anonymous] .
-

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

Answer / Justification:

There is no evidence of this.

Reference(s):

- [Anonymous] .
-



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

Answer / Justification:

There is no evidence of this. Some references mention that limbs and branches are prone to breakages from heavy accumulation of ice and snow which could be dangerous, but i do not think this warrants a YES according to the guidelines provided in the information section of the question.

Reference(s):

- Missouri Botanical Garden PlantFinder (0). *Acer buergerianum* - Plant Finder MOBOT.
-

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

Answer / Justification:

Growth is slow, tree habit, 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 *screeener* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Reproduction via seed.

Reference(s):

- [Anonymous] .
-

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

Answer / Justification:

There is no evidence of this

Reference(s):

- [Anonymous] .
-

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



Answer / Justification:

Fruit = Samaras 0.75- 1 inch long

Reference(s):

- Watson, E. F. Gilman, & G. D. (2014). *Acer buergerianum*: Trident Maple _IFAS extention.
 - Missouri Botanical Garden PlantFinder (0). *Acer buergerianum* - Plant Finder MOBOT.
 - University of Connecticut Plant Database (0). *Acer buergerianum*, Trident Maple - Plant Database - University of Connecticut.
-

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

Answer / Justification:

Leave blank. hard to tell. not enough info.

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] .
-

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

Answer / Justification:

Flowers for only 2 months, and fruits mature within fall (3 months)

Reference(s):

- Watson, E. F. Gilman, & G. D. (2014). *Acer buergerianum*: Trident Maple _IFAS extention.
 - Missouri Botanical Garden PlantFinder (0). *Acer buergerianum* - Plant Finder MOBOT.
 - University of Connecticut Plant Database (0). *Acer buergerianum*, Trident Maple - Plant Database - University of Connecticut.
-



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

Answer / Justification:

Fruits are not attractive to birds or animals.

Reference(s):

- Watson, E. F. Gilman, & G. D. (2014). *Acer buergerianum*: Trident Maple _IFAS extention.
-

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

Answer / Justification:

There is no reference that indicates this, however the fruit is a samara (winged achene) which allows for easy and far wind dispersal. inferred from biology.

Reference(s):

- Watson, E. F. Gilman, & G. D. (2014). *Acer buergerianum*: Trident Maple _IFAS extention.
 - Missouri Botanical Garden PlantFinder (0). *Acer buergerianum* - Plant Finder MOBOT.
 - University of Connecticut Plant Database (0). *Acer buergerianum*, Trident Maple - Plant Database - University of Connecticut.
-



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 **High** 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: 3 -- Accept (low risk of invasiveness)

Confidence: 70 / 100

Questions answered: 17 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
- Timothy Daly January 2, 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.

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.