

**PRISM**  
 (New York Partnerships for Regional Invasive Species Management)  
**NON-NATIVE PLANT INVASIVENESS RANKING FORM**

PRISM: Adirondack Park Invasive Program

Scientific name: Hydrilla verticillata (L.F.) Royle      USDA Plants Code: HYVE3  
 Common names: Water thyme  
 Native Distribution: Warmer regions of Asia  
 Date Assessed: 21 November 2012; revised 30 November 2015  
 PRISM Assessors: Meghan Johnstone and Erin Vennie-Vollrath  
 PRISM Reviewers: Leigh Walrath, Meg Modley, Cathy McGlynn, Steve Young  
 Date Approved: 20 April 2016      Form version date: 13 April 2009  
 New York Relative Maximum score: 91.40      Date NY assessment approved: 16 June 2008  
 New York State Invasive Rank: Very High

**SUMMARY OF PRISM RANKING RESULTS:**

**Distribution:** Not Present

**Estimated number of infested sites:** 0

**PRISM Invasiveness Rank<sup>§</sup>:** Very High



**A. DISTRIBUTION AND ABUNDANCE (KNOWN/POTENTIAL):**

1. What is the species distribution and abundance in the PRISM?

- |  |             |
|--|-------------|
| A. Not present   | Not Present |
| B. Occurs in three or fewer natural areas (locations that are at least ¼ mile apart) with no infested area* >1 acre or containing >100 individuals | Restricted  |
| C. Present in 4–10 natural areas, or with one occupied location >1 acre or containing >100 individuals   | Common      |
| D. Present in >10 minimally managed areas  | Widespread  |
| U. Unknown   | Unknown     |

Answer: Not Present

Describe distribution:  
 Not known to be present in any water bodies in the Adirondack PRISM.

Sources of information:  
 Adirondack Park Invasive Plant Program 2015

<sup>§</sup>Not Assessable: not persistent in the PRISM, or not found outside of cultivation.

\*Definition of “infested area” is the “...actual or percentage of land occupied by [canopy cover of] weed plants” NAWMA (North American Weed Management Association) 2002. North American Invasive Plant Mapping Standards (see <http://www.nawma.org/>).

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2. What is the likelihood the species will occur (if not yet present) or expand its distribution and abundance (if already present) in the PRISM?

Answer: Very likely

Documentation (e.g.: history of establishment in PRISM, suitability of habitats and climate, distribution models, literature, expert opinions):

"Hydrilla verticillata, considered one of the most aggressive aquatic plants to invade North America, is poised to spread beyond a localized infestation in the inlet of Cayuga Lake to a vast network of connected waterbodies in New York State and beyond, including the Great Lakes."

"...monoecious hydrilla has the potential to grow throughout the continental US and most of Alaska and Canada. Additionally, the plant is tolerant of a range of environmental conditions, including high and low nutrients, acidic to alkaline waters, and high to low light conditions. Thus, its potential for widespread expansion throughout NYS waterways is enormous."

Monoecious hydrilla is tolerant to freezing and is not restricted by climate. In northern climates hydrilla overwinters as turions and tubers. A study looking at the turion overwintering capacity found that 67 and 42% survived cold treatments (at 4 deg. C) of 63 and 105 days, respectively. Hydrilla will likely survive the average ice duration on lakes to at least 45 degrees north latitude.

Hydrilla is an important food source for waterfowl and has historically been seen as beneficial by waterfowl managers. New hydrilla infestations in NY and NE have been found in remote waterbodies without public access and are up to 120 miles from the nearest known infestations. This hints at the potential for waterfowl as a vector for hydrilla.

Sources of information:

Menninger 2011; Maki and Galatowitsch 2008; Folker 1987; Personal communication with Scott Kishbaugh from NYS DEC.

**B. INVASIVENESS RANK IN THE PRISM:**

Is the species distribution Widespread or Common?

Yes: Go to column A in table below.

No: What is the likelihood of species occurrence or expansion? Answer: Very likely

- Very Likely:                      Use column A below
- Moderately likely:            Use column B below
- Unlikely:                            Use column C below
- Zero likelihood                Invasive potential Insignificant
- Unknown                            Invasive potential Unknown
- Not assessed                      Invasive potential not assessed

Assign a PRISM invasiveness rank to the species based on its New York Relative Maximum Score, using the designated column in the table below.

New York Relative Maximum Score	New York Invasiveness Rank	A	B	C
> 80.00	Very High	VH	H	M
70.00–80.00	High	H	M	L
50.00–69.99	Moderate	M	L	Ins
40.00–49.99	Low	L	Ins	Ins

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<40.00	Insignificant	Ins      Ins      Ins
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**Column used: A (Insert PRISM Invasiveness Rank on page 1)**

**References for species assessment:**

Adirondack Park Invasive Plant Program. 2015. Distribution of Lakes Monitored and Aquatic Invasive Species in the Adirondack PRISM, 2015. Adirondack Park Invasive Plant Program. Keene Valley, New York.

Folker, R.V. 1987. An Ecological Study of Hydrilla in the Potomac River; Waterfowl Segment. US Army Corps of Engineers. Technical Report A-87-1.

Maki, K.C., and S.M. Galatowitsch. 2008. Cold Tolerance of the Axillary Turions of Two Biotypes of Hydrilla and Northern Watermilfoil. *Journal of Aquatic Plant Management* 46, pp. 42-50.

Menninger, H. 2011. Hydrilla verticillata in the Cayuga Inlet: A science-based review to guide management actions. NY Invasive Species Research Institute, Cornell University, Ithaca, NY. 11pp.

**Citation:** This ranking form for regions within NYS may be cited as: Jordan, M.J., G. Moore and T.W. Weldy. 2008. Invasiveness ranking system for non-native plants of New York. Unpublished. The Nature Conservancy, Cold Spring Harbor, NY; Brooklyn Botanic Garden, Brooklyn, NY; The Nature Conservancy, Albany, NY. Note that the order of authorship is alphabetical; all three authors contributed substantially to the development of this protocol.

**Acknowledgments:** Valuable contributions by members of the Long Island Invasive Species Management Area’s Scientific Review Committee were incorporated in revisions of this form.