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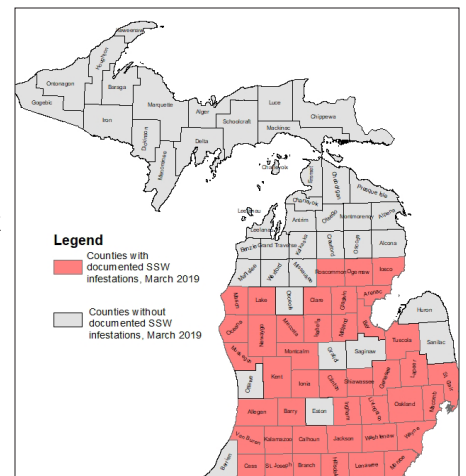
Starry Stonewort

The Water Resources Group
Progressive AE

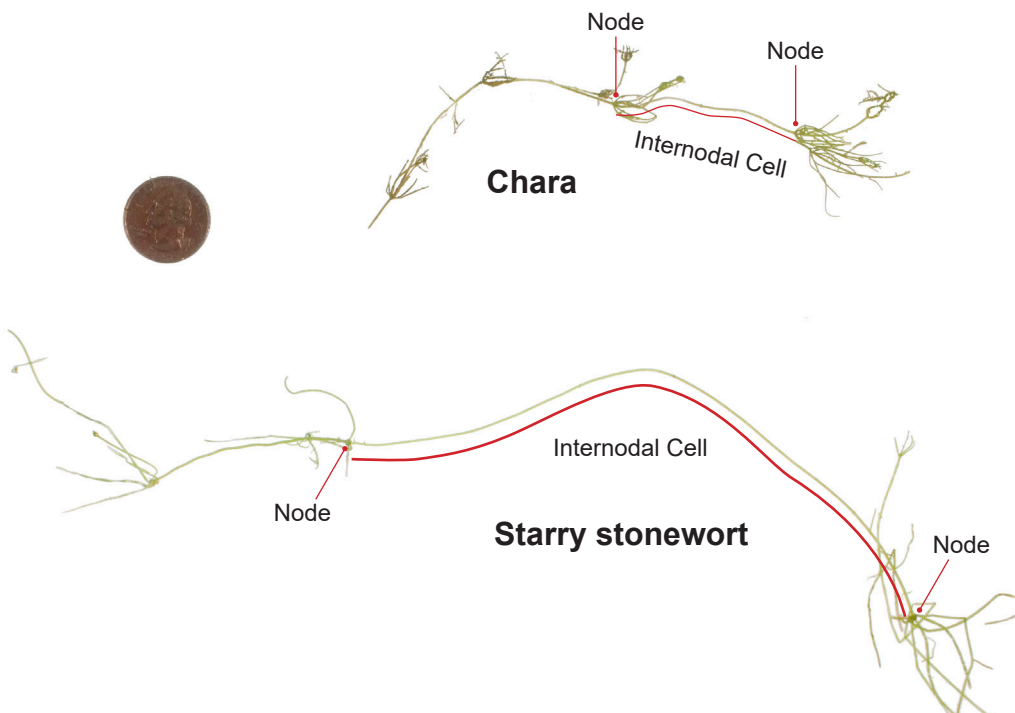
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Starry stonewort (*Nitellopsis obtusa*) looks like a rooted plant but it is actually an algae. The plant is native to Europe and Asia and was first discovered in the St. Lawrence River, downstream of Montreal, Quebec in 1974.¹ In 1983, it was found in the Detroit River near Belle Isle² and as of March 2019, starry stonewort was present in 41 of Michigan's 83 counties.³

Starry stonewort resembles the native aquatic plant Chara. Both plants can form a thick green mat on the lake bottom. One way to distinguish the two plants is by the length of their "internodal cells." The internodal cells of starry stonewort are generally much longer than those of Chara. Starry stonewort gets its name from tiny, star-shaped, light-colored structures called "bulbils" that are firm to the touch when compared to its soft branches.



Starry stonewort distribution in 2019.³



Bulbils are small, but visible to the naked eye.

Both male and female starry stonewort plants occur in Europe and Asia, and either sexual or vegetative reproduction can occur. In North America, only male plants have been found.^{4,5} As such, it may be that North American starry stonewort only reproduces vegetatively, and all plants are clones; new plants sprout from bulbils or grow from fragments.⁴ Up to 500 bulbils per square yard were found in Lake Koronis in central Minnesota.⁶

Analysis of the environmental conditions necessary to support starry stonewort indicate that its potential further expansion into other regions of North America is high⁷. There has been very little research on the ecological impacts of the North American starry stonewort invasion. One study did find that the diversity and abundance of rooted plants decrease when starry stonewort is present.⁸ Laboratory testing has shown that starry stonewort can release substances that inhibit the growth of some types of blue-green algae, but has not been confirmed in nature.¹⁰



Lakes having higher conductivity, hardness, and calcium concentration may provide favorable conditions for starry stonewort growth.^{4,9,11} Bulbil production has shown to increase dramatically late in the season (October through November).^{4,6,8} Starry stonewort has a tendency to colonize deeper waters and can form dense, nearly impenetrable mats, several feet thick.¹¹ In many infested lakes, starry stonewort impedes navigation and other recreational activities.

Control of starry stonewort remains a challenge. Herbicide treatments and mechanical harvesting are partially effective at controlling starry stonewort infestations and may work best when used in combination.⁶ However, neither herbicides nor mechanical harvesting reduce the viability of bulbils, therefore, the plants can continue to

overwinter and reproduce. Control of starry stonewort infestations via diver-assisted suction harvesting is time- and labor-intensive, and may require repeat visits to maintain control.⁴ It appears that burlap mats provide only short-term control of starry stonewort; sedimentation of the mats and invasion along the mats' edge may preclude effective long-term control of starry stonewort (A. Tucker, personal communication, July 9, 2018).

Periodic aquatic vegetation surveys to detect early infestations of starry stonewort are recommended so that quick action can be taken to attempt to suppress the spread of the plant. Much more research is needed to understand the impacts of starry stonewort and to improve methods to control this invasive plant.

References

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About the Authors:

For nearly 35 years, Progressive AE's Water Resources Group has provided professional lake and watershed management services to communities across Michigan. The Water Resources Group created MichiganLakeInfo.com, a website for those interested in Michigan's inland lakes. On the site you can find this article and information on topics such as lake water quality, lake and watershed management, aquatic biology, emerging issues, invasive species and more.