

# MBSS Decontamination Procedures for Boots and Equipment



Monitoring and Non-Tidal Assessment Division

Resource Assessment Service

Maryland Department of Natural Resources



# Why decontaminate?

- Helps prevent the introduction and spread of nuisance organisms and pathogens



Didymo



Chytrid fungus



Whirling disease



Box turtle with ranavirus by: Scott Farnsworth

Ranavirus



Largemouth bass virus



Avian influenza



Viral hemorrhagic septicemia

**Statewide ban  
on felt-soled  
waders went  
into effect  
March 21,  
2011, in  
Maryland.**



**Felt can retain  
and transfer  
organisms and  
pathogens at a  
higher rate than  
rubber.\***

\* Gates, K.K., C.S. Guy and A.V. Zale. 2008. Adherence of *Myxobolus cerebralis* myxospores to waders: Implications for disease dissemination. *North American Journal of Fisheries Management* 28: 1453-1458.

# Decontaminate all boots and equipment that have come into contact with stream water

## -Virkon Aquatic (2% solution)

- 2% solution = 2 scoops per gallon of water
- manufactured by DuPont
- virucide/herbicide
- designed for use in aquaculture facilities
- 10 lb. tub is ~\$87



## -10% Bleach solution (1 part bleach per 9 parts water)

- disinfect equipment at least 50 yards from water body

-Dry to touch, then dry for another 48+ hours





Clean water rinse after soak



Take boots off before applying cleaning agent

A sprayer filled with cleaning agent is an easy and effective way to disinfect between sites



- **Take boots off before applying cleaning agent**
- **Disinfect any area that came into contact with water from a stream, lake, etc.**

# Didymo

*Didymosphenia geminata*

- Discovered in the Gunpowder and Savage Rivers and spread to Hunting Creek and North Branch Potomac River
- Covers >75% of stream substrate when blooming
- Spreads rapidly
- Feels like wet wool (not slimy like most algae)



Microscopic image of didymo cells



Didymo in the Gunpowder River

# If you think you see Didymo...

- In a zip-top bag, place:
  - A sample from the center of the colony/mat with a small amount of stream water
  - A paper label with sample location & collection date in pencil
- Store on ice or in the refrigerator
- Call or email:

**Katherine Hanna**

**Maryland DNR**

**khanna@dnr.state.md.us**

**410-260-8609**

Sample must be received by DNR no more than 36 hours after collection

# PROTECT OUR WATERS

Help stop the spread of Didymo and other aquatic pests

**CHECK** Remove all obvious clumps from items that have been in the water.

**CLEAN** Soak and scrub all items for at least one minute with any of the following:

- hot (60°C) water
  - 2% solution of household bleach
  - 5% solution of salt
  - 5% solution of nappy cleaner
  - 5% solution of antiseptic hand cleaner
  - 5% solution of dishwashing detergent
- A 2% solution is 200ml, a 5% solution is 500ml (two large cups), with water to make 10 litres.

**DRY** If cleaning is not practical, dry items completely and then leave for at least 48 hours.

[www.biosecurity.govt.nz](http://www.biosecurity.govt.nz)

# PROTECT OUR WATERS



The invasive Didymo

# WADER WASH



The invasive alga known as "Didymo" or "Rock Snot" has infected some area rivers!

Didymo blankets stream bottoms and smothers aquatic life. Help prevent the spread of Didymo by taking the following simple steps each time you enter and leave the river. Keep this river safe!

**Take 60 seconds now to protect your river:**

1. Wash your waders in the salt water bath below.
2. Use the brush to wet the upper parts.
3. 60 seconds of exposure kills Didymo!

**Didymo is an alga that grows in a rock-snot-like gel.** It has been spreading rapidly in the Northeastern United States and Canada. It is a serious threat to the health of our rivers. It smothers aquatic life and can cause significant damage to the riparian ecosystem. It is a highly invasive species and can be difficult to control. It is a major concern for the protection of our water resources. It is a highly invasive species and can be difficult to control. It is a major concern for the protection of our water resources.



Use the brush to scrub the upper parts of your waders.



Wade in the stream for at least 60 seconds to kill any Didymo on your waders.

## STOP ROCK SNOT

After leaving this water:

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

**CLEAN** - Using HOT tap water and lots of soap: Scrub boats and other "hard" items thoroughly; Soak clothes, felt-sole waders and other "soft" items for **30 minutes!!!!**

Get more information:  
In Vermont, contact the VT DEC at 802-241-3777  
or visit [www.vt.gov/biosecurity](http://www.vt.gov/biosecurity)  
[www.dec.state.nh.us/web/sox/sox.cfm](http://www.dec.state.nh.us/web/sox/sox.cfm)

Please do your part - Don't Spread Didymo!



# YOUR BOAT MAY NOW BE CARRYING DIDYMO PLEASE CLEAN USING APPROVED METHODS



# PROTECT OUR WATERS

Help stop the spread of Didymo and other aquatic pests

**CHECK** Remove all obvious clumps from items that have been in the water.

**CLEAN** Soak and scrub all items for at least one minute with any of the following:

- hot (60°C) water
  - 2% solution of household bleach
  - 5% solution of salt
  - 5% solution of nappy cleaner
  - 5% solution of antiseptic hand cleaner
  - 5% solution of dishwashing detergent
- A 2% solution is 200ml, a 5% solution is 500ml (two large cups), with water added to make 10 litres.

**DRY** If cleaning is not practical, dry items completely and then leave for at least 48 hours.

[www.biosecurity.govt.nz](http://www.biosecurity.govt.nz)



BIOSECURITY NEW ZEALAND

# SAY NO TO DIDYMO!

CHECK CLEAN DRY



[www.biosecurity.govt.nz](http://www.biosecurity.govt.nz)

0800 80 99 66

NEW ZEALAND. IT'S OUR PLACE TO PROTECT.