

Notre Dame's STAIRmollusks

Answer as many of the following questions as possible. Record your answers and the sources used to answer each question. A list of resources that may be helpful is available [here](#). (hyperlink to "Mollusk Resources.") Guidance for interpreting the results is provided below.

Questions

1. Does the species currently exist in hardiness zone seven or below? Circle one.

YES

NO

To answer this question, determine all areas where the species is currently established as a native or non-native species. Use the USDA NAPFAST 2012 10-year map (hyperlink to http://nappfast.org/Plant_hardiness/2012/PHZ10yr2012.pdf) to determine the hardiness zones that correspond to this current geographical distribution.

To account for climate change, consider predictions for future hardiness zones available [here](#). (hyperlink to http://nappfast.org/Plant_hardiness/2007%20IPCC%20and%20GHEN/2007%20p_h_index.htm)

2. What is the species' annual fecundity? _____

Annual fecundity is the number of eggs produced or number of live young released per female per year.

All individuals should be considered female if the species is parthenogenetic or a simultaneous hermaphrodite. Parthenogenetic organisms are able to reproduce non-sexually. A simultaneous hermaphrodite possesses functioning male and female reproductive organs at the same time.

3. What is the chance that the species will become invasive? _____

Use [this table](#) (hyperlink to "Relationship between fecundity and chance" table) to determine the likelihood of invasion based on the fecundity from Question 2.

4. Is the species invasive elsewhere? Circle one.

YES

NO

If the species is invasive elsewhere, describe the invasion, including habitats affected and known impacts. Continue on the reverse if more space is needed.

5. Does the species carry parasites or pathogens of concern? *Circle one.*

YES

NO

Be sure to consider whether the species can transmit parasites and pathogens to other mollusks or non-mollusks, including humans.

6. Are there any other reasons to believe that this species will have adverse effects in the Great Lakes? *Circle one.*

YES

NO

This question is particularly important for species that don't have an invasion history but may become invasive if introduced to the Great Lakes. If the answer to this question is 'Yes', include a full description of the types of impacts possible, and why they may occur.

Interpreting Results

- A. If the answer to Question 1 is 'NO,' the risk of the species becoming established is low. However, this low risk can be offset if Questions 2-6 indicate that the species is otherwise capable of causing substantial harm.
- B. If the answer to Question 1 is 'YES,' and the answers to Questions 2-6 indicate no potential for invasiveness or harmful impacts, it is a low risk species.
- C. If the answer to Question 1 is 'YES,' and the answers to any of Questions 2-6 indicate the potential for harm, the species poses a high risk of becoming invasive.
- D. If there is insufficient data available to assess climate match or fecundity, the potential invasiveness of the species is unknown.