

Summary

Scientists study why an algae's blooms are choking waterways

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This picture captures "rock snot" algae in Thurston, Washington. Photo: [teresatrimm/Flickr](#)

BALTIMORE — Algae is a type of very simple plant, lacking roots, stems and leaves. Found in lakes and ponds, it provides nutrition for fish. When it becomes too abundant, however, algae can crowd out other plants. Eventually, it can cause fish to die off.

For years, there has been concern about one particular algae, known as didymo. To combat its spread on the East Coast, fishing boots with felt soles have been banned. Algae can stick to felt and be transported to other bodies of water. For the same reason, fishermen have been urged to scrub their gear.

A recent Dartmouth College study could turn such thinking on its head.

Didymo produces threadlike stalks called "rock snot" blooms, which can choke lakes and ponds. The algae has long been considered a threat. Many fear that it is spreading rapidly from one body of water to another.

However, the new Dartmouth study found that the algae is far from being a rapidly spreading newcomer. Indeed, it is mostly native to the areas where it has been seen.

Something Is Triggering The Harmful Blooms

The team of researchers found that cells of the algae had been present in rivers around the globe for centuries. In some cases, they had been present for thousands of years.

On the other hand, the team did find one significant change: In the past, the environmental conditions that trigger rock snot blooms were rare or absent.

"A lot of the response to didymo has been, 'How can we keep it from spreading?'" study leader Brad Taylor said. "Our work suggests that in a lot of areas," didymo has long been around. "In the areas just up the road in Pennsylvania and just south of Maryland and Virginia, didymo has been there at least 50 years. In some cases, in the case of Pennsylvania, it's been there thousands of years."

The extensive growth of rock snot blooms witnessed over the past several years wasn't caused by its spread from river to river, Taylor said. Instead, it was caused by conditions resulting from climate change (<https://www.newsela.com/?tag=global+warming>). Chief among these is a drop in levels of the mineral phosphorous. When we burn coal or gas it releases nitrogen. More nitrogen means less phosphorous in lakes or rivers. Didymo and other plants depend on phosphorous to grow.

"When phosphorous concentrations are extremely low, didymo produces this stalk to push itself up" in search of what it needs, Taylor said. "It's very similar to beanstalks; if you're going to grow a bean plant ... when you starve the plants of light, they grow tall and spindly."

A Name Like No Other

Rock snot gets its name for its mucus-like appearance. Its blooms harm salmon and trout populations by clogging ponds and lakes. In addition, the insects the fish feed on burrow into the stalks, making it harder for fish to get at them.

The research team is now trying to discover the source of the problem. They are trying to pinpoint what human activities cause the growth of rock snot blooms.

In the meantime, Taylor has a message for policymakers: Current multimillion-dollar efforts to stop the spread of snot blooms won't work.

In 2011, Maryland became the first state to outlaw felt-soled wading boots. Maryland also set up washing stations where fishermen can wash their gear.

"If it's already there, it's not going to do any good to try and stop the spread of it, obviously," Taylor said. "So the action might be better put into figuring out what's causing it to bloom."

Once that's understood, he said, we can move on to the next step. We will then need to figure out "ways to regulate that or ways to simply adapt to it and deal with it."

Poisoning the algae, Taylor thinks, "isn't going to be doable." Furthermore, "it's probably not going to solve the root problem."

Algae Could Be Just The Start

Didymo, Taylor said, could prove to be a valuable case study. It may provide a window into climate change's effects on native species.

The algae "may be really sensitive to the climate-induced changes and environmental conditions," he said. "So it may be a good canary in the coal mine, if you will." It may, in other words, be a good sign of "other changes that are going to happen in rivers."

Didymo, Taylor said, is "being affected by changing environmental conditions and is causing a nuisance." That kind of problem is "something I think we need to be more aware of in the future."

What's more, he added, it's a problem that may soon become "more common."

Quiz

- 1 Why is didymo considered a threat?
 - (A) It grows at a rapid rate.
 - (B) It can choke ponds and lakes.
 - (C) It spreads from one water body to another.
 - (D) It has been present for thousands of years.

- 2 All of the following are characteristics of didymo EXCEPT:
 - (A) It lacks roots and leaves.
 - (B) It requires phosphorous to grow.
 - (C) It requires nitrogen in abundance to bloom.
 - (D) It produces stalks in the absence of sunlight.

- 3 According to the article, how is didymo similar to a bean plant?
 - (A) both need nitrogen to grow
 - (B) both provide nutrition for fish
 - (C) both have a mucus-like appearance that can harm fish
 - (D) both grow stalks when they need to push themselves up for nutrients

- 4 Select the paragraph from "Something Is Triggering The Harmful Blooms" that describes how the relationship between nitrogen and phosphorous levels affects didymo's growth.