



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

***Hosta 'Halcyon' -- Illinois***

***2017 Farm Bill PRE Project***

**PRE Score:** 7 -- Accept (low risk of invasiveness)

**Confidence:** 59 / 100

**Questions answered:** 19 of 20 -- Valid (80% or more questions answered)

**Privacy:** Public

**Status:** Submitted

**Evaluation Date:** September 5, 2017

*This PDF was created on June 15, 2018*



## Plant Evaluated

*Hosta 'Halcyon'*



Image by MBOT



## Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Hosta 'Halcyon'*) 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.

## General Information

**Status:** Submitted

**Screener:** Emily Russell

**Evaluation Date:** September 5, 2017

## Plant Information

**Plant:** *Hosta 'Halcyon'*

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

'Halcyon' is a cultivar in the Tardiana Group, a group of hybrids resulting from a cross between H. 'Tardiflora' and H. sieboldiana 'Elegans'. H. 'Tardiflora' is a seedling of H. longipes. "This cultivar retains blue leaf color longer than most other blue hostas. A slower growing hosta (takes several years to develop mature shape) that is a dependable and versatile perennial requiring little care. Grown primarily for its beautiful foliage which provides color, contrast and texture to the landscape. American Hosta Society Distinguished Merit Hosta award (1987)." (MOBOT)

## Regional Information

**Region Name:** Illinois



## **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:

Hostas have naturalized in northeastern North America. It is unknown if 'Halcyon' contributed to these populations, but this cultivar has had long-standing popularity in the United States and does produce viable seed.

#### Reference(s):

- USDA NRCS (2017). USDA PLANTS Database: Hosta (plantain lily).
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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 **Medium** confidence in this answer based on the available literature.

#### Answer / Justification:

Hostas have naturalized in northeastern North America. It is unknown if 'Halcyon' contributed to these populations, but this cultivar has had long-standing popularity in the United States and does produce viable seed.



**Reference(s):**

- USDA NRCS (2017). USDA PLANTS Databse: Hosta (plantain lily).
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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:**

There are no citations of Hosta as an invasive species in the literature. Two citations for *H. sieboldiana* in the Global Compendium of Weeds list it as a weed in Japan (where it is native) and an alien plant in the British Isles. There is no listing for *H. longipes*.

**Reference(s):**

- Randall, R. (2012). A Global Compendium of Weeds. 2nd Edition..
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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:**

There are no citations of Hosta as an invasive species in the literature. Two citations for *H. sieboldiana* in the Global Compendium of Weeds list it as a weed in Japan (where it is native) and an alien plant in the British Isles. There is no listing for *H. longipes*.

**Reference(s):**

- Randall, R. (2012). A Global Compendium of Weeds. 2nd Edition..



## 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:

There are no citations of Hosta as an invasive species in the literature. Listings for 8 species in the Global Compendium of Weeds contain few citations mostly as naturalized, garden thug, or casual alien.

### Reference(s):

- Randall, R. (2012). A Global Compendium of Weeds. 2nd Edition..
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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 **Medium** confidence in this answer based on the available literature.

### Answer / Justification:

Hostas are known to be widely cultivated in many climates.

### Reference(s):

- GBIF Secretariat (2017). GBIF Backbone Taxonomy: Hosta sieboldiana (Hook.) Engl..
  - GBIF Secretariat (2017). GBIF Backbone Taxonomy: Hosta Tratt..
  - USDA-Grin (2005). Hosta sieboldiana. In: Taxonomy - GRIN-Global Web v 1.9.8.2.
  - GBIF Secretariat (2017). GBIF Backbone Taxonomy: Hosta longipes (Franch. & Sav.) Matsum..
  - USDA-Grin (2005). Hosta longipes. In: Taxonomy - GRIN-Global Web v 1.9.8.2.
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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 **Low** confidence in this answer based on the available literature.

#### Answer / Justification:

Evidence is lacking that Hosta 'Halcyon' displaces native plants. However: "dense foliage crowds out most garden weeds."

#### Reference(s):

- Missouri Botanical Garden (0). Hosta (Tardiana Group) 'Halcyon' - Plant Finder.
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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 *screeners* has a **Medium** confidence in this answer based on the available literature.

#### Answer / Justification:

The moisture-retaining leaves of hostas do not promote fire.

#### Reference(s):

- Oregon State University (2006). Fire Resistant Plants for Home Landscapes: Selecting Plants That May Reduce Your Risk from Wildfire. 44.
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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 *screeener* has a **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

There is no evidence of health risks to humans, animals, or grazing systems. Leaves are edible, and are frequently grazed by deer.

**Reference(s):**

- Missouri Botanical Garden (0). Hosta (Tardiana Group) 'Halcyon' - Plant Finder.
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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 *screeener* has a **High** confidence in this answer based on the available literature.

**Answer / Justification:**

Hosta 'Halcyon', as an herbaceous perennial less than 3' tall, is unlikely to produce impenetrable 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: **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:

Hostas spread vegetatively via short rhizomes.

#### Reference(s):

- Grenfell, D., & Shadrack M. (2009). The New Encyclopedia of Hostas.
  - Missouri Botanical Garden (0). Hosta (Tardiana Group) 'Halcyon' - Plant Finder.
- 

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

#### Answer / Justification:

There is no evidence that hostas frequently fragment to reproduce.

#### 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:**

Hostas usually reproduce by seed. For 'Halcyon': "Pale bluish lavender flowers on 28 inch high scapes bloom from late July into August followed by viable seeds." 'Halcyon' was a seed parent of many subsequent hosta cultivars.

**Reference(s):**

- PlantsGalore.Com (2017). Hosta 'Halcyon' from The Hosta Helper.
  - Grenfell, D., & Shadrack M. (2009). The New Encyclopedia of Hostas.
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**14. Does this plant produce copious viable seeds each year (> 1000)?**

**Answer / Justification:**

No estimate of seed quantity could be found, except that "most hostas produce abundant seed."

**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: **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:**

For Hostas generally: "Seed usually takes six to eight weeks to ripen. Once sown, it generally germinates quickly, within two to six weeks."



**Reference(s):**

- Grenfell, D., & Shadrack M. (2009). The New Encyclopedia of Hostas.
  - Thompson, P.. (1980). Hostas from seed.. Garden, UK. 105, 371–372.
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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 **Medium** confidence in this answer based on the available literature.

**Answer / Justification:**

"Hosta seedlings often don't bloom until their second or third season, but some hybridizers are very successful in getting their seedlings to bloom by the end of the first season."

**Reference(s):**

- Spece, J. (2008). Culling and Selecting Hosta Seedlings.
  - Houzz Inc. (2005). Growing Hostas from seeds.
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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 *screeener* has a **High** confidence in this answer based on the available literature.

**Answer / Justification:**

Bloom time is a few weeks.

**Reference(s):**

- PlantsGalore.Com (2017). Hosta 'Halcyon' from The Hosta Helper.
- Missouri Botanical Garden (0). Hosta (Tardiana Group) 'Halcyon' - Plant Finder.



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

#### Answer / Justification:

Birds may eat hosta seeds, but there is no evidence for long distance dispersal.

#### Reference(s):

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

#### Answer / Justification:

"Although Hosta seeds are adapted for wind dispersal, most seeds fall around maternal plants at

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



**Answer / Justification:**

There is no evidence of accidental dispersal by humans.

**Reference(s):**

- [Anonymous] .

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**Total PRE Score**

**PRE Score:** 7 -- Accept (low risk of invasiveness)

**Confidence:** 59 / 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:

- Richard Hawke September 18, 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.