

Didymo Monitoring

Objective: Protect Michigan waters from the harmful effects of Didymo mats

Collect a stream algae sample to help monitor for *Didymosphenia germinata* (aka Didymo, rock snot) in Michigan waters. Didymo is an aquatic invasive species that forms dense mats in coldwater streams, similar to where trout prefer to live. Anglers can spread Didymo from one stream to another, introducing it to susceptible ecosystems and potentially harming trout populations. Michigan Trout Unlimited's goal, with the help of TU members, is to monitor Michigan waters for Didymo. Together, we will aid in reducing the spread of Didymo and other invasive species and inform AIS management. Below outlines the process of collecting an algae sample, shipping your algae to Dr. Jordyn Stoll, and submitting the necessary sample information needed.



Didymo mats feel woolly.
Photo credit: Michigan DNR

Step 1: Collect what you'll need



Photo credit:
Michigan DNR

Sample vessel. Anything from an old eye contact lens case to a food container— the smaller the better, but it must be watertight.

Scrubbing device. An old toothbrush is ideal, but any sort of brush will work.

Preservative. Rubbing alcohol or vodka. Aquatic ecologists use iodine or other specialized fixatives, but those are not necessary for our purposes.

Ziplock bag.

Ice pack (optional).

Before your next trip to a river, pack a small container or eye contact lens case, old toothbrush, and a small container of rubbing alcohol or vodka. These items should fit into a ziplock bag.

Step 2: Choose a sampling location

When out fishing or recreating, consider collecting an algae sample, even if Didymo doesn't appear to be present. Our goal is to monitor for Didymo, so sampling multiple rocks/substrates in a stretch of stream is ideal. Anywhere that you see 'streamers' of filamentous algae or 'mats' of algae are extra important to sample, as Didymo often grows in colonial forms. As of August 2023, Didymo has been recorded in the Manistee, Boardman, and St. Mary's systems, but monitoring efforts across MI have been limited; Didymo may be in more locations than what is known.

Step 3: Using Survey123 to submit sample information

Before you collect a sample, be sure to load the [sample information survey](#). The survey can be completed in the Survey123 app (best if you anticipate having limited cell service, but needs refreshed occasionally), or via your phone's browser (e.g. Google Chrome, Safari). Ignore the 'Sign into ArcGIS online' message if it appears. Please allow Survey123 to access your location and camera, as the survey requests pictures the stream reach and sample location. The TU RIVERS program also uses survey123 and [here](#) is that program's webpage with more survey123 info.



Survey123 app logo
and survey QR code



Didymo Monitoring

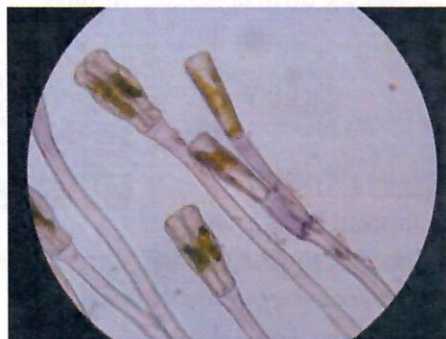
Step 4: Sample survey, collection, preservation, and shipping guidelines

- a. **Assess the stream where you collected your sample and complete the [required survey](#).** You'll be asked to describe the stream, provide a GPS location (simply by turning on your phone's location data briefly), and provide your name and contact info. The more information we can collect about where Didymo is found, or not found, the better. This information will contribute to our understanding of Didymo's preferred habitat and where prevention efforts should focus.
- b. **Collect your sample.** If 'streamers' or 'mats' are present, collect a small piece and place it into your container. Use your scrubber (e.g. toothbrush) to scrape algae off rocks or woody debris in the stream (5-10 rocks is ideal). You can use a small volume of preservative (e.g. rubbing alcohol) to rinse the brush in your sample vessel. Remember that the cells we are looking for are microscopic, so we only need a very small sample, and it is less expensive to ship a small sample. Note: Stream algae generally do not irritate most people's skin, and do not produce harmful toxins as some lake algae do. It is generally considered safe to handle stream algae without personal protective equipment.
- c. **Preserve your sample** and keep your sample cool and in a dark place. Add preservative (rubbing alcohol or vodka) to your sample to be at least half of the total volume, ensuring all algae are completely submerged in liquid. Ensure your sample stays out of the sun and doesn't warm up.
- d. **Ship your sample the day of collection** or the following day (within 48 hours). Place your sample vessel (e.g. contact lens case with sample within) into a ziplock bag, preferably with a small ice pack. Mail your sample with **Priority Mail** to **7851 Murray Ridge Rd., Elyria, Ohio 44035** with ATTN



Didymo colonies coating a stream bed with sand and gravel substrate.

Photo credit: Michigan DNR



Didymo cells with extracellular stalks under a microscope. Photo from Whitton et al. 2009.

JORDYN on the package. **Include your name on the package** so your survey info can be matched with your sample. If you take samples in more than one stream reach (more than 100 meters apart) and ship samples together, ensure that you label the samples (e.g. site 1, site 2). Please complete the survey for each sample, including the sample ID in the sample description. If you are interested in learning about the results of your sample, indicate your interest in the survey or reach out to Jordyn directly. **Make sure to decontaminate your gear after sampling!**