



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

***Ajuga reptans -- Minnesota***

***2017 Farm Bill PRE Project***

**PRE Score:** 6 -- Accept (low risk of invasiveness)

**Confidence:** 71 / 100

**Questions answered:** 16 of 20 -- Valid (80% or more questions answered)

**Privacy:** Public

**Status:** Completed

**Evaluation Date:** June 28, 2017

*This PDF was created on June 15, 2018*



## Plant Evaluated

*Ajuga reptans*



Image by EnLorax



## Evaluation Overview

A PRE™ screener conducted a literature review for this plant (*Ajuga reptans*) 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

*Ajuga reptans* has some relatively minor invasive characteristic such as an ability to grow in disturbed sites. It is aggressive in a garden setting, but does not appear to aggressively invade natural areas. It is not poisonous, does not alter fire regimes, and does not produce impenetrable thickets. Therefore, it is considered to be a relatively low threat to the environment in Minnesota.

## General Information

**Status:** Completed

**Screener:** Mike Monterusso

**Evaluation Date:** June 28, 2017

## Plant Information

**Plant:** *Ajuga reptans*

## Regional Information

**Region Name:** Minnesota

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

#### Answer / Justification:

Cultivated, persisting, and occasionally naturalizing to roadsides, disturbed soils, and lawns (New York). *Ajuga reptans* was shown to naturalize in Mount Rainier National Park.

#### Reference(s):

- New York Flora Atlas (2017). *Ajuga reptans* - Species Page - NYFA: New York Flora Atlas.
  - United States Department of Agriculture (2017). Plants Profile for *Ajuga reptans* (common bugle).
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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 *screeener* has a **High** confidence in this answer based on the available literature.

#### Answer / Justification:

*Ajuga reptans* has naturalized in multiple counties in Wisconsin and Northwest Upper Michigan.



**Reference(s):**

- The University of Georgia - Center for Invasive Species and Ecosystem Health (2017). carpet bugle (*Ajuga reptans*) - EDDMapS Distribution.
  - United States Department of Agriculture (2017). Plants Profile for *Ajuga reptans* (common bugle).
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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 *screeners* has a **Very High** confidence in this answer based on the available literature.

**Answer / Justification:**

Reported as invasive in Colonial National Historical Park in Virginia.

**Reference(s):**

- Invasive Plant Atlas of the United States (2015). carpet bugle: *Ajuga reptans* (Lamiales: Lamiaceae): Invasive Plant Atlas of the United States.
- 

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

**Answer / Justification:**

No evidence found.

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

**Answer / Justification:**

While there are no *Ajuga* species that are particularly invasive, it should be noted that *Ajuga* is in the Lamiaceae family which is noted to be aggressive.

**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:**

GBIF indicates that the majority of occurrences are throughout Europe, which has a climate that differs from Minnesota.

**Reference(s):**

- GBIF (2017). *Ajuga reptans* L. - Checklist View.
-



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

#### Answer / Justification:

No evidence found.

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

#### Answer / Justification:

No evidence found.

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





**Answer / Justification:**

*Ajuga reptans* is noted as being edible.

**Reference(s):**

- Edible Wild Food (2017). Bugleweed: Pictures, Flowers, Leaves and Identification - *Ajuga reptans*.
- 

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

**Answer / Justification:**

No evidence found. While *Ajuga reptans* can form thick mats, the plant is only a few inches tall.

**Reference(s):**

- [Anonymous] .
- 

**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:**

Vegetative growth is a significant method of reproduction for *Ajuga reptans*. "This low-growing bugleweed will spread in the garden by stolons (reptans means creeping) to form an attractive, mat-like ground cover." "Carpet Bugle can reproduce by seeds or vegetatively by means of these stolons; it often forms colonies."

**Reference(s):**

- Missouri Botanical Garden (2017). *Ajuga reptans* - Plant Finder.
  - Illinois Wildflowers (2017). Carpet Bugle (*Ajuga reptans*).
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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 **High** confidence in this answer based on the available literature.

**Answer / Justification:**

As a member of the mint family, *Ajuga reptans* does have the ability to root at nodes (and it does spread via stolons), but detached fragments does not appear to be a common method of reproduction.

**Reference(s):**

- [Anonymous] .
- 

**13. Does the species (or cultivar or variety) commonly produce viable seed?**

**Answer / Justification:**

According to Illinois Wildflowers, the plant can reproduce by seeds; however, this does not seem to be a common method of reproduction. Answer left blank due to lack of information. It should be noted that the seed is and has been sold by many companies.



**Reference(s):**

- Illinois Wildflowers (2017). Carpet Bugle (*Ajuga reptans*).
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**14. Does this plant produce copious viable seeds each year (> 1000)?**

**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:**

No evidence regarding germination rates could be found.

**Reference(s):**

- [Anonymous] .
- 

**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?**

**Reference(s):**

- [Anonymous] .
-



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

**Answer / Justification:**

As a perennial plant, *Ajuga reptans* will flower and set seed once/year. However, additional flowers might develop if the seeds are removed early enough in the year.

**Reference(s):**

- [Anonymous] .
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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:**

No evidence found.

**Reference(s):**

- [Anonymous] .
-



**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:**

No evidence found.

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

**Answer / Justification:**

No evidence found.

**Reference(s):**

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

**PRE Score:** 6 -- Accept (low risk of invasiveness)

**Confidence:** 71 / 100

**Questions answered:** 16 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:

- Chel Anderson December 27, 2017
- Laura Van Riper November 22, 2017
- Tom Buechel November 9, 2017

This evaluation has a total of 3 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.

### Issue ID # 6234

**Date Created:** December 27, 2017 - 8:01am

**Date Updated:** January 24, 2018 - 2:04pm

**Submitted by:** Chel Anderson

**Status:** Fixed

**Type:** Suggestion

**Severity:** Minor

**Scope:** Q13. Does the species (or cultivar or variety) commonly produce viable seed?

### Issue Description

Seems one could answer "Yes" to this question based on the Source information provided for Question 11. from Missouri BG and Illinois Wildflowers

"Carpet Bugle can reproduce by seeds or vegetatively by means of these stolons; it often forms colonies."

Additional evidence is that the seed is and has been sold for years by many companies.

### Issue Resolution (Screener's Response to Issue)

Issue resolved by PRE Data Manager -- added Illinois Wildflowers source to Q13 and an answer. Left answer blank due to lack of information.

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## **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.