

Starry stonewort
Nitellopsis obtusa
(Non-native)
(Actual size)

Branchlets in whorls
of about 6

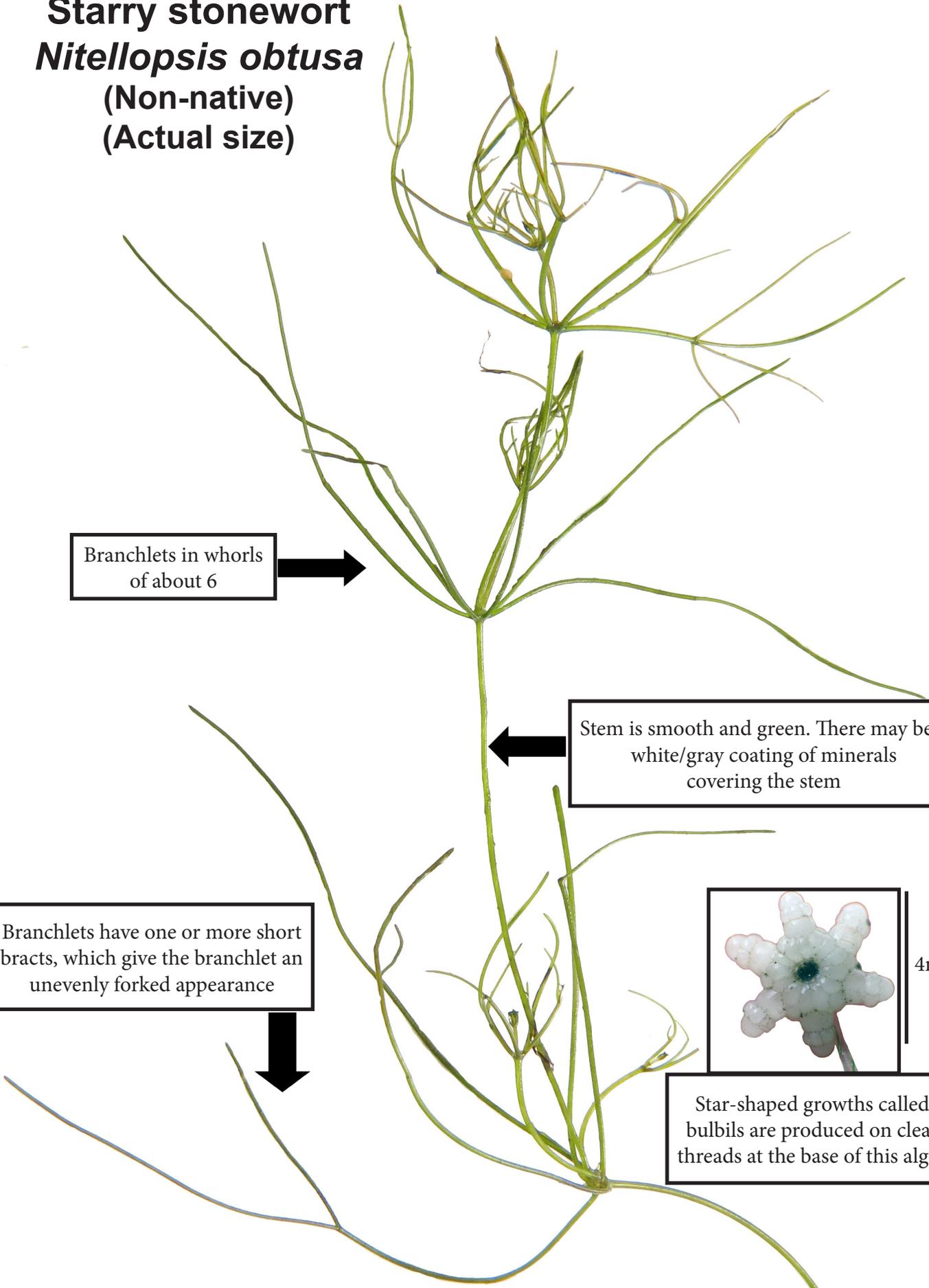
Stem is smooth and green. There may be a
white/gray coating of minerals
covering the stem

Branchlets have one or more short
bracts, which give the branchlet an
unevenly forked appearance



4mm

Star-shaped growths called
bubils are produced on clear
threads at the base of this algae



STARRY STONEWORT

Nitellopsis obtusa

Starry stonewort is a type of non-native, aquatic algae from Europe and Asia. Unlike the microscopic algae that can make a water body green and cloudy, starry stonewort and its many native relatives in the Characeae family are anchored to the bottom of the lake, and can be well over a meter tall. These large algae resemble vascular plants, with structures that resemble stems and leaves.

Starry stonewort has been known to grow in dense stands that exclude other aquatic vegetation. These stands can also create a serious nuisance for boaters and other recreational users of lakes. This species has been documented in Wisconsin and several states to the east.

Description: Starry stonewort's main stem can be over two meters long, and typically has many whorls of 4-8 leaf-like structures called *branchlets*. These branchlets can be several inches long. Lower branchlets are undivided, but upper branchlets may appear divided, due to a short *bract cell* that develops where the round, orange reproductive structures will eventually form. White *bulbils* are formed in the sediments on clear threads called *rhizoids*. *Nodes* along the stem can also turn into bulbils in late autumn.

Unlike most species of the related muskgrasses (*Chara* species), the stem of starry stonewort is smooth and generally bright green (unless covered in mineral deposits).

Habitat: Starry stonewort may grow anywhere from a few inches deep to 9 meters deep. It prefers hard-water lakes with marl sediments. This species can tolerate low light conditions, and may persist under ice cover in some lakes. Because of its likelihood to be transported by boating equipment, boat landings are good places to monitor for the introduction of starry stonewort.

Similar species: Starry stonewort is closely related to many other large, native algae, the most common ones being species of *Chara* (muskgrasses) and *Nitella* (stoneworts). All *Nitella* species have branchlets that fork near their ends, while starry stonewort branchlets do not fork. Most *Chara* species have rough stems covered in long, narrow cells; starry stonewort stems are smooth and do not have any long, narrow cells covering them. A couple of *Chara* species produce bulbils, but these tend to be ball-shaped, rather than star-shaped.

Management and Control: Manual removal of starry stonewort is difficult, but can be an option for small populations. Diver-assisted suction harvesting has been used to increase the efficiency of manually removing starry stonewort. Care must be taken to remove the bulbils as well, or these bulbils will sprout new individuals. Some chemical herbicides have been able to reduce starry stonewort, but effectiveness tends to decrease as the stands get taller and more dense. An effective biological control agent is not known at this time.

Only male starry stonewort has been documented in the United States. This means that there is no sexual reproduction taking place, and therefore, no production of seeds. All reproduction of starry stonewort here is via transportation of stem fragments or bulbils.

Bract cell - a short cell that forms beside a reproductive structure on a branchlet.

Branchlets - leaf-like structures, usually in whorls of 4-8.

Bulbils - starchy structures that are produced in the sediments or at nodes along the stem.

Node - a location where a branchlet meets a stem or branch.

Rhizoids - colorless, transparent threads in the sediments that provide stability and produce bulbils.

Information adapted from the following sources:

Pullman, G.D. and Gary Crawford. 2010. A decade of starry stonewort in Michigan. *Lakeline*, summer 2010. 36-42.

Skawinski, P.M. 2014. *Aquatic Plants of the Upper Midwest*, 2nd Ed. Available through the UW-Extension Lakes Program.



Wisconsin Citizen Lake Monitoring Network
www.uwsp.edu/cnr/uwexplakes/clmn



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