Great Lakes Hydrilla Risk Assessment
March 2016

Source: Leslie Mehrhoff, US Forest Service

Project Background:

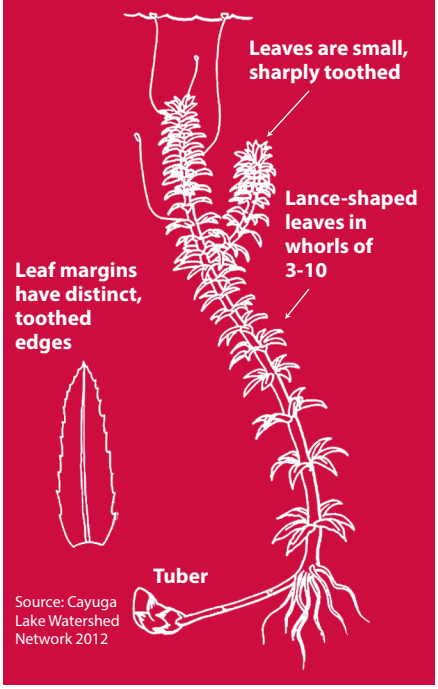
What is Hydrilla?

Hydrilla *(Hydrilla verticillata)* is a very aggressive aquatic invasive plant introduced from Korea. It is usually found rooted in shallow water (less than 25 feet deep) with long stems that can grow up to 30 feet in length and up to one inch per day. These stems branch at the water's surface and grow horizontally, forming thick, dense mats. Hydrilla also produces tubers, small potato-like structures, which store food for the plant and allow it to overwinter in bottom sediments and sprout in the spring.

Why is Hydrilla a Problem?

- It is one of the world's most invasive aquatic plants.
- It spreads rapidly through several different methods, primarily by transport of plant fragments by water currents and recreational boats and trailers.
- It produces tubers in sediment that remain viable for years, allowing the plant to overwinter and re-grow each spring, even when all aboveground parts of the plant are lost.
- It can grow up to one inch per day.
- It forms dense mats that block sunlight and displace native plants.
- It clogs waterways and restricts water flow.
- It decreases the amount of dissolved oxygen in the water which can lead to fish kills.
- It impacts waterfowl feeding areas and fish spawning sites.
- It can reduce sportfish populations due to loss of open water and native vegetation.
- It interferes with boating, fishing, and swimming due to formation of thick surface mats.
- It can harm the local economy by impacting tourism and waterfront property values.

What Does Hydrilla Look Like?



Source: Cayuga Lake Watershed Network 2012

What is a Risk Assessment?

A risk assessment is a systematic process of evaluating the potential risks that may be involved in a particular activity; in this case, the introduction and spread of hydrilla.

Project Overview:

What is this Project and What Will it Do about Hydrilla?

Hydrilla was recently discovered in the Cayuga Lake Inlet, Erie Canal, and Tinker Nature Park in New York State. It has also been documented in several waterbodies in Ohio, and this has raised concerns about the spread of this invasive plant species throughout the Great Lakes Basin. To address these growing concerns, the U.S. Army Corps of Engineers (USACE), Buffalo District, is conducting a **risk assessment** to understand the potential for introduction and establishment of hydrilla in other areas of the Great Lakes Basin. This is a multi-year project that is expected to be completed in 2017. This project focuses on the monoecious hydrilla biotype, which is better adapted to survive at higher latitudes than the similar dioecious biotype, and has been documented in the Great Lakes Basin.

Great Lakes Hydrilla Risk Assessment Process

1 Problem Definition

Problem: Hydrilla spreads rapidly and impacts water quality, native aquatic communities, and how humans use waterbodies.

Objective: Identify locations in the Great Lakes Basin that are most vulnerable to hydrilla invasion based on likelihood of introduction and habitat suitability.

Extent: Emphasis is on Great Lakes themselves, but inland waterbodies also will be considered.

Focus: Monoecious hydrilla, the biotype that favors cooler conditions and is already present in Great Lakes Basin.

2 Analysis

- Create Hydrilla Occurrence Database
- Conduct Distributional Modeling
- Evaluate Great Lakes Habitat Features
- Conduct Dispersal Modeling
- Conduct Hydrilla Growth Studies

Map Geographic Extent of Areas Susceptible to Hydrilla Invasion

Impact Analysis
- Quantify Environmental, Economic, and Social/Cultural Impacts

3 Risk Characterization

Risk Characterization
- Rank Areas in Terms of Vulnerability to Invasions and Degree of Impact
- Identify and Describe Limitations and Uncertainties of the Analysis

4 Risk Management

Recommendations and Best Management Practices (BMPs)
- Develop Recommendations for Prevention, Early Detection, and Rapid Response
- Identify BMPs for Hydrilla Control

Share Results
- Distribute Results, Recommendations, and BMPs to Stakeholders, Resource Managers, and Other Interested Parties

Stakeholder Engagement

What Will the Results Look Like and How Will They Be Used?

This project will produce information that can be used to communicate the risks of hydrilla invasion and what can be done to prevent its introduction and how to control hdyrilla if introduced. Results will be in the form of maps and figures, reports, presentations, and fact sheets.

Who Can I Contact for More Information?

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