



Photo: Sandra Klemet - N'Guessan

Brown, green or silver in your tea affects your pee: A fish and mayfly tale

BROWN = DISSOLVED ORGANIC MATTER

'Brownification' is the process where the brown colour in streams or lake water increases due to strong absorption of short wavelength visible solar radiation. This is caused by dissolved organic matter like decaying plants and animals.

Dissolved Organic Matter (DOM)

Over the past 50 years, the water in lakes has turned increasingly brown. Lake browning is a result of increased concentrations of DOM from land and wetland inputs. It can affect drinking water and lead to reduced fish populations.

Diagram: Cary Institute of Ecosystem Studies



GREEN = NUTRIENTS

Animal excretion is an important source of nutrients in aquatic ecosystems. Excreted nutrients like nitrogen and phosphorus impact algal abundance, water clarity, and other ecosystem characteristics. The amount of nutrients in the environment will also indirectly affect the nutrients in their urine through their diet.

SILVER = NANOSILVER PARTICLES

Particles of silver between 1 and 100 nanometres in size are known as 'nanosilver'. Nanosilver is widely applied to industrial and consumer products because of its antibacterial properties. Chronic exposure to high concentrations of nanosilver can negatively impact freshwater ecosystems.

ADDITIONAL RESOURCES

- Learn why lakes are browning and what it means for lake health in [this article](#) from the Cary Institute of Ecosystem Studies
- Find out more about how [aquatic animals impact nutrients in freshwater systems](#)
- Read about Trent University's [Lake Ecosystem Nanosilver project](#) and watch the International Institute for Sustainable Development's [video](#) about the effects of microscopic silver particles aquatic ecosystems

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Handout created by:



Funding support:

Peterborough K.M Hunter Charitable Foundation

S.M. Blair Family Foundation