



Chara in Clearwater Lake on July 28, 2023

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## **Starry Stonewort Searches at Seven Boat Accesses for Clearwater Lake, Wright County, Minnesota, 2023**

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**Survey Dates:**  
**1<sup>st</sup> Search: July 28, 2<sup>nd</sup> Search September 13,  
and 3<sup>rd</sup> Search October 16 and 17, 2023**

**Prepared for:**  
Clearwater Lake Property  
Owners Association



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# Starry Stonewort Searches at Seven Boat Accesses for Clearwater Lake, Wright County, Minnesota, 2023

**Summary of the 2023 searches:** Staff from Blue Water Science, surveyed 7 boat accesses on July 28, 2023 (Figure 1). A combination of snorkeling and scuba diving (a total of 8.5 search hours) were conducted (Table 1). No starry stonewort was observed at any location.

On September 13, 2023 two staff from Blue Water Science surveyed 7 boat accesses. A combination scuba diving and snorkeling was conducted (Table 1). No starry stonewort was observed at any lake access location.

A final search of the 7 boat accesses occurred on October 16 and 17, 2023. Searches were conducted by snorkeling and scuba diving.

At the conclusion of 2023 growing season, no starry stonewort at major lake access areas had been observed. However in August during a point intercept survey starry stonewort was observed in a backwater isolated cove. Treatment of the starry stonewort occurred in 2023.

## Search Locations in 2023



Figure 1. Location of the access search sites.

Table 1. Individual site data for the starry stonewort searches in 2023.

	Representative Rake Sampling and Diving	Starry Stonewort (SSW)	Aquatic Plant Notes	Bottom Conditions
<b>July 28, 2023</b>				
1. Bob's Bay Access	60 minutes of diving	No SSW found	Coontail dominant, Purple loosestrife present, Filamentous algae common	Organic sediments and silty sand
2. Black Pool Access	60 minutes of diving	No SSW found	EWM fragments present, wild rice and Mare's tail present, NWM present	Mostly silty sand, some scattered rocks
3. Clearwater Forest Access	60 minutes of diving	No SSW found	Water celery and milfoil present. No chara is shallow water, turbid water	Organic sediments with some silty sand
4. Maple Hills West Access	60 minutes of diving	No SSW found	Abundant plant growth, no milfoil, chara abundant	Shallow landing, silty sand
5. East Shore (Highway 24) Private Access	70 minutes of diving	No SSW found	Coontail abundant, chara common.	Mostly sand with some gravel
6. Clearwater East Access (Killbury Ave NE)	50 minutes of diving	No SSW found	NWM abundant, extensive chara beds. Clear water	Sandy changing to silty-sand
7. Bungalow Island	60 minutes of diving	No SSW found	Chara, claspingleaf pondweed, water celery common.	Shallow landing, silty with some soft muck sediments.
<b>September 13, 2023</b>				
1. Bob's Bay Access	15 minutes of diving	No SSW found	limited plant growth, limited habitat for SSW, heavy filamentous algae	Sand, gravel, cobble in landing area, mucky outside landing area
2. Black Pool Access	20 minutes of diving	No SSW found	Turbid water, NWM and EWM present, some chara	turbid water, silty
3. Clearwater Forest Access	20 minutes of diving	No SSW found	CLP in 2-3', chara present	sand/gravel around landing area. Transitions to silt
4. Maple Hills West Access	15 minutes of diving	No SSW found	Abundant plant growth, good diversity	shallow access
5. East Shore (Highway 24) Private Access	30 minutes of diving	No SSW found	Chara present, diverse plant community	Deep water, wind driven turbidity
6. Clearwater East Access (Killbury)	40 minutes of diving	No SSW found	Abundant and dense chara. Suitable habitat for SSW.	shallow access
7. Bungalow Island	10 minutes of diving	No SSW found	Chara, claspingleaf pondweed, water celery common.	Shallow landing, silty with some soft muck sediments.
<b>October 16 and 17, 2023</b>				
1. Bob's Bay Access	20 minutes of diving	No SSW found	limited plant growth, limited habitat for SSW, heavy filamentous algae	Sand, gravel, cobble in landing area, mucky outside landing area
2. Black Pool Access	30 minutes of diving	No SSW found	Turbid water, NWM and EWM present, some chara	turbid water, silty
3. Clearwater Forest Access	20 minutes of diving	No SSW found	CLP in 2-3', chara present	sand/gravel around landing area. Transitions to silt
4. Maple Hills West Access	20 minutes of diving	No SSW found	Abundant plant growth, good diversity	shallow access
5. East Shore (Highway 24) Private Access	20 minutes of diving	No SSW found	Chara present, diverse plant community	Deep water, wind driven turbidity
6. Clearwater East Access (Killbury)	20 minutes of diving	No SSW found	Abundant and dense chara. Suitable habitat for SSW.	shallow access
7. Bungalow Island	15 minutes of diving	No SSW found	Chara, claspingleaf pondweed, water celery common.	Shallow landing, silty with some soft muck sediments.



# Representative Conditions in Clearwater Lake



Bobs Bay Public Access



Clearwater Forest Access



Black Pool Public Access

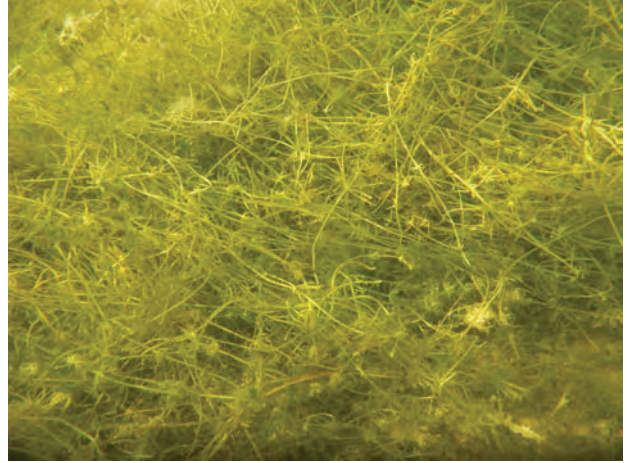


(Mare's tail)

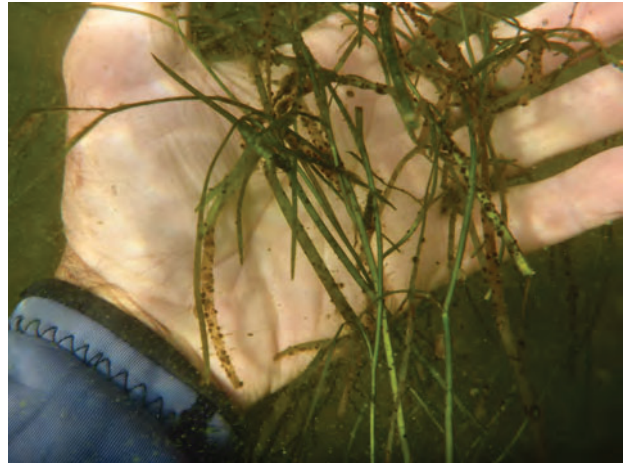




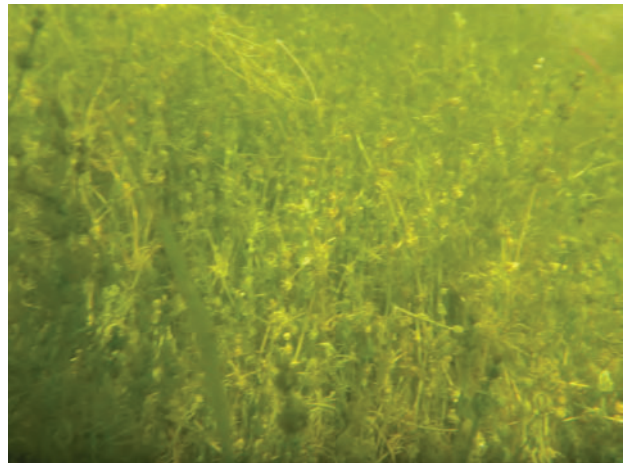
Maple Hill West Access



Highway 24 Access



Clearwater East Access



# Starry Stonewort Identification Tips

**INVASIVE** **Starry stonewort**  
*Nitellopsis obtusa*

**KEYS TO ID**

- Long, smooth branchlets are attached in whorls of 5 – 8
- Small, star-shaped bulbils form on clear threads at base of plant and may be found above or below the sediment surface
- Small, orange spheres called antheridia may be visible; these are male reproductive structures
- Typical branchlets are long; can be up to twelve inches
- Can form dense mats in water




**LOOKS SIMILAR TO**

- Native *Chara* (native)
- Native *Nitella* (native)
- Sago pondweed (native)
- Water stargrass (native)

**WHERE TO LOOK**

- In shallow, still water and near accesses

**CURRENTLY FOUND**

*Actual size of bulbils*  
*Below, orange antheridia*



Figure 2. [left] Starry stonewort identification page from the University of Minnesota Aquatic Invasive Species Research Center (MAISRC). [left] Starry stonewort from Lake Koronis on July 31, 2017.

**NATIVE** **Muskgrasses**  
*Chara spp.*

**KEYS TO ID**

- Stems are typically rough and crunchy
- Thin branchlets form whorls around thin stems
- May produce bulbils, but not star-shaped
- May have musky odor




**LOOKS SIMILAR TO**

- Starry stonewort (invasive)
- Native *Nitella* (native)
- Sago pondweed (native)
- Water stargrass (native)
- Minnesota has nine *Chara* species

**WHERE TO LOOK**

- Fully submerged
- Along lake bottoms forming patches called meadows

**CURRENTLY FOUND**

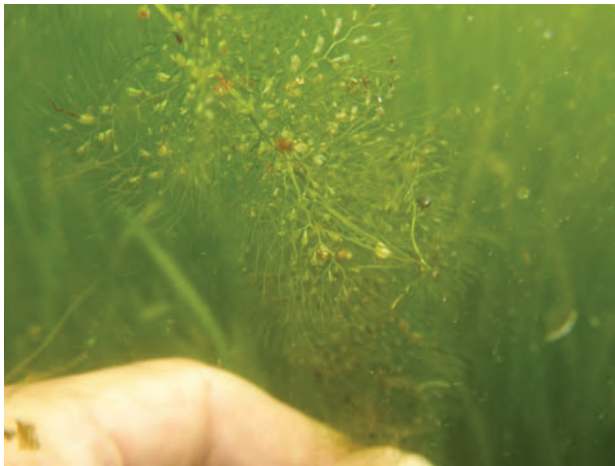
*Rough stems; whorled branchlets*



Figure 3. [left] Chara identification page from the MAISRC. [right] Starry stonewort looks a lot like some growth forms of chara. Starry stonewort was not observed in Clearwater Lake in 2022. The photo is chara from Clearwater Lake.



## Representative Aquatic Plants in Clearwater Lake



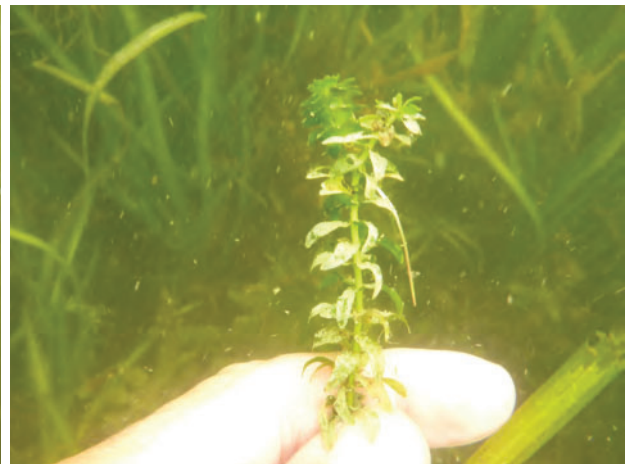
**Bladderwort**



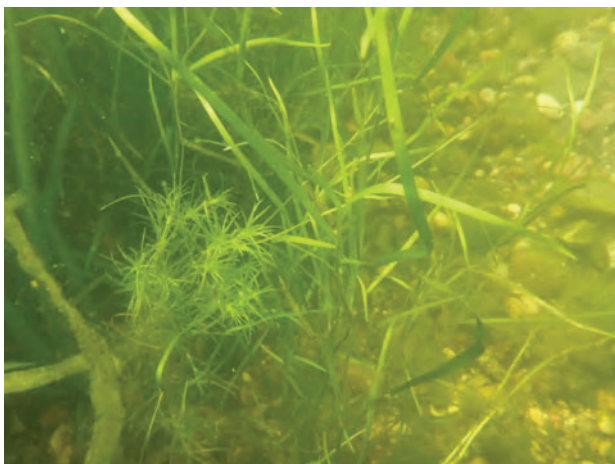
**Chara**



**Coontail**



**Elodea**



**Naiads and water celery**



**Water celery**

# Representative Aquatic Plants in Clearwater Lake



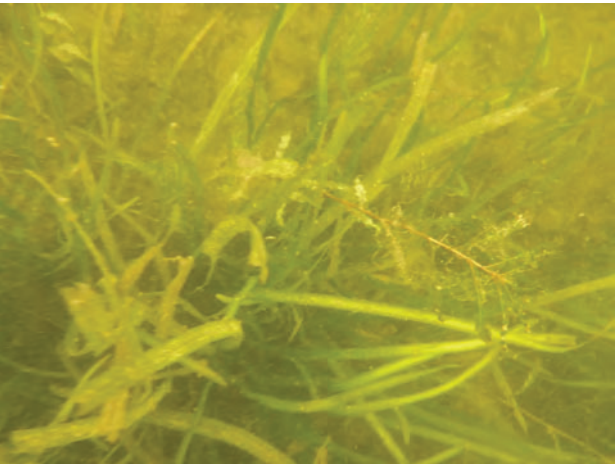
**Water lilies**



**Coontail**



**Northern watermilfoil**



**Water celery**



**Curlyleaf pondweed**



**Mare's tail**