

Didymosphenia geminata or Didymo is a freshwater stalked diatom that is native to British Columbia (B.C.). Didymo attaches to stream substrates and can form large mats raising concerns in affected waterbodies. Mass growths have been reported in several countries including Canada, the U.S., and New Zealand. Although conspicuous growths of Didymo have been reported in many rivers, they have seldom caused major socio-economic problems. Furthermore, no freshwater diatom has been identified as a human toxin producer (Watson et al. 2015 in Wehr et al. 2015). Despite increased interest in recent years, a clear understanding of Didymo ecology and its purported invasive nature has not yet emerged (Watson et al. 2015). A thorough discussion on Didymo is provided in [Chapter 20 – Harmful Algal Blooms in Freshwater Algae of North America](#).

In the late 1980s, extensive Didymo blooms began to appear on Vancouver Island without an obvious change to environmental conditions to explain them. It was widely believed that a new bloom-forming variant of Didymo was introduced to B.C. and that the spread of this new variant was facilitated by anglers and their felt-soled waders. This belief was based on the introduction of felt-soled waders and the coincidental timing of increased angler use in Didymo affected rivers. Environment Canada and the New Zealand Institute for Water and Atmospheric Research collaborated on a series of mesocosm experiments in New Zealand between 2008 – 2010. These experiments found that the proximate cause of bloom formation is low soluble reactive phosphorus (SRP) concentrations which triggers excessive stalk production. Proposed mechanisms for the decline in phosphorus can be found in (Bothwell et al. 2014). Research to determine the lower threshold of SRP for Didymo bloom behaviour in different regions is ongoing.

References

- Bothwell, M.L., B.W. Taylor and C. Kilroy. 2014. [The Didymo story: the role of low dissolved phosphorus is the formation of *Didymosphenia geminata* blooms](#). Diatom Research, Vol. 29, No. 3, 229-236.
- Watson, S.B., B.A. Whitton, S.N. Higgins, H.W. Paerl, B.W. Brooks, and J.D. Wehr. 2015. Harmful Algal Blooms in Freshwater Algae of North America (Edited by J.D. Wehr, R.G. Sheath, and J.P. Kociolek 2015). Elsevier Inc. ISBN: 978-0-12-385876-4.