



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

***Acer platanoides x truncatum 'Keithsform' --
Minnesota***

2017 Farm Bill PRE Project

PRE Score: 2 -- Accept (low risk of invasiveness)

Confidence: 75 / 100

Questions answered: 18 of 20 -- Valid (80% or more questions answered)

Privacy: Public

Status: Submitted

Evaluation Date: August 22, 2017

This PDF was created on June 15, 2018



Plant Evaluated

Acer platanoides x truncatum 'Keithsform'



Image by J. Frank Schmidt & Son Co.



Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Acer platanoides x truncatum 'Keithsform'*) 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 'Keithsform' is a hybrid of *Acer truncatum* and *Acer platanoides* and is often referred to as Norweigan Sunset Maple. Information specific to 'Keithsform' is sparse. In reviewing the information available online, it seems many governments, municipalities, etc. consider 'Keithsform' and 'Warrenred' to be safe alternatives to the straight *platanoides* species. This is likely due to 'Keithsform' having less potential to escape into natural areas relative to *A. platanoides*. As a smaller specimen, 'Keithsform' would be less likely to compete with larger native trees.

General Information

Status: Submitted

Screener: Mike Monterusso

Evaluation Date: August 22, 2017

Plant Information

Plant: *Acer platanoides x truncatum 'Keithsform'*

If the plant is a cultivar, how does its behavior differs from its parent's?

Acer 'Keithsform' is a cross of two *Acer* species. One species (*A. platanoides*) is known to be invasive or has invasive tendencies. The other (*A. truncatum*) is not known to be invasive. 'Keithsform' appears to have desirable features of both species but without the invasive characteristics of *platanoides*.

Regional Information

Region Name: Minnesota



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

Answer / Justification:

No evidence found. However, the parent species *A. platanoides* has naturalized in several US states.

Reference(s):

- United States Department of Agriculture (2017). Plants Profile for *Acer platanoides* (Norway maple).
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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 *screeners* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

No evidence found. However, the parent species *A. platanoides* has naturalized in Wisconsin.

Reference(s):

- United States Department of Agriculture (2017). Plants Profile for *Acer platanoides* (Norway maple).



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

Answer / Justification:

No evidence found. *A. platanoides* is invasive in Connecticut and Massachusetts.

Reference(s):

- United States Department of Agriculture (2017). Plants Profile for *Acer platanoides* (Norway maple).
 - USDA Forest Service, Forest Health Staff (2017). Microsoft Word - final-Norway Maple.doc - norway_maple.pdf.
-

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

Answer / Justification:

No evidence found.

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

Answer / Justification:

"Norway maple has been reported to be invasive throughout the northeastern U.S. from Maine to Wisconsin, south to Tennessee and Virginia and also in the Pacific Northwest."

Reference(s):

- National Park Service (2010). Norway Maple (*Acer platanoides*).
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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 **Very High** confidence in this answer based on the available literature.

Answer / Justification:

No specific information regarding 'Keithsform' could be found. However, *A. platanoides* and *A. truncatum* are predominately found in areas with climates different from Minnesota.

Reference(s):

- GBIF (2017). *Acer platanoides* L..
-



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

Answer / Justification:

No evidence found. However, the parent plant *A. platanoides* does displace native plants: "Norway maple forms monotypic populations by displacing native trees, shrubs, and herbaceous understory plants."

Reference(s):

- National Park Service (2010). Norway Maple (*Acer platanoides*).
-

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

Answer / Justification:

No evidence found. However, the parent plant *A. platanoides* could alter fire regimes: "As of this writing, it is difficult to identify interactions between Norway maple and particular fire regimes in North America because distribution of invasive Norway maple is ill-defined. We can probably assume that Norway maple increases in the absence of fire. It is likely that frequent fires would limit Norway maple establishment."

Reference(s):

- Munger, G. T. (2007). *Acer platanoides*. 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 *screeners* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

No evidence found. Personal experience demonstrates that *Acer* spp are not hazardous to humans or wild animals.

Reference(s):

- [Anonymous] .
-

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

Answer / Justification:

No evidence found. Personal experience demonstrates that *Acer* spp do not create impenetrable thickets.

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

Answer / Justification:

No evidence found.

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:

No evidence found.

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



Answer / Justification:

Viable seed has been collected for study.

Reference(s):

- Conklin, J. R., & Sellmer J. C. (2009). Germination and Seed Viability of Norway Maple Cultivars, Hybrids, and Species. HortTechnology. 19, 120–126.
-

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

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: **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:

'Keithsform' seeds have been shown to germinate at a rate of 8%.

Reference(s):

- Conklin, J. R., & Sellmer J. C. (2009). Germination and Seed Viability of Norway Maple Cultivars, Hybrids, and Species. HortTechnology. 19, 120–126.
-



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?

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:

Maple trees flower and set seed once/year in late spring.

Reference(s):

- Specialty Trees (2017). *Acer truncatum x platanoides* warrenred 'Pacific Sunset' / Library ? Speciality Trees.
-

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



Answer / Justification:

While some evidence suggests that mammals and birds do move or consume the seeds, this does not appear to be a frequent occurrence.

Reference(s):

- Dedham Conservation Department (2017). Norway Maple, *Acer platanoides*.
-

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

Answer / Justification:

Evidence suggests that maple seeds are dispersed by wind but the distance is unlikely to be >100m.

Reference(s):

- Dedham Conservation Department (2017). Norway Maple, *Acer platanoides*.
-

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

Answer / Justification:

No evidence found.

Reference(s):

- [Anonymous] .



Total PRE Score

PRE Score: 2 -- Accept (low risk of invasiveness)

Confidence: 75 / 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:

- Laura Van Riper November 30, 2017
- Tom Buechel November 10, 2017

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 # 5793

Date Created: November 10, 2017 - 6:24am

Date Updated: February 9, 2018 - 9:21am

Submitted by: Tom Buechel

Status: Fixed

Type: Comment

Severity: Minor

Scope: Evaluation as a whole

Issue Description

Several questions were answered only with one cross of a species. This issue is going to come up more often as new plants are developed. It should be noted that *Acer truncatum* has not been reported as invasive and does not seed or germinate well unless produced in a nursery setting with specific attention to detail. This does make the cross of the two species very unlikely that they would present a threat. Industry gets very nervous when one partner is picked on more than another in this case *platanoides* as it is considered a problem in some places. The other partner (*truncatum*) should also be represented in the PRE Tool with some literature that displays its non invasive nature.

Issue Resolution (Screener's Response to Issue)

11/28/17 - leaving the issue as "not fixed" for developer reference. The "guilty by association" vs "innocent by association" is an interesting concept. Perhaps the "proof is in the pudding" (or hybrid). In this case, the PRE score of "2" is extremely low. Also, the evaluation does state in the plant description that "*Acer* 'Keithsform' is a cross of two *Acer* species. One species (*A. platanoides*) is known to be invasive or has invasive tendencies. The other (*A. truncatum*) is not known to be invasive. 'Keithsform' appears to have desirable features of both species but without the invasive characteristics of *platanoides*."

2/9/2018 -- Issue marked as Fixed by PRE Data Manager. The reviewer's concern is reflected in the evaluation score for the species (very low) -- the invasive parent was not the only consideration in this evaluation. For plants like this, screeners should use the data available to answer the questions and



provide a fair assessment, while communicating any concerns about the data available in the Evaluation Summary.



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.