INVASIVE ALGAE

# Didymo

*Didymosphenia geminata*

Sea Grant PENNSYLVANIA

Photo courtesy of New Hampshire Department of Environmental Services.

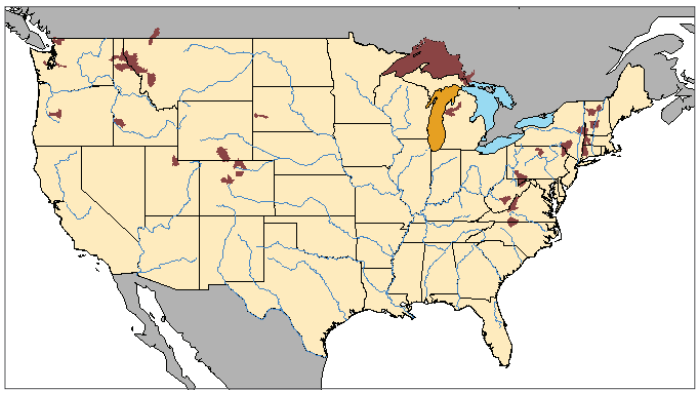
Didymo commonly referred to as “rock snot”, is a species of freshwater diatom native to cool water regions of northern Europe and North America. Didymo can form large colonies, or “mats” that may negatively impact fish and macroinvertebrate communities.

## Species Description

Didymo is a large diatom, which is a type of single-celled algae. Although it is microscopic, Didymo can form large colonies, or “mats” that can be seen with the naked eye. Young colonies look like raised pimples on the surfaces of river rocks; however, they can grow and elongate to form long stalks. The extracellular stalk material has the texture of wet wool and appears as strands of toilet paper or fiberglass in the water. Didymo is rough to the touch, unlike other algae, which feel slimy. Because the stalk material lacks chlorophyll, blooms appear a pale yellowish brown to white color.

## Native & Introduced Ranges

Didymo is thought to be native to cool water regions of the Earth’s northern hemisphere, particularly the northern regions of Asia, Europe, and North America. While possible, it is currently unclear if Didymo is native to Pennsylvania. In recent years, Didymo has expanded its range to include British Columbia, Canada, New Zealand, and the southeast and western United States. This expansion reflects a change in Didymo’s tolerance of differing water chemistry conditions. In Pennsylvania, Didymo has been documented in at least 13 counties, with the earliest record dating back to 1916, where it was found in the Delaware River near Philadelphia.



USGS

## Biology & Spread

Spread most likely occurs through angling and other water recreational activities as Didymo can cling to fishing gear, waders, boots, and boats. Studies indicate that Didymo can survive outside of a stream in a cool, dark, damp environment for at least 40 days, and only one cell is needed for it to spread.

## Habitat

Didymo may occur in a system completely unnoticed until environmental conditions promoting nuisance mat formation occur. While nuisance blooms typically occur in cool, nutrient-poor rivers and streams during periods of stable streamflow, Didymo is exhibiting a much greater tolerance for water nutrient and flow conditions than expected.

## Impacts

### *Threat to Biodiversity*

While data on the ecological impacts of Didymo in the United States varies, cells can create large amounts of stalk material that form thick mats of gray, white, or brown cottony material on the bottom of rivers and streams. These mats may negatively impact fish and macroinvertebrate communities. While aesthetically unappealing, Didymo does not appear to be a threat to human health.

### *Economic Costs*

Didymo's expanding range has the potential to impact tourism and fishing experiences. Anecdotally, Didymo blooms have impeded angler success and enjoyment (particularly for fly fishing) in Pennsylvania. Didymo is also aesthetically unappealing, taking on the appearance of raw sewage.

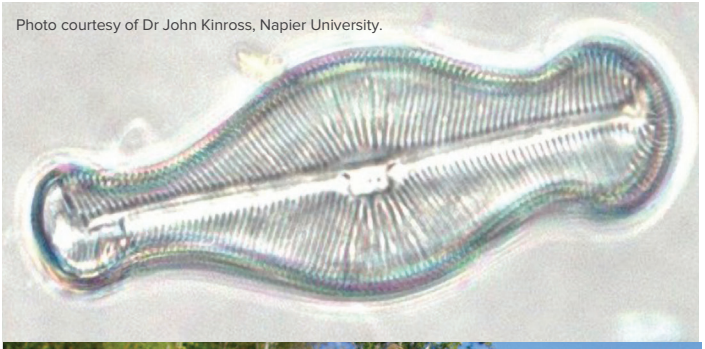


Photo courtesy of Dr John Kinross, Napier University.

Photo courtesy of Pennsylvania Fish & Boat Commission.

## Prevention & Control

Preventing the introduction and spread of the Didymo is the best way to protect natural habitats from harm.

- Know how to identify and report Didymo.
- Always check for and remove plants, mud, and debris from boats, trailers, clothing, and equipment before entering a water body and before leaving a water body.
- Remove any obvious clumps of algae, look for hidden clumps, and leave them at the affected site. If algae is found on gear or equipment after returning home, do not wash down drains; instead, dispose of all material in the trash.
- Soak and scrub all non-absorbent equipment for at least one minute in either hot water (140°F or 60°C), or a 2-percent solution of household bleach, a 5-percent solution of salt, antiseptic hand cleaner, or dishwashing detergent.
- Absorbent items, such as felt-soled waders, require longer soaking times to allow saturation; soak for at least 40 minutes in hot water above 140°F (60°C), or 30 minutes if the hot water is mixed with a 5-percent dishwashing detergent kept above 115°F (46° C).
- If cleaning is not practical, allow equipment to dry completely, then wait an additional 48 hours before allowing contact with other water bodies. Check thick, absorbent items closely to ensure they are dry throughout.
- Equipment and gear can also be placed in a freezer until all moisture is frozen solid.

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### *References:*

Aquatic Invasive Species (AIS) Control Plan: Didymo. 2022. Pennsylvania Fish and Boat Commission. Website.

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