

Starry Stonewort Identification Guide

Prepared by: Shelby Ravary, Tyler J. Harrow-Lyle, and Dr. Andrea E. Kirkwood



This is a tangled mass of Starry Stonewort where stems appear **smooth**

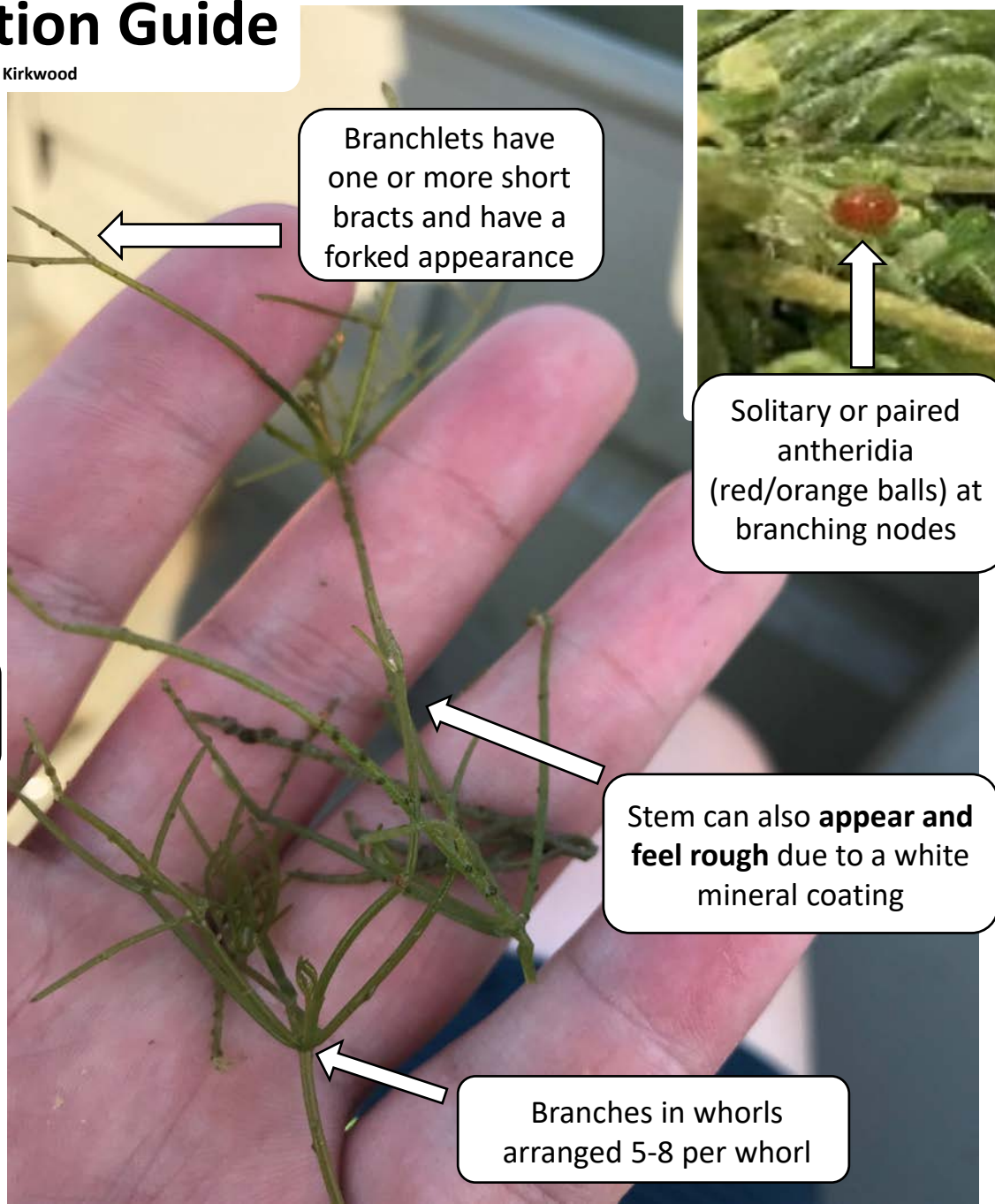


Starry Stonewort Can often have a tangled appearance



Stems can be 1 cm – 2 m in length!

Please note that appearance can change under different environmental conditions

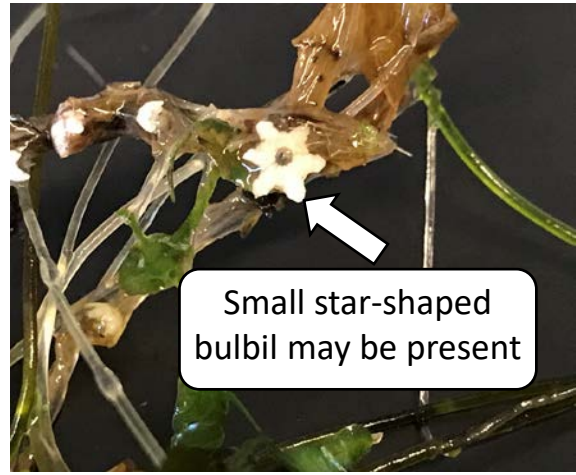


Branchlets have one or more short bracts and have a forked appearance

Solitary or paired antheridia (red/orange balls) at branching nodes

Stem can also **appear and feel rough** due to a white mineral coating

Branches in whorls arranged 5-8 per whorl



Small star-shaped bulbil may be present



Presence of a clear monofilament (looks like fishing line) that may be connected to a bulbil

Photo Source: T.J. Harrow-Lyle. Some photos have been adapted from Harrow-Lyle and Kirkwood (2021).

Here are some **similar looking species** that can grow with Starry Stonewort, and be misidentified as Starry Stonewort



Chara sp. (Muskgrass)



Source: C. Fischer via Wikipedia and licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

Tolypella sp.



This Photo by Unknown Author is licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

Nitella sp.



This Photo by Unknown Author is licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

Starry Stonewort Identification Checklist

You likely have a Starry Stonewort specimen if you can check all of the following boxes:

- Specimen is one of the following colours: **bright green, yellow, brown, or black**
 - Note: Colour varies according to environmental conditions
- Stems are smooth or rough
- Specimen with multiple stems has a messy or tangled appearance
- No noticeable odour
- Irregular whorled branches ranging from 5-8 branches at each whorl segment
- Antheridia (small red balls) present on branches
 - Small red balls **may not be present** so their absence does not disqualify your sample from being Starry Stonewort
- Star-shaped bulbils
 - bulbils **may not be present** so their absence does not disqualify your sample from being Starry Stonewort
- Clear monofilament (like fishing line) at the base of each stem



Photo Source: T.J. Harrow-Lyle



Photo Source: T.J. Harrow-Lyle

Specimen Sample Confirmation

We encourage volunteers to consider sending a suspected Starry Stonewort sample to Ontario Tech University to confirm its identity. Starry Stonewort can be very delicate and/or brittle, requiring special care when preserving a sample for transport to the lab. **AVOID SQUISHING THE BRANCHES AND STEMS IF POSSIBLE.**

A specimen sample can be a **portion of stem with whorls and branches**, it can also consist of a **stem and bulbil (if present)**.

Steps for preparing your sample for mailing:

- Before you prepare the sample for shipment, take photos prior to washing and drying
 - Photos of a **tangled mass** and **individual stems and branches** are especially important. You will email digital photos to the email address provided below
- Rinse any dirt or debris off of the specimen sample, and ensure other entangled plants are removed
- Allow to air dry for 60 minutes or until fully dry
- Gently place in a small ziplock bag, remove air, and seal
- Place ziplock bag in a small bubble-lined envelope with your name and address and mail to Ontario Tech University (address below). For best results, we recommend expedited mail (1-3 days) if possible

When sending a specimen, please complete the following steps:

1. Fill out the **specimen submission form** included with your Volunteer Sampling Kit.
2. E-mail digital photos, including your full name and lake name, to this email address: **StarryStonewortID@gmail.com**
3. Mail dried specimen with completed submission form to this address within 1-3 days of collection:
Ontario Tech University
2000 Simcoe St.N.
Oshawa, ON L1G 0C5
Attention: Andrea Kirkwood, Faculty of Science