

# Missouri Adopted a Proactive Approach by First:

- Surveying likely locations of Didymo and finding none
- Spreading the word of the potential impact a Didymo “bloom” would have on trout fisheries, environmentally and economically through Open House Forums
- Utilizing posters and other forms of information regarding the hazards of not cleaning fishing equipment
- Utilizing the news media and social networking media



**Help Stop  
DIDYMO**

Currently, Didymo exists in 19 states and occurs as close as northern Arkansas.

Before your next fishing trip—  
**Check and Clean or Dry**

**CHECK** Remove all visible clumps of algae and plant material from fishing gear, waders, water shoes and sandals, canoes and kayaks *and anything else* that has been in the water.

**and CLEAN** Clean your gear in a 2 percent household bleach solution (1/3 cup per gallon of water), 5 percent saltwater solution (1 cup per gallon of water) or dishwashing detergent. Scrub boats and other “hard” items thoroughly. **Completely soak** equipment, felt-sole waders, personal flotation devices and other “soft” material for at least **20 minutes**.

**or DRY** Allow any item that has been in contact with the water to **completely dry**; the item should be exposed to sunlight and left to dry for **at least 48 hours**.

**Do your part—don't spread Didymo!**



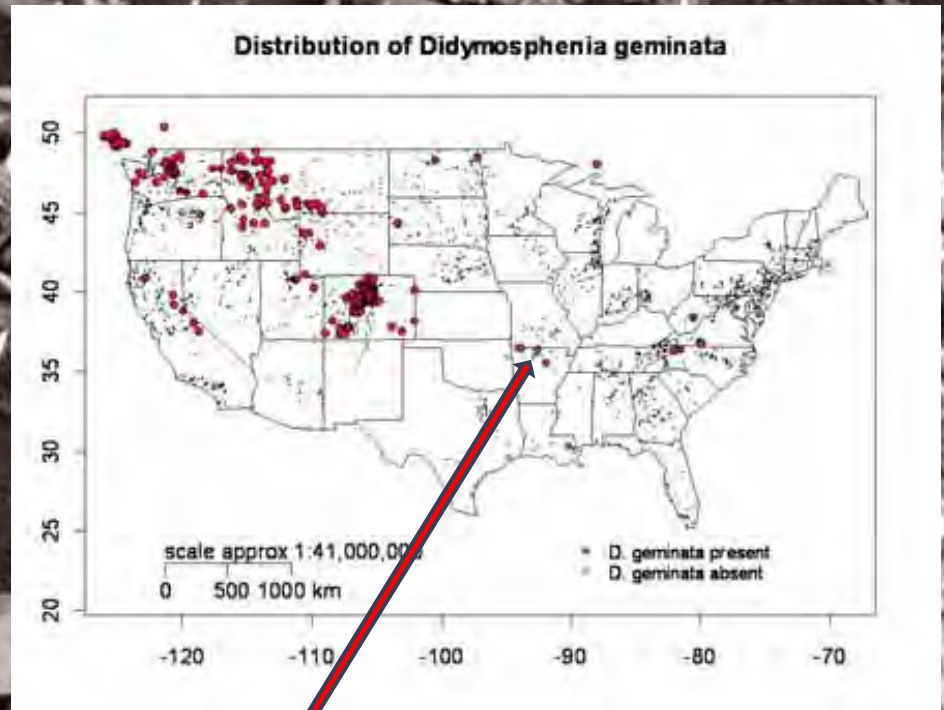
 For more information  
[mdc.mo.gov](http://mdc.mo.gov)



Serving nature and you

# Didymo Distribution

other diatom species,  
growing attached to stalk



*D. geminata* cells

*D. geminata* stalk



# Missouri Adopted a Proactive Approach by First:

- Establishing a timeline for communication
- Developing consistent Talking Points and Key Messages
- Identifying Topic Experts for the media and the public to contact
- Developing Communications Tactics
- Installing Wader Wash Stations at the Trout Parks

## Help Stop DIDYMO

### Wader Wash Station Instructions



Step 1

Place your rod in the rod holder and step into the salt solution as directed by the labeled entry point.

Step 2

During the required 3 minute period, use the boot brush to clean the soles and lower parts of your waders.

Step 3

Then use the hand brush to wash the upper portion of your waders with the salt solution before exiting.



**Didymo** (rock snot) is an invasive microscopic alga that grows in long stalks which are resistant to decay. It forms thick mats that have negative impacts on streams and can make fishing impossible. Didymo is expanding its range and tolerance throughout the world. Currently, Didymo exists in 19 states and occurs as close as northern Arkansas.

Preventing the spread of this invasive species is critical to the health of Missouri's streams. Didymo is believed to be spread primarily by human activities. Anglers can unknowingly spread this microscopic alga on fishing gear and waders, especially those with porous materials on their soles. Replacing felt-soled shoes, boots and waders with those that have rubber soles will help minimize the risk of spreading Didymo and other aquatic invasive species.

Please remember to **Check and Clean or Dry** your fishing gear and waders when moving between waters.



# Help Stop Didymo - Use the wader Wash Stations

**Before entering any Missouri trout stream:**

**Check** for any debris and remove it

**Clean** your gear in the saltwater solution. Scrub waders and boots thoroughly with the brush provided.

**Completely** soak equipment in the salt water solution for at least **3 minutes**.

**Or Dry** your equipment in the Sun for 48 hours





# Open House Forums



# Educational Tools Handed out to Anglers at Missouri's Four Trout Parks for the Opening Day of Trout Season

## Buttons



## Stickers



## 2-sided Pocket Fliers



# Didymo Fact Sheet for General Distribution

## Didymo

Invasive species

### Background, Life History

Didymo (*Didymosphenia geminata*), commonly referred to as "rock snot," is an alga native to the northern parts of Europe and North America. Didymo has adapted to a wide range of water quality conditions. Didymo has demonstrated increased tolerance across a variety of habitats and has been spreading since the 1980s. The introduction of didymo can alter the 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 being introduced to Missouri's waterways.

Missouri's 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, and waters low in nutrients and high in levels of dissolved oxygen with pH levels near 7.

Didymo is one of the largest freshwater diatoms. However, the individual cells cannot be seen with the naked eye. Only one 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 the primary 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. Didymo can then be introduced unknowingly to the next stream the angler visits. In addition to waders and angling equipment, canoes, kayaks and other watercraft are also considered pathways for didymo to spread.



Dr. David Rucinski

### Missouri Distribution

Didymo is not currently found in Missouri. However, didymo is already in the White River, just south of Missouri's border.



http://www.mdc.mo.gov



Use a wash station to prevent spreading didymo.



Didymo feels coarse, not slimy like algae.



Didymo infested streambeds can alter aquatic invertebrate communities.

### Impacts

Didymo can alter the entire stream ecosystem. Didymo can create extensive blooms by attaching its stalks to rocks or plants and covering the stream bottom. Didymo cells secrete a mucus-like substance to create a firm hold on substrates and help keep the alga moist. 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 (interstitial spaces between rocks) for macroinvertebrates (especially the pollution sensitive taxa – caddisfly, stonefly and mayfly) is covered by the algal colonies, reducing preferred food supplies. The resulting loss of quality habitat can also lead to a shift to pollution tolerant macroinvertebrates like midges, leeches, etc.

Once didymo is established in an area, wading is hazardous due to slippery, algae-covered rocks. The spread of didymo can also affect the fishing industry 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.

### Control

Currently there are no chemical or mechanical means for eradicating didymo once it is established. If you will be using your waders and other gear in another water body without

sufficient time to completely dry it, please take the following precautions to prevent transporting didymo to new waters.

- 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.
- Expose all equipment to sunlight and dry for at least 48 hours.
- Consider replacing felt-soled waders for a new, environmentally sensitive alternative.

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

### For Additional Information

[www.epa.gov/region8/water/didymosphenia/](http://www.epa.gov/region8/water/didymosphenia/)  
[www.invasivespeciesinfo.gov/aquatics/didymo.shtml](http://www.invasivespeciesinfo.gov/aquatics/didymo.shtml)  
[www.fort.usgs.gov/news/news\\_story.asp?WebID=100528](http://www.fort.usgs.gov/news/news_story.asp?WebID=100528)

[www.MissouriConservation.org](http://www.MissouriConservation.org)

For more information or to report a population, contact your local Missouri Department of Conservation office, e-mail [WildlifeDivision@mdc.mo.gov](mailto:WildlifeDivision@mdc.mo.gov), or write:

Didymo  
 Missouri Department of Conservation  
 Invasive Species Coordinator  
 P.O. Box 180  
 Jefferson City, MO 65102-0180



W00057 6/2011

# Effective March 1, 2012

## Attention Anglers!

The use of porous or felt soled waders, boots or shoes  
**IS PROHIBITED**

### 3 CSR 10-12.150 Fishing, Trout Parks.

PURPOSE: This amendment prohibits 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 the trout parks.

(1) On Maramec Spring Park, Bennett Spring State Park, Montauk State Park, and Roaring River State Park[]—(F) The use of shoes, boots, or waders with porous soles incorporating or having felt, matted, or woven fibrous materials is prohibited.

AND

### 3 CSR 10-6.415 Restricted Zones. section (6)

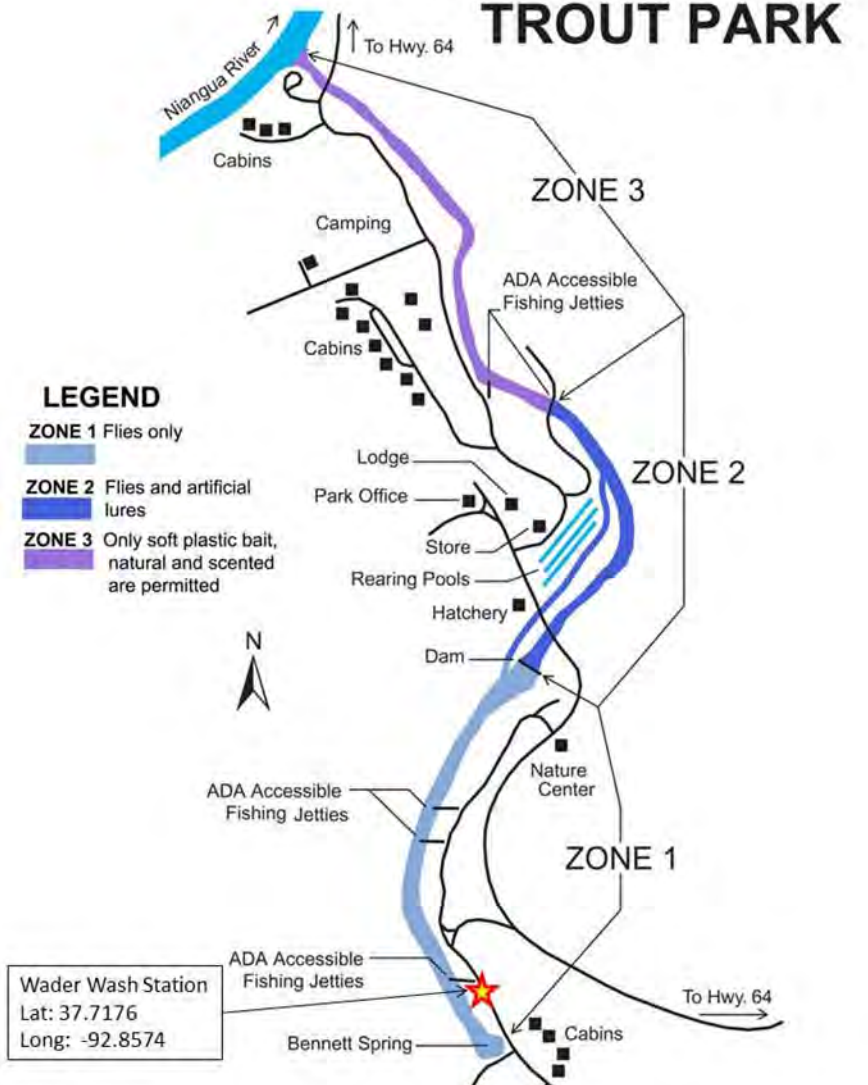
(6) The use of shoes, boots, or waders with porous soles incorporating or having felt, matted, or woven fibrous materials is prohibited on the following trout waters:

- |                                                       |                                                  |
|-------------------------------------------------------|--------------------------------------------------|
| A Barren Fork Creek in Shannon County;                | J Little Pinye Creek in Phelps County;           |
| B Blue Springs Creek in Crawford County;              | K Meramec River in Crawford and Phelps counties; |
| C Capps Creek in Barry and Newton counties;           | L Mill Creek in Phelps County;                   |
| D Crane Creek in Stone and Lawrence counties;         | M North Fork of White River in Ozark County;     |
| E Current River in Dent, Texas, and Shannon counties; | N Niangua River in Dallas and Laclede counties;  |
| F Dry Fork Creek in Crawford and Phelps counties;     | O Roaring River in Barry County;                 |
| G Eleven Point River in Oregon County;                | P Roubidoux Creek in Pulaski County;             |
| H Hickory Creek in Newton County;                     | Q Spring Creek in Phelps County; and             |
| I Lake Taneycomo in Taney County;                     | R Stone Mill Spring Branch in Pulaski County;    |



QR Code

## BENNETT SPRING TROUT PARK





Produced a video for treating felt soles to make them non porous



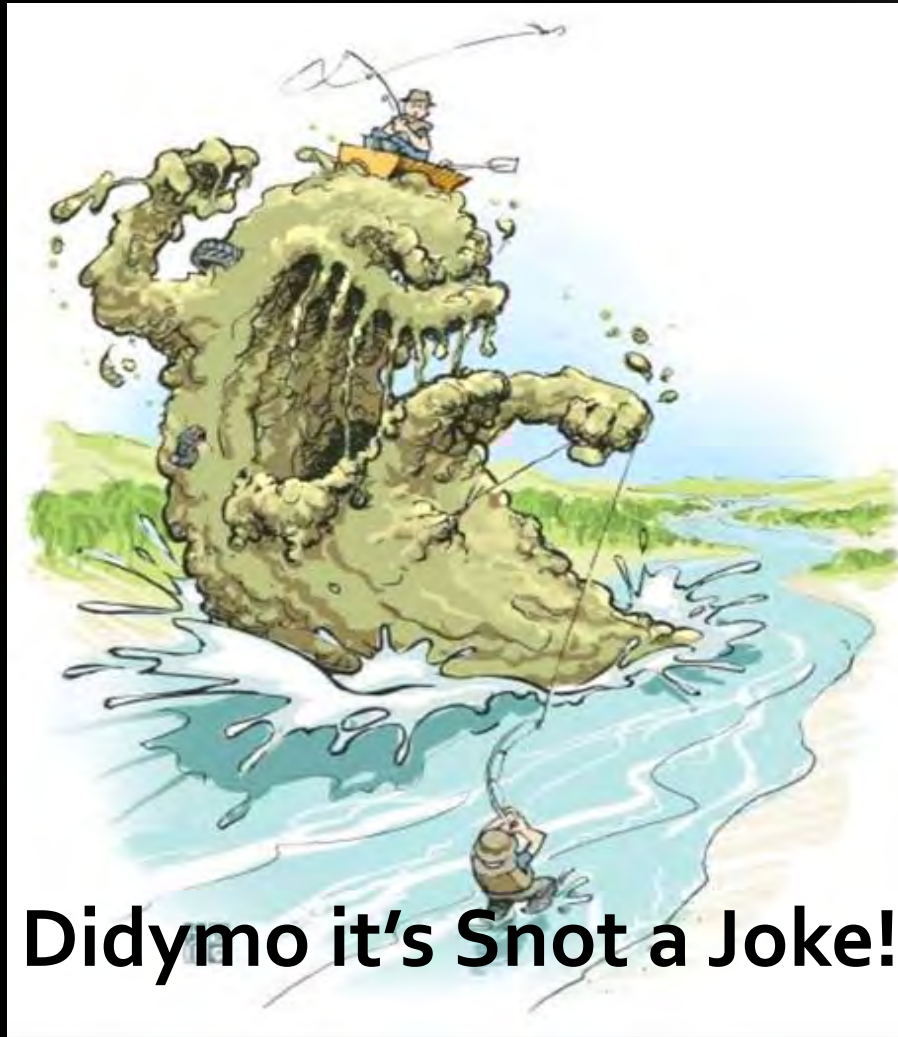
To allow anglers an adjustment period for compliance to the new regulation

# Didymo in the White River System in Arkansas.





# Questions?



**Didymo it's Snot a Joke!**