



Invasive Species: Didymo a.k.a. “Rock Snot”

What Is Didymo? How Can I Identify It?

Didymo (*Didymosphenia geminata*) is a type of invasive algae that attaches to plants, rocks, and other hard substrates in rivers and streams. Also called “rock snot” due to its slimy appearance, Didymo can produce thick mats that cover stream beds—making swimming, fishing, and other water activities undesirable. People, including fishermen, are thought to be the main way that Didymo is being spread from one place to another. Recreational equipment, including clothing, can become contaminated and encourage the spread of Didymo if not cleaned properly before being used in another body of water.

Didymo is a native to North America that historically occurred in cool, low-nutrient waters. Since the mid-1980s, it has expanded its ecological niche to include a wide range of water temperatures and nutrient levels. In early stages, Didymo forms small bubbly colonies and a thick brown layer on rocks. As it grows, it can form thick dense finger-like clumps. In advanced stages, it forms long streaming filamentous carpets, several centimeters long. Streamers turn white at their ends, and fragments float downstream, appearing similar to clumps of tissue paper. Blooms can look similar to a sewage spill with wet toilet paper streaming down the river. Although it looks slimy, it feels like wet wool or cotton.



Early Stage



Then Forms Thick Clumps



Advanced Stage

Why is Park Staff Concerned about Didymo?

Didymo has been documented in several locations along the Tuolumne River, including locations in Yosemite National Park below the O’Shaughnessy Dam. Park managers are concerned that Didymo could become established in other park waters, potentially altering the natural ecosystem. No blooms have been documented in the park, but blooms have been documented in several streams located on the eastern boundary of the park.

Didymo has extraordinary capacity to impact river and stream ecosystems. It attaches to submerged substrate on streambeds by excreting a stalk that is resistant to degradation by bacteria and fungi. Under nuisance bloom conditions, it produces numerous extracellular stalks that attach to rocks and plants. Stalks form dense mats that trail downstream. As the stalks lengthen, the brown mats shred into the stream and can be washed white at the ends.

Extensive blooms have been known to cover several miles of waterways, making it nearly impossible to eradicate once it’s established. The mats, which can be over 8 inches thick, are capable of completely covering the substrate, engulfing the stream bottom, smothering native plants, insects, and mollusks causing extensive damage to the ecosystem. Didymo can also grow on grates and other components of water systems, blocking water flow.

STOP THE SPREAD!

What Can I Do to Help Prevent the Spread of Didymo?

Follow these guidelines to help prevent the spread. These activities are especially important if you have been in waters where Didymo or other invasive species are known to exist.

Before moving to a new location in a different body of water:

CHECK your clothing, shoes, waders, gear, and all items that have been in the water for mud and plant debris. **REMOVE** the material and leave on site. Empty all water from your gear.

At home **DISINFECT** your gear using one of these three methods:

1) **WASH** gear with hot water and ONE of the following:

- dish soap (1 cup detergent per gallon water)
- bleach (1/2 cup bleach per gallon water)
- table salt (1 cup salt per 1 1/4 gallons water)

SCRUB non-absorbent items thoroughly with one of the solutions. **SOAK** clothes, waders, and absorbent items in **HOT** soapy or salty water for 30 minutes, then rinse.

2) Or, **FREEZE** gear until frozen solid and completely dry.

3) Or, **DRY** completely for at least 48 hours.

DISPOSE of disinfection solution into a treated wastewater system. Soap solution should only be disposed of into wastewater system. Other disinfection solutions can be disposed of outdoors, but dispose at least 350 feet from water.

CAMPING or **WILDERNESS**: Follow the guidelines above for checking and removing debris from your clothing and gear, and **DRY** your items completely for at least 48 hours before entering a new waterbody, or carry “clean” gear for use in other waters.

AVOID FELT-SOLE WADERS: Use non-absorbent alternatives, including carbide stud replacement soles, detachable cleats, and sticky rubber.

Report It

If you think you have seen a Didymo bloom, please report it. Write a brief description of what you saw and where. If possible, take photos of the suspect bloom and the GPS coordinates. Drop off your report at a visitor center, or send the report to:

Rob Grasso (Aquatic Ecologist)
Rob_Grasso@nps.gov
209/379-1438

Learn More

Extensive blooms of Didymo can be viewed on a video created by the New Zealand Game and Fish at <http://www.biosecurity.govt.nz/video/didymo-fish-and-game>

Study invasive species—both plants and animals—in and near Yosemite at <http://www.nps.gov/yose/naturescience/invasive-species.htm>