



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

***Ilex cornuta 'Burfordii' -- Texas***

***2017 Farm Bill PRE Project***

**PRE Score:** 15 -- Evaluate this plant further

**Confidence:** 60 / 100

**Questions answered:** 19 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

*Ilex cornuta* 'Burfordii'



Image by MBOT



## Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Ilex cornuta 'Burfordii'*) 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

*Burfordii'*, commonly called Burford holly, is noted for heavy fruit set. The parent species is naturalized across the southeastern U.S. and considered invasive in Georgia. The species spreads by bird dispersed fruit.

## General Information

**Status:** Submitted

**Screener:** Kim Taylor

**Evaluation Date:** September 24, 2017

## Plant Information

**Plant:** *Ilex cornuta 'Burfordii'*

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

*Burfordii'*, commonly called Burford holly, is noted for heavy fruit set. Questions regarding fruit set will be answered specifically in reference to the cultivar, while other questions will be answered from information about the species as a whole.

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

#### Answer / Justification:

Kartesz indicates that the parent species is naturalized across the southeastern U.S. in Kentucky, North Carolina, Georgia, Alabama, Mississippi, Louisiana, and Arkansas.

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

#### Answer / Justification:

Kartesz indicates that the parent species is naturalized across the southeastern U.S. in Kentucky, North Carolina, Georgia, Alabama, Mississippi, Louisiana, and Arkansas. These regions share a similar climate to 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: **Yes**, which contributes **2** points to the total PRE score.
- The *screeener* has a **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

*Ilex cornuta* is designated as "naturalised" in the Global Compendium of Weeds. EDD maps indicates the species is invasive in Georgia, but Kartesz only shows the species as present in a single county in Georgia.

**Reference(s):**

- Invasive Plant Atlas of the United States (0). Chinese holly: *Ilex cornuta* (Celastrales: Aquifoliaceae): Invasive Plant Atlas of the United States.
  - Global Compendium of Weeds (GCW) (0). *Ilex cornuta* information from the Global Compendium of Weeds (GCW).
  - Kartesz, J. T. (2015). The Biota of North America Program (BONAP).
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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: **Yes**, which contributes **3** points to the total PRE score.
- The *screeener* has a **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

EDD maps indicates the species is invasive in Georgia, but Kartesz only shows the species as present in a single county in Georgia.



**Reference(s):**

- Invasive Plant Atlas of the United States (0). Chinese holly: *Ilex cornuta* (Celastrales: Aquifoliaceae): Invasive Plant Atlas of the United States.
  - Kartesz, J. T. (2015). The Biota of North America Program (BONAP).
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**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 **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

17 species of *Ilex* are listed in the Global Compendium of Weeds. *Ilex crenata* as listed as invasive in Georgia.

**Reference(s):**

- Global Compendium of Weeds (0). Global Compendium of Weeds: species index.
  - Invasive Plant Atlas of the United States (0). Japanese holly: *Ilex crenata* (Celastrales: Aquifoliaceae): Invasive Plant Atlas of the United States.
- 

**6. Is the species (or cultivar or variety) found predominately in a climate matching the region of concern?**

- Answer: **Yes**, which contributes **2** points to the total PRE score.
- The *screeners* has a **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

Over half of the distribution for the parent species shares a similar climate to Texas.



**Reference(s):**

- GBIF (0). *Ilex cornuta* Lindl. & Paxton (gbif).
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**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:**

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

### Answer / Justification:

"Although no specific reports of toxicity have been seen for this species, the fruits of at least some members of this genus contain saponins and are slightly toxic. They can cause vomiting, diarrhoea and stupor if eaten in quantity."

### Reference(s):

- Plants For A Future (PFAF) (0). *Ilex cornuta* Horned Holly, Chinese holly 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 **Medium** confidence in this answer based on the available literature.

### Answer / Justification:

There is no evidence that *Ilex cornuta* forms thickets.

### Reference(s):

- [Anonymous] .
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## 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:

*Ilex cornuta* does not spread vegetatively.

#### Reference(s):

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

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

#### Answer / Justification:

"Female 'Dwarf Burford' plants are parthenocarpic (able to produce fruit without pollination)."



**Reference(s):**

- Missouri Botanical Garden PlantFinder (0). *Ilex cornuta* 'Dwarf Burford' - Plant Finder.
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**14. Does this plant produce copious viable seeds each year (> 1000)?**

- Answer: **Yes**, which contributes **1** points to the total PRE score.
- The *screeener* has a **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

'Burfordii' is noted for heavy fruit set. It is highly likely a single tree could produce over 1000 fruits.

**Reference(s):**

- Missouri Botanical Garden PlantFinder (0). *Ilex cornuta* 'Dwarf Burford' - Plant Finder.
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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: **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:**

"Propagation: Seed - best sown as soon as it is ripe in the autumn in a cold frame. It can take 18 months to germinate. Stored seed generally requires two winters and a summer before it will germinate and should be sown as soon as possible in a cold frame. Scarification, followed by a warm stratification and then a cold stratification may speed up the germination time."

**Reference(s):**

- Plants For A Future (PFAF) (0). *Ilex cornuta* Horned Holly, Chinese holly PFAF Plant Database.



**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:**

No information was found on age at flowering.

**Reference(s):**

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

**Answer / Justification:**

"Pollinated flowers give way to berry-like red drupes (1/3" long) which ripen in fall and persist into winter. Birds are attracted to the fruit." "Fl. Apr-May, fr. Aug-Dec" "It is in flower in April, and the seeds ripen from Oct to December."

**Reference(s):**

- Missouri Botanical Garden PlantFinder (0). *Ilex cornuta* 'Dwarf Burford' - Plant Finder.
  - Plants For A Future (PFAF) (0). *Ilex cornuta* Horned Holly, Chinese holly PFAF Plant Database.
  - efloras.org (0). *Ilex cornuta* in Flora of China @ 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 *screeener* has a **High** confidence in this answer based on the available literature.

#### Answer / Justification:

"Pollinated flowers give way to berry-like red drupes (1/3" long) which ripen in fall and persist into winter. Birds are attracted to the fruit."

#### Reference(s):

- Missouri Botanical Garden PlantFinder (0). *Ilex cornuta* 'Dwarf Burford' - Plant Finder.
- 

### 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:

There is no evidence of this.

#### Reference(s):

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

**Answer / Justification:**

There is no evidence of this.

**Reference(s):**

- [Anonymous] .
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**Total PRE Score**

**PRE Score:** 15 -- Evaluate this plant further

**Confidence:** 60 / 100

**Questions answered:** 19 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](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.