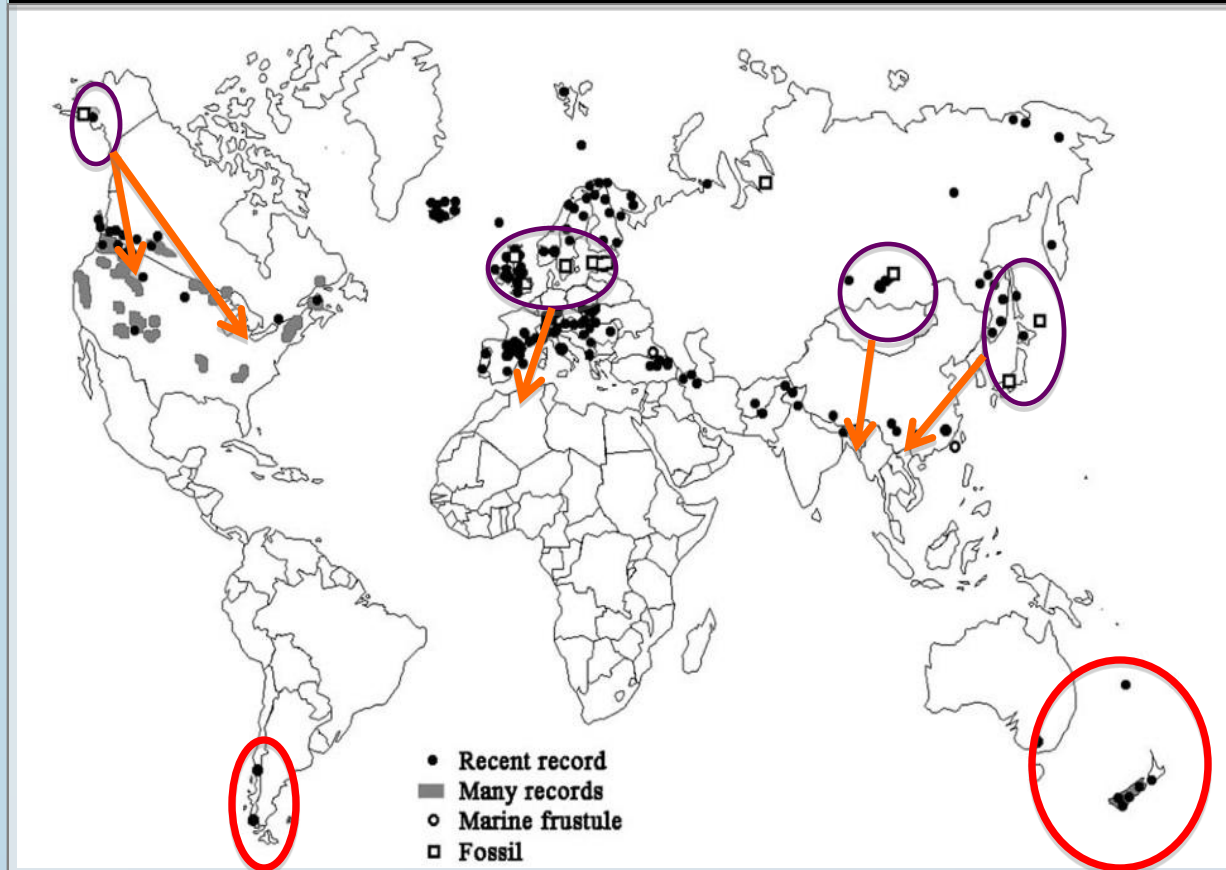


# Didymo on the Move:

## A Spatial Analysis of *Didymosphenia geminata* (didymo) in Catskills, New York

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### Didymo Around the World



**Figure 1:** The distribution of didymo in relation to historical records (Whitton et al. 2009). Note the fossil records of didymo in the far north, the high density of recent records radiating out, and the recent presents of didymo in the southern hemisphere.

- Invasive algae native to temperate regions of the northern hemisphere.

- Range has greatly expanded over the past few decades.

- 2009 confirmed in Esopus Creek, a major source of NYC's drinking water.

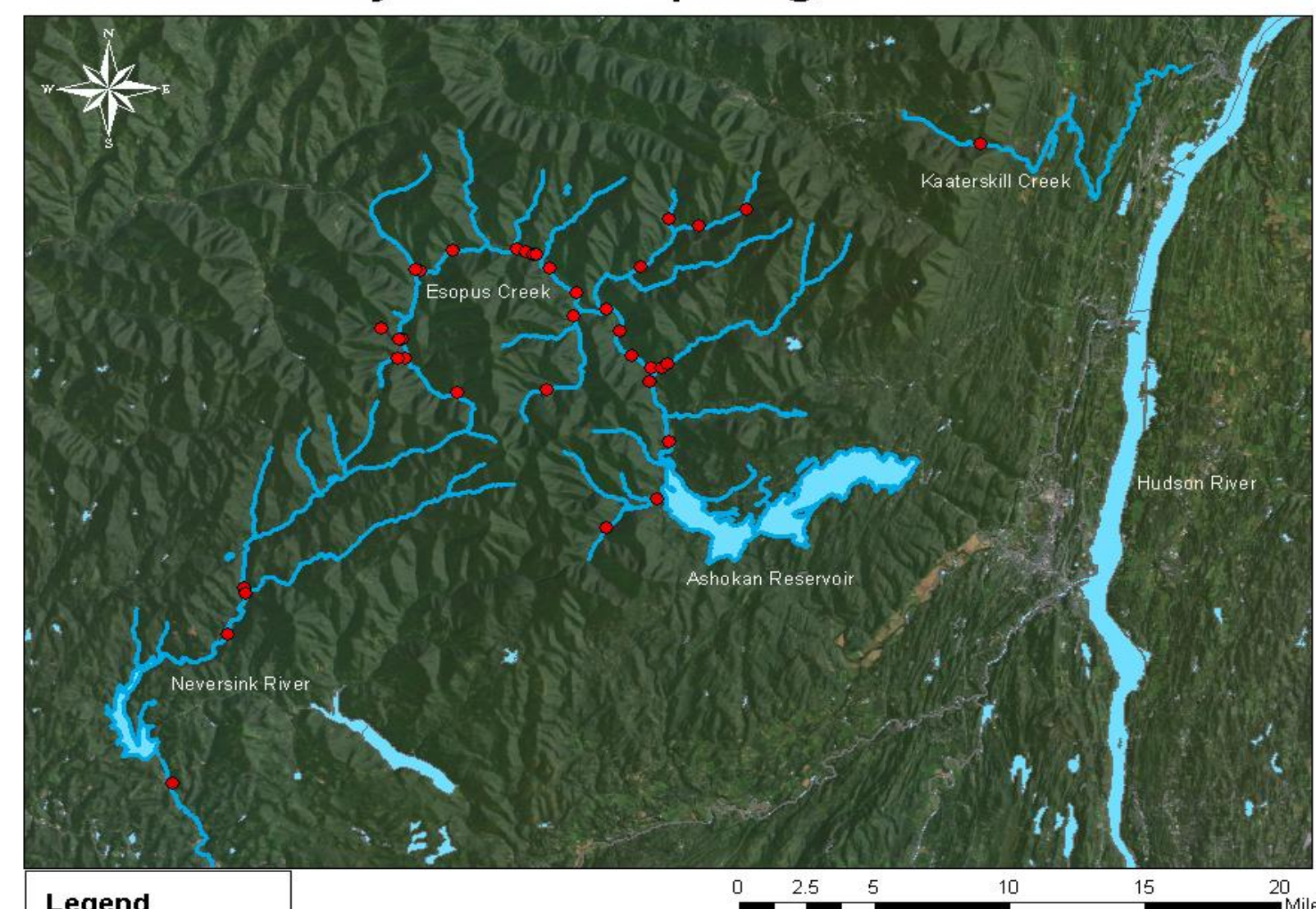
- Transported via recreational equipment, such as felt soled waders.

- 2011 widespread stream restoration due to Hurricane Irene.

- Machinery and sediment was transported throughout the region's waterways without regards to the spread of didymo.

### Methods: Rock Scraping

#### Didymo Sampling Sites 2012



**Figure 2:** Total sample sites of the summer of 2012 sampling. rock scrapings were taken at sites in the Esopus, Neversink, and Kaaterskill watershed, NY

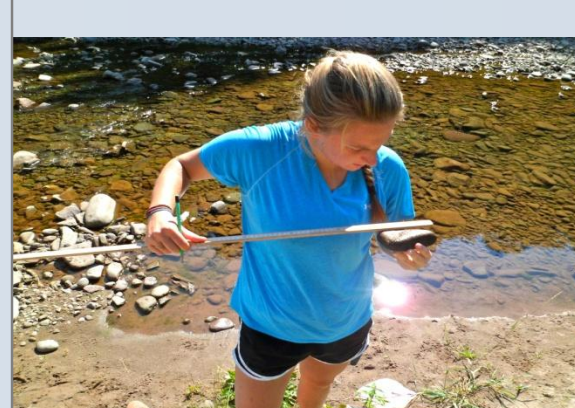


#### Rock Scraping

- At every site, each rock was scraped into a sample bottle.

#### Measurement of Rock Scraping

- Dimensions of the rock scraping were then measured to obtain a know area.



#### Sample Prep

- Each rock scraping was prepared by adding hydrogen peroxide to dissolve the extra-cellular stock material.

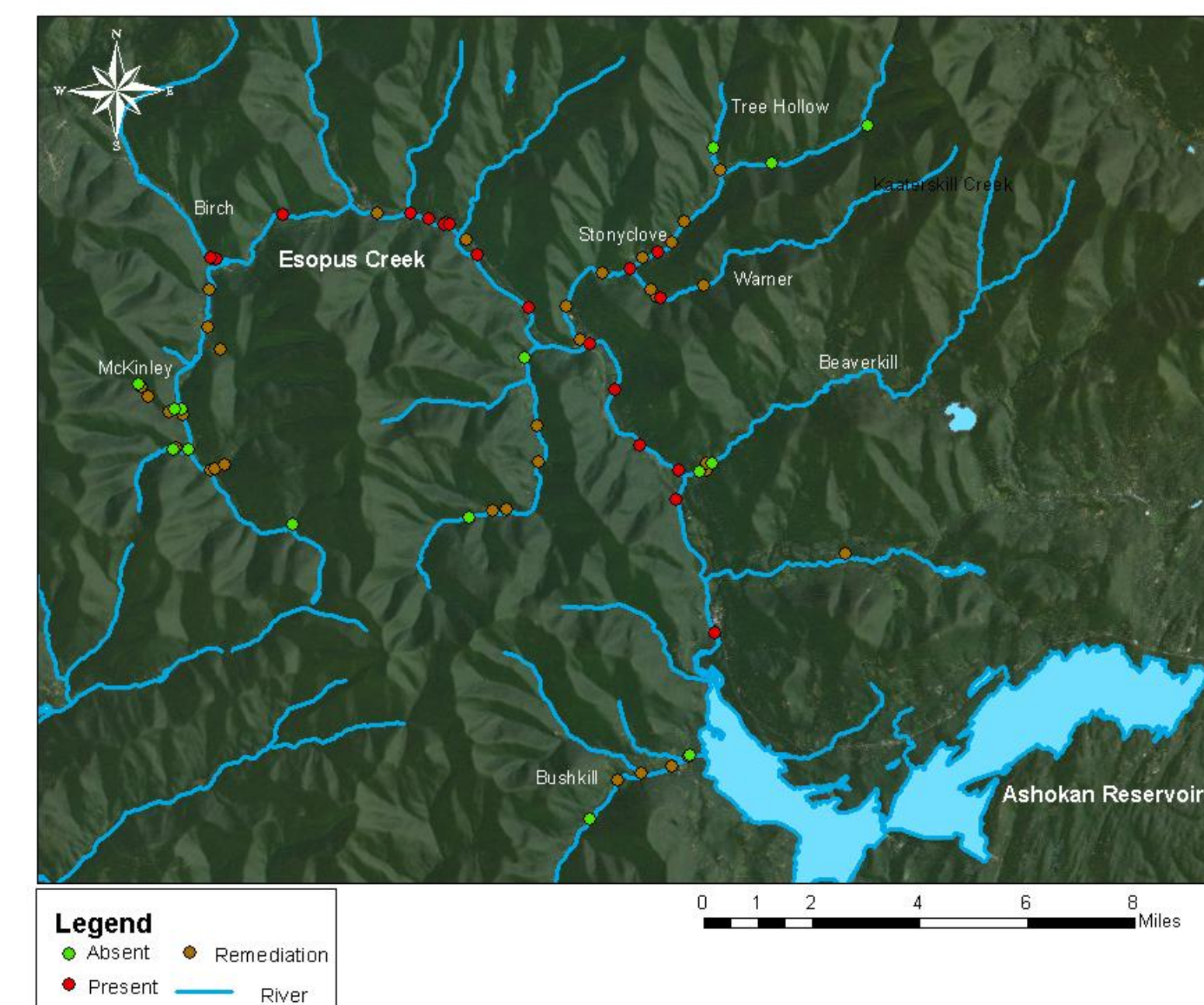
#### Cell Density Count



- Samples were then looked at under the microscope to determine cell densities.

### Results: Effects of Irene Remediations

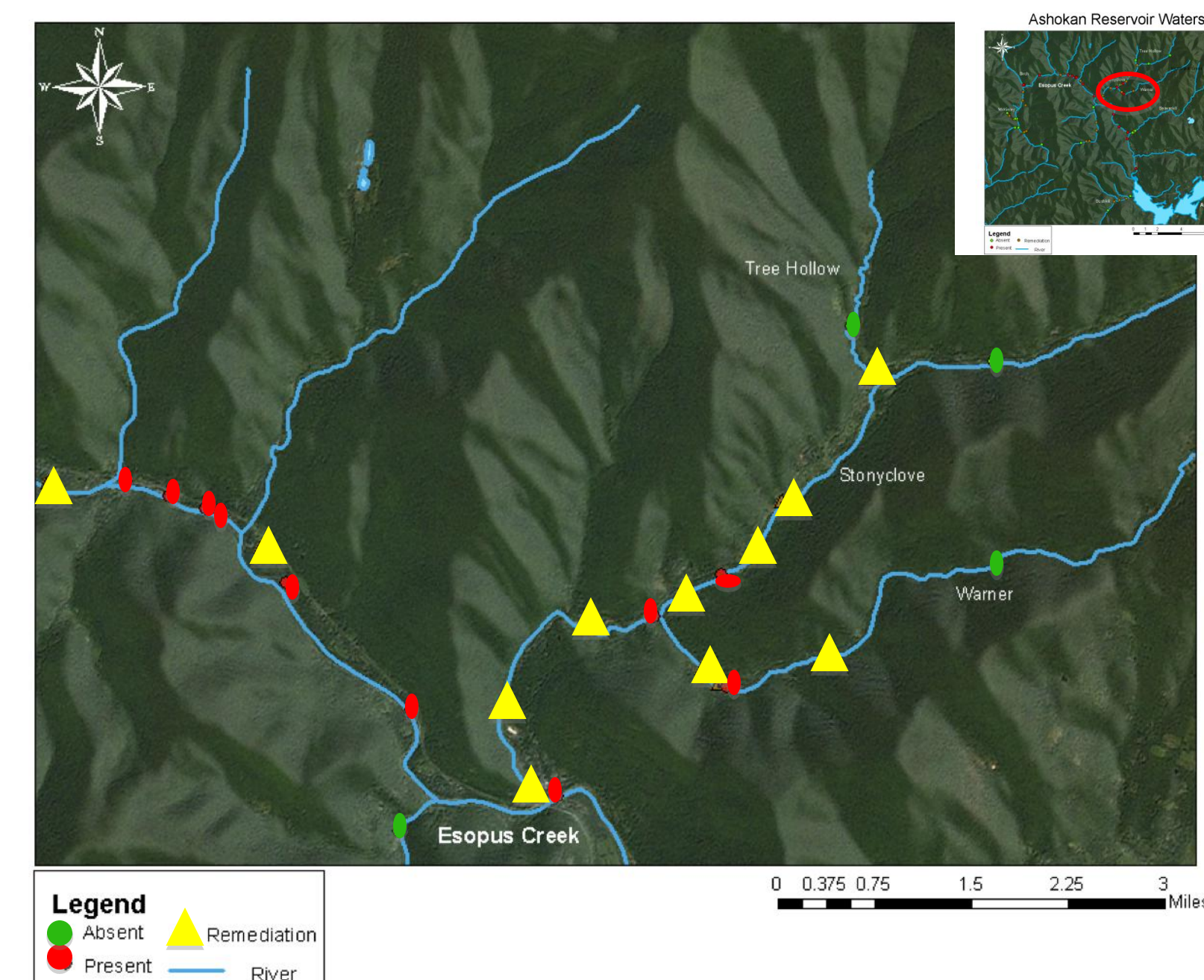
#### Ashokan Reservoir Watershed



**Figure 8:** Absence and presence of didymo above and below 2011 Irene remediations in the Ashokan Reservoir watershed. Sites marked by the red indicate the presents of didymo, while sites marked by green indicate the absents of didymo.

**Figure 9:** Absence and presence of didymo above and below 2011 Irene remediations along Stonyclove Creek and Warner Creek. Note the absence of didymo in sites above the remediations and the presence of didymo in sites below remediations.

#### Ashokan Reservoir Watershed



#### Didymo Free



#### Didymo Covered



**Figure 10:** The image on the left shows a stream without any didymo present, while the site on the right is covered with a thick mat of didymo.

- Didymo was found for the first time to exist in both Stonyclove Creek and Warner Creek.

- Sites above any remediations remained didymo free, while sites below the remediations were didymo infected (**Figure 9**).

- As **Figure 10** shows, the sites with dense didymo blooms visibly changing the stream bottom.

- Potentially altering both the stream system and function.

### Conclusion: The Spread of Didymo



- The movement of machinery and sediment due to stream remediations after Hurricane Irene in 2011 propagated the spread of didymo in the Esopus watersheds.

- Machinery that was used in didymo contaminated sites was transported, untreated, to locations upstream that were previously uncontaminated.

- As a result, the highly invasive didymo spread within the watershed.



### What Can We Do?

**KNOCK THE SNOT OUT OF DIDYMO**  
[www.cvtu.org/didymo](http://www.cvtu.org/didymo)

- Take action locally!
  - Thoroughly bleach boots and other recreational equipment before moving to another water site.
  - Post signs educating people about the perils of didymo.

- Model after already severely affected areas, such as New Zealand.
  - Install wash stations at every access point along the waterways.
  - Sterilize all construction machinery and equipment entering into the waterways.

### Literature Cited:

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