



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

Houttuynia cordata -- Texas

2017 Farm Bill PRE Project

PRE Score: 9 -- Accept (low risk of invasiveness)

Confidence: 72 / 100

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

Privacy: Public

Status: Submitted

Evaluation Date: September 24, 2017

This PDF was created on August 13, 2018



Plant Evaluated

Houttuynia cordata



Image by Jeffdelonge, Wikipedia user



Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Houttuynia cordata*) 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

Houttuynia cordata is a rhizomatous herb which spreads vegetatively and by seed. It is naturalized in Pennsylvania, Delaware, Virginia, North Carolina, Florida, Alabama, Louisiana, and Texas. It is not currently listed invasive by any state.

General Information

Status: Submitted

Screener: Kim Taylor

Evaluation Date: September 24, 2017

Plant Information

Plant: *Houttuynia cordata*

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

Answer / Justification:

Kartesz indicates the species is naturalized in a one or two scattered counties each in Pennsylvania, Delaware, Virginia, North Carolina, Florida, Alabama, Louisiana, and Texas.

Reference(s):

- Kartesz, J. T. (2015). The Biota of North America Program (BONAP).
 - USDA, & NRCS (2017). The Plants Database.
-

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

Answer / Justification:

The species is naturalized in a few locations in Virginia, North Carolina, Florida, Alabama, Louisiana, and Texas.



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: **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:

Houttuynia cordata is designated an "agricultural weed, cultivation escape, environmental weed, naturalised, noxious weed, sleeper weed, weed" by the Global Compendium of Weeds. No information was found on where the species is invasive.

Reference(s):

- Global Compendium of Weeds (GCW) (0). *Houttuynia cordata* 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 *screeener* has a **Medium** confidence in this answer based on the available literature.

Answer / Justification:

No record was found of the plant being invasive in areas with a similar climate.

Reference(s):

- [Anonymous] .
-



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

Answer / Justification:

None found.

Reference(s):

- [Anonymous] .
-

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:

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

Reference(s):

- GBIF (0). *Houttuynia cordata* Thunb. (gbif).
-



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

Answer / Justification:

"Plants spread invasively by rhizomes and may need to be restrained by soil barriers or planted in areas where fixed structures such as sidewalks or buildings will restrict spread." It is not clear if the species displaces native vegetation.

Reference(s):

- Missouri Botanical Garden PlantFinder (0). *Houttuynia cordata* 'Chameleon' - Plant Finder.
-

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):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (PIER species info).
-



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:

There is no evidence of this. "Leaves used medicinally; shoots eaten as a vegetable"

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (PIER species info).
 - efloras.org (0). *Houttuynia cordata* in Chinese Plant Names @ efloras.org.
 - Plants For A Future (PFAF) (0). *Houttuynia cordata* Tsi, Chameleon, Rainbow Plant, Chameleon Plant 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 *screeners* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

This species does not form thickets.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (PIER species info).
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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 *screeener* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

"Seed and rhizomes" "Basal part of stems creeping, rooted in whorls at nodes." "Plants spread invasively by rhizomes and may need to be restrained by soil barriers or planted in areas where fixed structures such as sidewalks or buildings will restrict spread." "Houttuynia cordata is a rhizomatous perennial that typically grows 9-15" tall and spreads indefinitely and often vigorously by rhizomes." "rhizomes creeping, thin. Basal part of stems creeping, rooted in whorls at nodes"

Reference(s):

- Missouri Botanical Garden PlantFinder (0). *Houttuynia cordata* 'Chameleon' - Plant Finder.
 - Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (PIER species info).
 - efloras.org (0). *Houttuynia cordata* in Chinese Plant Names @ efloras.org.
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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: **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:

"Houttuynia cordata spreads by seeds and plant fragments. The fragments can sprout roots and form new infestations."

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (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 *screeners* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

Reproduction is by "Seed and rhizomes"

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (PIER species info).
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14. Does this plant produce copious viable seeds each year (> 1000)?

Answer / Justification:

No information was found on number seeds produced.

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:

"Propagation: Seed - sow spring in a greenhouse." No information was found on germination requirements.



Reference(s):

- Plants For A Future (PFAF) (0). *Houttuynia cordata* Tsi, Chameleon, Rainbow Plant, Chameleon Plant PFAF Plant Database.
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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: **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:

The species reproduces the first year.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (PIER species info).
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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 *screeners* has a **Very High** confidence in this answer based on the available literature.

Answer / Justification:

The species flowers from May to June. " Fl. Apr-Sep, fr. Jun-Oct."

Reference(s):

- Missouri Botanical Garden PlantFinder (0). *Houttuynia cordata* 'Chameleon' - Plant Finder.
 - efloras.org (0). *Houttuynia cordata* in Chinese Plant Names @ efloras.org.
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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:

The species is not dispersed by birds or mammals.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (PIER species info).
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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 *screeners* has a **High** confidence in this answer based on the available literature.

Answer / Justification:

There are no adaptations for wind dispersal.

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (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: **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:

"*Houttuynia cordata* spreads through plant fragments being moved intentionally or on cultivation equipment and in garden refuse."

Reference(s):

- Pacific Island Ecosystems at Risk (PIER) (0). *Houttuynia cordata* (PIER species info).
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Total PRE Score

PRE Score: 9 -- Accept (low risk of invasiveness)

Confidence: 72 / 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

September 26, 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.

PRE beta funding is provided by Sustainable Conservation (<http://www.suscon.org/>) and a USDA Farm Bill grant.