
ENVIRONMENTAL Fact Sheet



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The New Hampshire Instream Flow Program

Why does New Hampshire need stream flow protection?

The purpose of the Instream Flow Program is to ensure that rivers continue to flow in spite of the uses and stresses that people put on them. Under natural conditions, rivers flow freely with source waters coming from precipitation via lakes, ponds, wetlands, small streams and groundwater. River levels vary greatly through the seasons, and native plants and animals have adapted to low summer flows, as well as to the typical spring floods. But the rivers remain hydrologically connected to water storage areas such as wetlands so that some flow is maintained even during the hot, dry, summer months.

Under human influences, however, river dynamics can change drastically. People frequently withdraw large amounts of water for drinking and irrigation directly from rivers, as well as from the sources that supply the rivers, particularly lakes and groundwater. Land use changes can result in faster runoff and changes to the stream structure. Many rivers have dams that restrict the amount and timing of water flowing downstream. In addition, the loss of wetlands to land development reduces the amount of water that would normally augment rivers during dry periods. These changes in stream flow can impair river habitat.

What is the Instream Flow Program?

The New Hampshire Legislature created the Instream Flow Program in 1990, applying instream flow protections to the state's Designated Rivers. One program goal is to avoid situations like the one pictured here of the Exeter River in Exeter, New Hampshire during the drought of 2016. Two rivers, the Lamprey and Souhegan, were selected as the subjects of in-depth pilot studies to determine how best to protect flows so that both human and wildlife needs can be met.



Exeter River in Exeter, New Hampshire. 2016.

The Instream Flow Program develops two products. The New Hampshire Department of Environmental Services (NHDES) first calculates the flow conditions in a stream that will protect aquatic life. These flows vary by season because fish and other aquatic organisms require higher flows at some points of the year, such as during spawning season, but can survive lower flows at other times of the year. Second, management plans are drafted that describe how water users will operate to satisfy their water use needs while also maintaining protected flow conditions, and how dam

owners will manage their dams to maintain flow downstream. NHDES adopted the Lamprey River and Souhegan River Water Management Plans in August 2013 and continues to work with affected water users and dam owners to help them comply with the plans.

What do the Instream Flow Management Plans address?

1. **Conservation** – Registered water users are required to take steps to prevent water losses and waste, such as leak detection, metering and pressure management.
2. **Reducing the impacts of withdrawals** – When flow in the river remains low over the course of several days or weeks, water users are required to reduce water withdrawals affecting the river. For example, in Durham this means that the municipal water treatment plant occasionally withdraws water from other sources and stops withdrawing from the Lamprey River altogether. In addition, municipal governments may issue limits on lawn watering and other discretionary water use within the municipality.
3. **Prescribing a relief pulse of water** – During extended low flow periods that reach critical levels, a two-day relief pulse of water may be released from one or more dams. This pulse of water mimics the amount of water that the river would see during a typical small rainstorm and reduces the stressful conditions experienced by aquatic life during low flows. For example, in the Lamprey River a two-day relief pulse of water can be released from Pawtuckaway Lake and Mendums Pond when low flow in the Lamprey River persists. This pulse will lower lake levels a small amount, but will have a large positive impact on river ecology.

Key Concepts

- The goal of the Instream Flow Program is to balance human and wildlife needs in rivers and lakes.
- Protected instream flows implement Surface Water Quality requirements for flow.
- The Instream Flow Program applies to Designated Rivers and to larger water users and dams in their upstream tributary areas.

What is next for the Instream Flow Program?

Based on two years of implementation of the Lamprey River and Souhegan River Water Management Plans, NHDES produced the 2015 Report of the Instream Flow Pilot Program¹ making recommendations on how to apply instream flow protections to all of New Hampshire's Designated Rivers. These recommendations resulted in legislation in 2016 and triggered rule revisions currently in development.

The next steps include:

1. Adopt revised Instream Flow rules (Env-Wq 1900).
2. Continue implementation of water management plans for the Lamprey and Souhegan rivers.
3. Determine the next rivers for implementation of instream flow protection. Factors that will be used include the river's location upstream or downstream of other Designated Rivers, availability of stream flow data, and local interest and support for the program.
4. Define target fish communities, those fish that should be present in each river, for the Designated Rivers.
5. Begin protected instream flow studies and water management plans on priority rivers.

Is the Instream Flow Program successful?

Determining the success of the program will take many years of studying the health of the fish, wildlife and riparian plant communities on the rivers where the Instream Flow Program has been implemented. However, during the 2016 drought, water users and dam owners on the Lamprey and Souhegan rivers successfully implemented their water management plans resulting in continued flows on both of these rivers.

For More Information

To learn more about the Instream Flow Protection Program, please see <http://des.nh.gov/organization/divisions/water/wmb/rivers/instream/>, or contact Wayne Ives at (603) 271-3548 or Wayne.Ives@des.nh.gov.

¹ <https://www.des.nh.gov/organization/divisions/water/wmb/rivers/instream/report.htm>