



Stream Team Academy Fact Sheet Series

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Collect this entire educational series for future reference! Contact us at 1-800-781-1989 if you'd like copies of previous Fact Sheets and a binder for storing them.

INVASIVE SPECIES ALERT DIDYMO

An Educational Series For Stream Teams To Learn and Collect

By Mark Van Patten, Stream Team Coordination Biologist

Didymo (*Didymosphenia geminata*), commonly referred to as “rock snot,” is an invasive alga native to the northern parts of Europe and North America, which has demonstrated increased tolerance across a variety of habitats and has been spreading worldwide since the 1980s. The introduction of didymo can alter an entire stream ecosystem. Didymo grows to create extensive white, beige, or brown (not green) underwater carpets in moderately flowing freshwater streams that are clean and cool with stable flows. Although not in Missouri at the time of this writing, procedures are being put in place to minimize the risk of this invasive species being introduced to Missouri’s waterways.

Missouri’s spring-fed trout streams provide ideal conditions for didymo to flourish. Optimal conditions for didymo include:

- Constant velocities of moderate to high flow;
- Shallow water up to six feet deep;
- Plenty of sunshine;
- Cool water temperatures;
- Waters low in nutrients and high in levels of dissolved oxygen;
- pH levels near 7.

Only a single cell is needed to establish a colony. Newly-established didymo colonies are characterized by small, thick, brown bubbles on rocks. It can appear slimy, but actually feels like wet cotton or scratchy wool. The longer the colony persists, the longer the filaments become. These filaments detach and float downstream like a flotilla of tissue paper, thereby spreading the invasive organism.

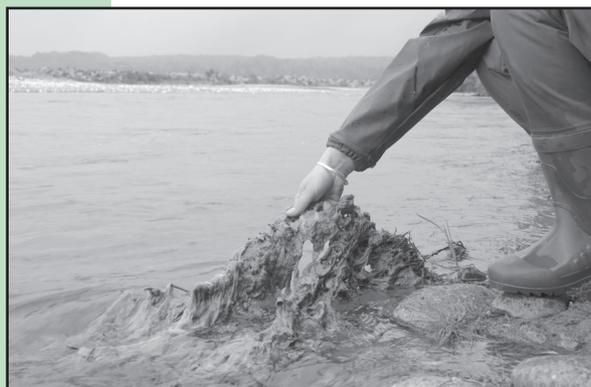
HOW DIDYMO SPREADS

Felt-soled waders and wading boots, worn by many trout anglers, appear to be a pathway for the spread of didymo. Felt soles are porous and hold moisture for days. A single cell of didymo can survive in the sole of the boot for as long as the sole is damp. Didymo can then be introduced unknowingly to the next stream the angler visits. In addition to angling equipment, canoes, kayaks, and other watercraft are also considered pathways for didymo to spread.

The Missouri Conservation Commission approved a regulation change banning the use of porous-soled waders or footwear incorporating or having attached a porous sole of felted, matted, or woven fibrous material when fishing in trout parks and other specific trout waters. The regulation went into effect March 1, 2012.

IMPACTS

Didymo can create extensive blooms by attaching its stalks to rocks or plants and covering the stream bottom. Didymo cells secrete a silica-based mucus-like substance to create a firm hold on substrates and help keep the alga moist. This substance causes the bottom of the



Didymo infestation in a New Zealand river.

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stream to be very slippery. Changes in the stream can be extensive and can include an increase in suspended organic material, fluctuating pH levels, and a change in macroinvertebrate population structures. Fish populations may suffer as the habitat for macroinvertebrates (especially the pollution sensitive taxa – caddisflies, stoneflies, and mayflies) is covered by the algal colonies, reducing preferred food supplies. The resulting loss of quality habitat can lead to a shift to pollution-tolerant macroinvertebrates like midges, leeches, etc.

Once didymo is established in an area, wading is hazardous due to slick, algae-covered rocks. The spread of didymo can also affect recreation by clogging water intakes of boat motors and interfering with fishing gear and lines. Excessive blooms of didymo can render fishing impossible, with devastating economic consequences.



Didymo smothers the bottom of a stream, making it difficult for fish to feed and making fishing an impossible activity.

CONTROL

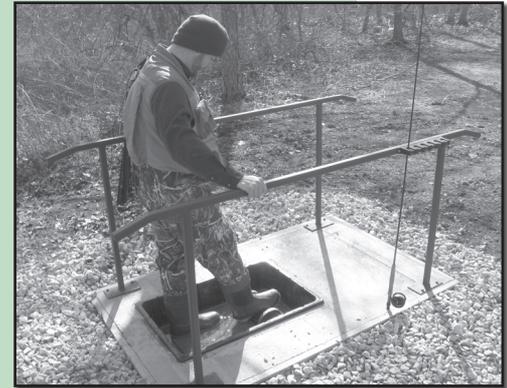
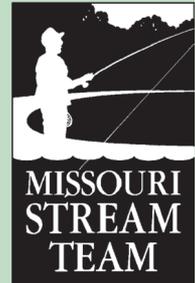
Currently there are no chemical or mechanical means for safely eradicating didymo once it is established. The following steps are recommended to help prevent the spread of didymo to Missouri streams.

- **CHECK** all gear and equipment after use and remove any visible algae. If you notice algae on your equipment at a later time, do not dispose of the algae by putting it down a drain. Dispose of it in the trash.
- **CLEAN** all equipment with a 2 percent household bleach solution, 5 percent saltwater solution, or dishwashing detergent. Allow all equipment to stay in contact with the solution for at least three minutes. Soak all soft items, such as felt-soled waders and life jackets, in the solution for at least 20 minutes.
- **DRY** all equipment in sunlight for at least 48 hours.

To help anglers clean their waders before entering Missouri trout streams, MDC has installed wader wash stations at Missouri's five cold-water trout hatcheries: Bennett Spring State Park near Lebanon, Montauk State Park near Salem, Roaring River State Park near Cassville, Meramec Spring Park near St. James and Shepherd of the Hills Hatchery by the upper portion of Lake Taneycomo near Branson.

MISSOURI DISTRIBUTION

Didymo is **NOT** currently found in Missouri. However, didymo is currently in the White River system in Arkansas, just south of Missouri's border.



The Missouri Department of Conservation has created boot wash stations with a 5% salt solution at Trout Parks throughout the state to help prevent the spread of didymo.

Please share!

It is important that Missourians work together to prevent the spread of didymo. Please share this information with others. Thank you.

Additional Resources:

www.epa.gov/region8/water/didymosphenia/
www.invasivespeciesinfo.gov/aquatics/didymo.shtml
www.fort.usgs.gov/news/news_story.asp?WebID=100528

Don't forget to send your questions to streamteam@mdc.mo.gov or call 1-800-781-1989.