



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

***Plumbago auriculata -- Texas***

***2017 Farm Bill PRE Project***

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

**Confidence:** 65 / 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

*Plumbago auriculata*



Image by ErgoSum88, Wikipedia user



## Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Plumbago auriculata*) 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

*Plumbago auriculata* is a flowering shrub naturalized in sub-tropical to tropical portions of the U.S.. There is no evidence of it displacing natives where has naturalized, but the ability to spread vegetatively, and the long flowering period suggest it could be problematic in the future.

## General Information

**Status:** Submitted

**Screener:** Kim Taylor

**Evaluation Date:** September 30, 2017

## Plant Information

**Plant:** *Plumbago auriculata*

**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 *Plumbago auriculata* is naturalized in Florida, Alabama, Louisiana, and California.

#### Reference(s):

- Kartesz, J. T. (2015). The Biota of North America Program (BONAP).
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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: **Yes**, which contributes **2** 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 *Plumbago auriculata* is naturalized in Florida, Alabama, Louisiana, and California. The Southeastern U.S. shares a climate with Texas.

#### Reference(s):

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



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

#### Answer / Justification:

*Plumbago auriculata* is listed as an "agricultural weed, cultivation escape, environmental weed, naturalised, weed" by the Global Compendium of Weeds. EDD Maps does not list the species as invasive in any states

#### Reference(s):

- Global Compendium of Weeds (GCW) (0). *Plumbago auriculata* information from the Global Compendium of Weeds (GCW).
- 

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

#### 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:**

6 species of *Plumbago* are listed in the Global Compendium of Weeds though none are invasive.

**Reference(s):**

- Global Compendium of Weeds (0). Global Compendium of Weeds: species index.
- 

**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). *Plumbago auriculata* Lam. - 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 **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

No reports of the species being invasive and displacing native vegetation were found.



**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 *screeener* has a **Low** 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: **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:**

"All parts of plant are poisonous if ingested" Toxicity Class 4: "Dermatitis: The juice, sap, or thorns of these plants may cause a skin rash or irritation. Wash the affected area of skin with soap and water as soon as possible after contact. The rashes may be very serious and painful." "Toxic Principle: Plumbagin, a quinone."

**Reference(s):**

- Dave's Garden (0). PlantFiles: Plumbago, Cape Leadwort.
- North Carolina State University Extension (0). Plumbago auriculata - ncsu.
- Resources, University of California Agriculture (0). Toxic Plants (by scientific name).





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

**Answer / Justification:**

There is no direct evidence of this, though the species does spread vegetatively in a garden setting suggesting it could form thickets.

**Reference(s):**

- Plantbook (0). *Plumbago auriculata* PLANTBOOK.
- 

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

**Answer / Justification:**

"Propagate from seed, cuttings or by lifting rooted suckers." "Plumbago can be easily grown from seed, semi-ripe tip cuttings or, by the far the easiest way, is to take rooted offshoots from the parent plant." Comments by one user noted that the species "Sends out runners underground and can spread."

**Reference(s):**

- DenGarden.com (0). How to Care for Your *Plumbago Auriculata*.
  - Plantbook (0). *Plumbago auriculata* PLANTBOOK.
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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 *screeners* has a **Low** confidence in this answer based on the available literature.

**Answer / Justification:**

The species forms rooted suckers, so it is possible that these suckers could detach and form new plants. However, there is no record of this occurring.

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

**Answer / Justification:**

"May be easily grown from seed, but plants generally will not flower until the second year."

**Reference(s):**

- Missouri Botanical Garden PlantFinder (0). *Plumbago auriculata* - Plant Finder.
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**14. Does this plant produce copious viable seeds each year (> 1000)?**



**Answer / Justification:**

The species flowers for many months of the year, but it is not clear how many flowers are produced each year, and how many of those flowers produce viable seed. More information needed.

**Reference(s):**

- [Anonymous] .
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**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:**

Not known.

**Reference(s):**

- [Anonymous] .
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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 *screeener* has a **High** confidence in this answer based on the available literature.

**Answer / Justification:**

"May be easily grown from seed, but plants generally will not flower until the second year." "Easily grown from seed, but takes 2 years to flower (sow seed at 55° to 64°F in spring)."



**Reference(s):**

- Green Planet (0). *Plumbago auriculata* (Family: Plumbaginaceae).
  - Missouri Botanical Garden PlantFinder (0). *Plumbago auriculata* - Plant Finder.
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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 **High** confidence in this answer based on the available literature.

**Answer / Justification:**

"Bloom Time: Flowers freely" "Features clusters (terminal racemes) of pale blue phlox-like flowers that bloom freely throughout the growing season. Flowers are followed by barbed fruit capsules." "Flowering year-round."

**Reference(s):**

- Missouri Botanical Garden PlantFinder (0). *Plumbago auriculata* - Plant Finder.
  - efloras.org (0). *Plumbago auriculata* in Flora of North America @ 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: **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 are sticky, gland tipped hairs on the flower calyx. The seed capsule retains the stickiness which presumably helps disperse the seed by attaching to animals. The top of the capsule splits opens and drops the seed out." "The seeds of the plumbago stick to animals and birds which helps with dispersal."

**Reference(s):**

- DenGarden.com (0). How to Care for Your Plumbago Auriculata.
  - Parsons, J. (0). PLANTanswers: Plant Answers PLUMBAGO - A LOVELY BLUE-FLOWERED,BUTTERFLY PLANT FOR TEXAS.
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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 *screeener* has a **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

Seeds appear to be animal dispersed.

**Reference(s):**

- Parsons, J. (0). PLANTanswers: Plant Answers PLUMBAGO - A LOVELY BLUE-FLOWERED,BUTTERFLY PLANT FOR TEXAS.
- 

**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 **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:** 9 -- Accept (low risk of invasiveness)

**Confidence:** 65 / 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](mailto: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](mailto: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.