



Kathryn Des Jardin

STARRY STONEWORT

Nitellopsis obtusa
Origin: Eurasia

HABITAT

Slow-moving aquatic habitats up to 9m deep, including low light and low nutrient conditions. It is adapted to both fresh and brackish habitats.

MANAGEMENT STRATEGIES

Chemical
Physical
Mechanical
Preventative



FINGER LAKES
INSTITUTE



www.starrystonewort.org

REFERENCE - Larkin DJ, Monfils AK, Boissezon A, Sleith RS, Skawinski PM, Welling CH, Cahill BC, Karol KG. 2018. Biology, ecology, and management of starry stonewort (*Nitellopsis obtusa*: Characeae): A Red-listed Eurasian green alga invasive in North America. *Aquatic Botany* 148:15–24. DOI: 10.1016/j.aquabot.2018.04.003
Hackett RA, Cahill BC, Monfils AK. 2017 Dec. State of Michigan's Status and Strategy for Starry Stonewort (*Nitellopsis obtusa* (Desv. in Loisel.) J. Groves) Management. http://www.michigan.gov/documents/deq/wrd-ais-nitellopsis-obtusa-strategy_499687_7.pdf



Starry stonewort is a submerged macroalgae that can grow up to 2 m in length. It is comprised of long, single-celled internodal segments divided by nodes, from which whorls of 5-7 branchlets extend. Varying in color depending on the time of year, the plant starts as a bright green and changes to a greenish-brown as the season progresses. It is anchored by clear root-like structures (rhizoids) and produces white, star-shaped bulbils beneath the sediment. Additionally, in low oxygen conditions it produces orange structures (antheridium) at the branchlet and rhizoid nodes.

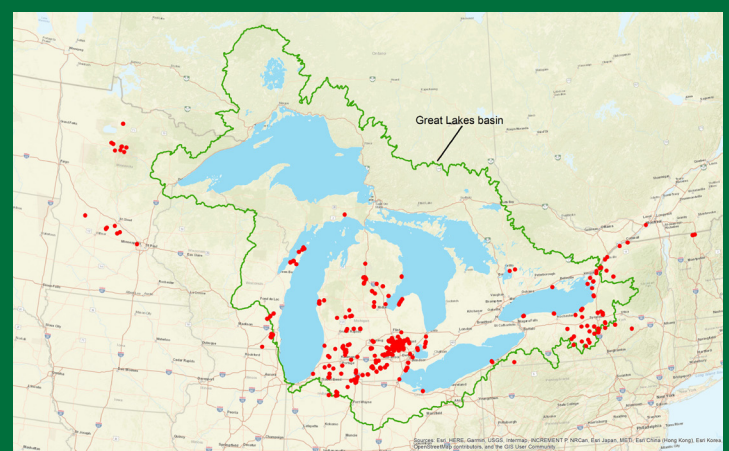
THREAT

Starry stonewort forms dense 'pillows' of vegetation, which outcompete aquatic plants and interfere with human and fish movement. Dense infestations are correlated with low abundance and diversity of plant species and can completely block fish spawning. Additionally, it can rapidly take over disturbed sediment, allowing it to quickly establish dominance following control efforts for both itself and other plants.

MANAGEMENT

The best management strategy is prevention through education and stewardship. As this species is most commonly spread through fishing and boating equipment, it is important to use precautions such as cleaning, draining, and drying your boat and other aquatic equipment before moving to another water body. Additionally, because it can spread from bulbils or fragments of the plant, it spreads very easily, making it especially important to stop it at this stage. Control options once it has been established have shown mixed results, primarily acting as a temporary solution. Although chemical controls can reduce biomass, the portion of the plant under the sediment is often left unharmed, allowing it to recover quickly after treatment stops. Manual or mechanical control is more likely to succeed if the infestation is small and detected early, but is labor intensive and expensive in order to be effective.

DISTRIBUTION ACROSS THE GREAT LAKES BASIN (USGS-NAS, 01/20/20)





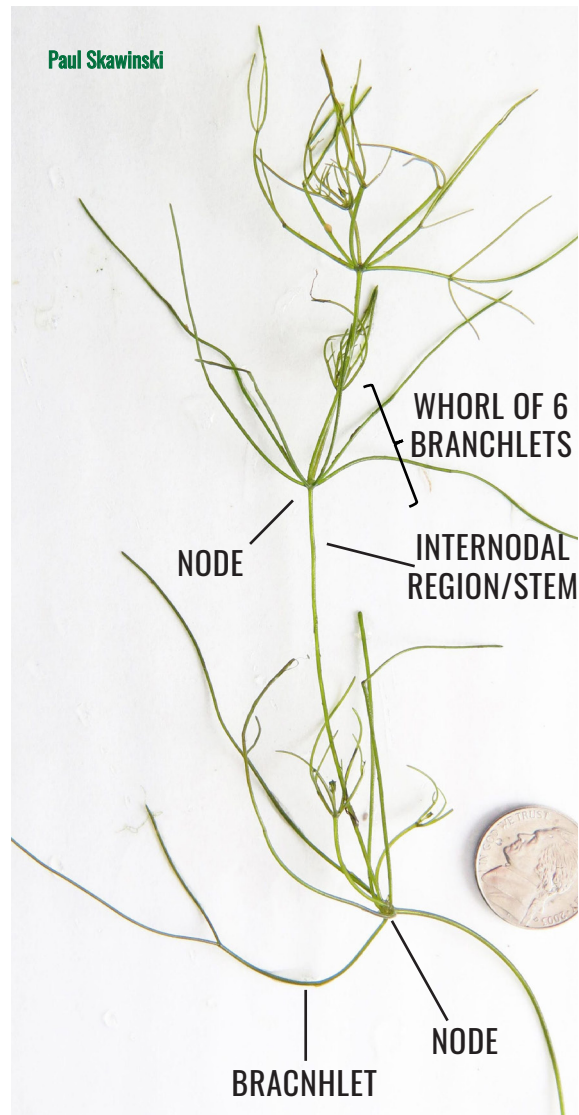
Robin Steffh

MALE ANTHERIDIA, FOUND DEVELOPING AT BRANCHLET NODES



Scott Brown

A BULBIL, COMMONLY FOUND UNDER THE SEDIMENT



Paul Skawinski

LOOKALIKES

Although other macrophytes and macroalgae share similar habitats and appearances, with all having whorls and branchlets, starry stonewort can be positively identified by several traits:

- Star shaped bulbils
- Larger in diameter due to longer branchlets
- No skunky smell (unlike muskgrass)

COMMONLY MISTAKEN NATIVE SPECIES



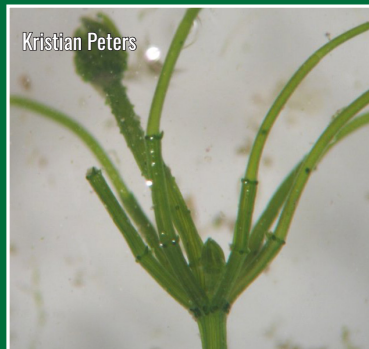
Christian Fischer

Sago Pondweed
Stuckenia pectinata



Christian Fischer

Chara globularis



Kristian Peters

Muskgrass
Chara vulgaris



Show Ryu

Smooth Stonewort
Nitella flexilis