

*Stratiotes aloides*, **Water Soldier**



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<b>Common Name:</b>	Water soldier, Water pineapple, Saw tooth, Water aloe
<b>Scientific Name:</b>	<i>Stratiotes aloides</i>
<b>ID Description:</b>	Submerged aquatic plant, becomes buoyant during summer. Leaves are 40 cm long, sword-shaped, sharply serrated edges, bright green. Leaves form a large rosette. Roots may or may not be attached to pond bottom. Looks similar to an aloe plant, spider plant, or top of a pineapple. May produce a showy white flower with 3 petals.
<b>Current Distribution in US and VT:</b>	Trent River and Redhorse Lake, Ontario CA
<b>Habitat:</b>	Shallow stagnant waters; may grow submerged or floating
<b>Regulated/restricted in these states:</b>	IL, MI
<b>Concern:</b>	Water soldier is a perennial aquatic plant that may easily escape a managed area such as an ornamental pond and form dense mats that alter water quality and crowd native vegetation.
<b>Means of Introduction and Spread:</b>	The native range is Europe and northwest Asia. It spreads mainly vegetatively through the aquarium/pond trade, watercraft movement, and by wildlife. Spread by seed is also possible

### **Plant Pest Designation Rationale**

#### **Ecological Threat:**

*Stratiotes aloides*, commonly known as water soldier or water pineapple, presents a significant ecological threat to the northeastern United States due to its invasive nature and detrimental impacts on aquatic ecosystems. This submerged aquatic plant forms dense mats on the water surface, particularly in slow-moving or stagnant water bodies such as lakes, ponds, and wetlands. These mats can inhibit water flow, block sunlight from reaching submerged plants, and deplete oxygen levels in the water, leading to hypoxic conditions that are harmful to fish and other aquatic organisms. The dense growth of water soldier can outcompete native aquatic vegetation, reducing biodiversity and altering the structure and function of aquatic habitats.

#### **Economic Impact:**

The potential economic impact caused by water soldier in the northeastern U.S. is significant, affecting various sectors such as tourism, recreation, agriculture, and water management. This invasive aquatic plant forms dense mats on the water surface, hindering navigation and impeding recreational activities like boating, fishing, and swimming. These disruptions can deter tourists and outdoor enthusiasts, leading to potential revenue loss for businesses reliant on tourism and recreational industries. Additionally, the presence of water soldier can increase maintenance costs for infrastructure and water management facilities due to its interference with water flow and drainage systems. Water soldier can negatively impact agriculture by clogging irrigation systems, reducing water availability for crops, and impeding agricultural activities such as irrigation and harvesting.

**Feasibility of control and spread prevention:**

Mechanical methods such as hand harvesting can help manage smaller infestations, especially when followed by proper disposal to prevent regrowth. Public outreach is another key tool in preventing spread of aquatic plants. Boaters should carefully clean boats and equipment when moving between bodies of water; all soil and organic debris should be removed as well as bilge water. Gardeners and hobbyists should only plant non-invasive or native plants in ponds or aquariums. Aquarium water should be disposed of in a way that does not contaminate natural water-bodies.

**Water soldier invading the Trent Waterway (Ontario, Canada)**



Photo: F. MacDonald, NDMNRF

### Water soldier infestation



Credit: Ontario Invasive Species Awareness Program, OFAH

### Reported US distribution of *Stratiotes aloides* in EDDMaps



EDDMapS. 2024. Early Detection & Distribution Mapping System. The University of Georgia - Center for Invasive Species and Ecosystem Health. Available online at <http://www.eddmaps.org/>; last accessed February 16, 2024.

**References:**

<https://dnr.wisconsin.gov/topic/Invasives/fact/WaterSoldiers>

[MI Department of Agriculture Weed Risk Assessment: Water Soldier](#)

[Ontario Invasive Species Awareness Program: Water Soldier](#)

[Species Profile - Water soldiers \(usgs.gov\)](#)

[Water soldiers \(Stratiotes aloides\) ERSS \(fws.gov\)](#)

\*This content was edited with the assistance of a generative artificial intelligence, ChatGPT. The content has been reviewed and verified to be accurate and complete and represents the intent of the Plant Health Section of the VT Agency of Agriculture, Food and Markets.