Plant Risk Evaluator -- PRE™
Evaluation Report

Rhaphiolepis indica var. umbellata -- Texas

2017 Farm Bill PRE Project

PRE Score: 6 -- Accept (low risk of invasiveness)
Confidence: 63 / 100
Questions answered: 18 of 20 -- Valid (80% or more questions answered)

Privacy: Public
Status: Submitted

Evaluation Date: September 30, 2017

This PDF was created on August 13, 2018

Plant Evaluated

Rhaphiolepis indica var. umbellata

Image by KENPEI, Wikipedia user

Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Rhaphiolepis indica var. umbellata*) 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

Rhaphiolepis indica var. umbellata is naturalized in one county in southern Alabama. The record for this occurence could not be located, and it is unclear how extensively the species has naturalized. It is noted as invasive in parts of the Norfolk Islands, Australia, and New Zealand but the impact on native plant communities is not clear.

General Information

Status: Submitted
Screener: Kim Taylor
Evaluation Date: September 30, 2017

Plant Information

Plant: *Rhaphiolepis indica var. umbellata*

If the plant is a cultivar, how does its behavior differs from its parent's?
This evaluation is for the species, not a particular cultivar.

Regional Information

Region Name: Texas

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:

Kartesz indicates Rhaphiolepis indica var. umbellata is naturalized in one county in Alabama. The source of this record could not be found. Pacific Island Ecosystems at Risk indicates the species is naturalized and invasive in the Norfolk Islands, Australia, and New Zealand.

Reference(s):

- Kartesz, J. T. (2015). The Biota of North America Program (BONAP).
- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).

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

Answer / Justification:

Kartesz indicates Rhaphiolepis indica var. umbellata is naturalized in one county in Alabama. The source of this record could not be found.

Reference(s):

- Kartesz, J. T. (2015). The Biota of North America Program (BONAP).

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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:

The Global Compendium of Weeds identifies the species as "environmental weed, naturalised, sleeper weed, weed". Pacific Island Ecosystems at Risk indicates the species is invasive in the Norfolk Islands, Australia, and New Zealand.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).
- Global Compendium of Weeds (GCW) (0). Rhaphiolepis umbellata information from the Global Compendium of Weeds (GCW).

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

Answer / Justification:

Pacific Island Ecosystems at Risk indicates the species is invasive in the Norfolk Islands, Australia, and New Zealand. Portions of Australia and New Zealand share a similar climate to Texas, but I could not locate where the species was growing within these areas.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).

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

Answer / Justification:

No other members of the genus are naturalized in the U.S. or listed in the Global Compendium of Weeds.

Reference(s):

- Global Compendium of Weeds (0). Global Compendium of Weeds: species index.
- Kartesz, J. T. (2015). The Biota of North America Program (BONAP).

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

Answer / Justification:

Less than half of the species range has a similar climate to Texas.

Reference(s):

- GBIF (0). Rhaphiolepis indica var. umbellata (Thunb. ex Murray) H. Ohashi.

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

Answer / Justification:

There are no reports of R. indica var. umbellata overtopping and smothering native plant communities.

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

Answer / Justification:

The species is not known to be toxic.

Reference(s):

- Plants For A Future (PFAF) (0). Rhaphiolepis umbellata Japanese Hawthorn PFAF Plant Database.

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

Answer / Justification:

It does not form thickets.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).

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

Answer / Justification:

The species does not spread vegetatively.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).

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

Answer / Justification:

There is no evidence of this.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).

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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:

Propagation is by seed.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).

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

Answer / Justification:

Answer left blank.

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: **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:

"wash seed 3x daily 7d, direct sow outdoors " "Seed - best sown as soon as it is ripe in a shady position in a warm greenhouse" There does not appear to be an extended dormancy period.

Reference(s):

- Plants For A Future (PFAF) (0). Rhaphiolepis umbellata Japanese Hawthorn PFAF Plant Database.
- Clothier, T. (0). Tree/Shrub Seed Germination - Quick Reference.

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:

"They are of slow to moderate growth rate"

Reference(s):

- Plants For A Future (PFAF) (0). Rhaphiolepis umbellata Japanese Hawthorn PFAF Plant Database.

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

Answer / Justification:

"Bloom Time: April to May" "Fl. Apr–Jun, fr. Sep–Nov." "It is in flower from Apr to May, and the seeds ripen from Sep to October."

Reference(s):

- Missouri Botanical Garden PlantFinder (0). Rhaphiolepis umbellata - Plant Finder.
- efloras.org (0). Rhaphiolepis umbellata in Flora of China @ efloras.org.
- Plants For A Future (PFAF) (0). Rhaphiolepis umbellata Japanese Hawthorn PFAF Plant Database.

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:

"Flowers are followed by blue-black berries." fruits are bird dispersed

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).
- Missouri Botanical Garden PlantFinder (0). Rhaphiolepis umbellata - Plant Finder.

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

Answer / Justification:

There are no adaptations for wind dispersal and no evidence of water dispersal.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). Rhaphiolepis umbellata (PIER species info).

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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:

There is no evidence of this.

Reference(s):

- [Anonymous] .

Total PRE Score

PRE Score: 6 -- Accept (low risk of invasiveness)
Confidence: 63 / 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:

- Steve Moore   October 4, 2017

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.