



## *A Backgrounder from*

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## **Didymosphenia geminata , a.k.a. “Didymo” or “rock snot”**

**General description:** Didymo is a single celled algae (a diatom), native to freshwater lakes and rivers in parts of North America. It mostly reproduces asexually by cell division, which means it can rapidly expand its population size. The species secretes a mucilaginous stalk which it uses to attach itself to the substrate. These stalks can intertwine, forming thick mats of Didymo on the stream bottom. These mats are slippery to walk on, hence the nick-name “rock snot”.

**The problem:** Didymo has recently become invasive, both as an exotic species, and within its natural range. It is not clear why this is occurring, but it may be linked to a recent, yet-to-be documented genetic mutation. In cases of severe invasions, 100% of the substrate of a stream can be coated with a Didymo mat to a depth of 2 cm or more. This coverage can destroy spawning habitat for salmonids, block access to refuges under rocks for juvenile salmonids, and stifle the production of freshwater insect larvae upon which juvenile salmonids depend. To date, New Zealand has suffered the most severe consequences of Didymo invasions, and agencies there are world leaders in knowledge of the species and its impacts.

**Control of Didymo’s spread, and eradication:** Control of the spread of the species will be very difficult. Measures can be implemented to stop humans from serving as vectors (e.g., disinfection of fishing gear as anglers move from watershed to watershed; closure of areas from any human access, etc.). However, a single cell could initiate an invasion in a new watershed, and it will be very easy for waterfowl to move the species throughout North America. No successful eradication of Didymo from any watershed has been accomplished, and ASF has no record of any ever having been attempted. Quebec government officials are presently developing an action plan.

**Impact on Atlantic salmon:** In 2006, the first major infestation of Didymo was reported from an Atlantic salmon river in North America. The species was first noted in the Matapedia River in mid-July, and by the end of the summer there was heavy Didymo coverage of the stream substrate over 35 km of the Matapedia River upstream of the confluence with the main stem of the Restigouche River. ASF dive teams retrieving sonic receiver units in the autumn did not detect Didymo mats in the Restigouche system upstream of the Matapedia River, although the species was present in the river borders at the highway bridge crossing the main stem slightly downstream of the Matapedia confluence. Electrofishing in the Matapedia River by biologists from the Quebec government did not detect a significant decrease in juvenile salmon numbers. This may mean that Atlantic salmon juvenile production will not be impacted by Didymo, or it could simply reflect the fact that the alga arrived so recently that it has not had time yet to exert its effect. However, the alga needs moderate to slow current with high light levels to prosper. This probably means the fast current, shaded areas of salmon rivers where much of the spawning occurs will not be affected by the algae. It is also not known if the Didymo blooms will be annual events once the species establishes itself in a river system. In Western Canada, where the species has been invasive, blooms have proved to be intermittent in some sites over time.

Prepared by F. Whoriskey, 2 November 2006