

Instream Flow Management: Implications for Lakes

The Instream Flow Program determines the seasonal flows necessary to support both natural habitats and human uses on New Hampshire's 19 designated rivers. Applying the Instream Flow Program for each river has two phases: 1) studying how much water should be in the river, and 2) developing a *Water Management Plan* that describes how those water levels will be achieved. The first phase is a science-based process focused solely on the river and its needs. The second phase includes assessing the needs of major water users and upstream lakes. There are opportunities for public input during both phases.

Why is NHDES managing flows on the river? Dams, water withdrawals and development can all alter natural flows. The Instream Flow Program manages designated rivers for more natural flow patterns. Those flows in turn support plants, wildlife and people's many uses of the river.

What are Protected Instream Flows? Protected Instream Flows are state water quality standards that describe the amount of water that should be in a specific river at any given time in order to support the needs of aquatic and riparian life and of people and businesses who use the river. Protected Instream Flow levels vary throughout the year, following the natural water cycle such as high flows in spring and low flows in late summer.

Lakes and Instream Flow

The relationship between river flow management and each lake in the watershed is described in the *Water Management Plan*. The public can provide feedback on draft Water Management Plans by submitting comments during public hearing or public comment periods, or by reaching out to staff at any point.

How will river flow management affect lakes? When water levels in the river are low enough to threaten aquatic life (i.e., below the protected instream flow levels) and conservation measures have been insufficient to restore flow, water may be released from upstream lakes. Each lake will be assessed for whether it can provide water to the river without significant negative impacts to the lake. If it can, water will be released from the lake's dam when conditions are met as described in the *Water Management Plan*.

Will you definitely be releasing water from every upstream lake to the river? No, not necessarily. As part of preparing the *Water Management Plan*, NHDES will evaluate:

- 1) **The physical infrastructure of the dam:** Is it physically possible to release a specific, small quantity of water for a set period of time? For example, if there is no dam, or if the dam is solid concrete with no water control structure, the lake is unlikely to be used to help manage the river.
- 2) **The ability of water released from the lake to increase flows in the river:** The lake's distance from the river and the hydrological, geological and biological characteristics of the land between the lake and the river all affect the rate at which water released from the lake reaches the river. If releasing water from the lake would not significantly increase flows in the river, then the lake is unlikely to be used to help manage the river.
- 3) **The potential impacts of a release on the lake and its users:** NHDES will consider the impacts to lakefront properties, recreational interests and lake ecology. For example, a minimum lake level may be determined below which a release will not be conducted due to negative impacts to fish or dock access. NHDES is committed to management that supports common uses of the lake in addition to the needs of the river.

If these criteria support it, the *Water Management Plan* will describe how the lake may be used to provide water when flow in the river falls below Protected Instream Flow values. *Water releases are designed to provide water when river levels are below low flow levels for more than a certain amount of time.* This means that, by definition, water releases from upstream lakes will happen infrequently.

How much water will be released from the lake into the river? If a lake meets the criteria above, the exact amount released from the lake will depend on the characteristics of the lake, the current lake level, and river management goals. The *Water Management Plan* will include specific numeric criteria that describe when water will be released, the rate at which water will be released, and for how long. Releases do not happen arbitrarily; rather, they are a result of certain low flow conditions being met for certain lengths of time. These conditions are specific to each river. Releases are much smaller than the fall drawdowns that occur on many lakes.

What protects the lake? When developing the *Water Management Plan*, NHDES evaluates how releasing water from a lake will affect lakefront properties, recreational interests and lake ecology. Releases must meet Protected Instream Flows *and* support the primary uses of the lake. NHDES informs the lake association and municipality about each step in developing the Protected Instream Flows and the *Water Management Plan*. Members of the public are encouraged to submit comments or reach out to staff with questions or concerns.

What if our lake is shallow? When writing the *Water Management Plan*, NHDES models how water releases will affect wetlands, sensitive shoreline areas and shallows. Results inform the decision about how much water can be released from the lake. If wetlands and sensitive shoreline areas are protected, so are other shallow areas such as those that pose navigational hazards. We welcome information from you about specific locations on the lake that you are concerned about.

Why can't you take water from someplace else? We do. Before water is released from any lake, NHDES requires any person or company withdrawing more than 20,000 gallons of water a day to implement water conservation measures, and then to reduce or temporarily eliminate their use of river water. These water conservation and water use measures are described in the *Water Management Plan*. Releasing water from a lake is the last resort.

Additional Considerations when implementing the Water Management Plan: Water releases are kept small enough to protect the lake's sensitive habitats. If the lake is already at a critically low level such that further lowering would dramatically impact the lake, NHDES can choose to retain the water in the lake.

What about the loons? Loons are sensitive to water level fluctuations while nesting. If there are loons nesting on the lake when a release is planned, NHDES will follow the recommendations of the Loon Preservation Committee to avoid affecting nests.

What about cyanobacteria blooms and aquatic weeds? NHDES does not anticipate water releases causing a large enough change in water levels in the lake to change the likelihood of cyanobacteria blooms or increase weed growth in a lake. Water releases will not affect or may even reduce the risk of cyanobacteria blooms downstream in the river by increasing flow in stagnant areas of the river.

For more information:

Check out the [Instream Flow Program page](#) of the NHDES website. For more information about the Instream Flow process, contact Wayne Ives, Instream Flow Program Coordinator, at [\(603\) 271-3548](tel:603-271-3548) or Wayne.Ives@des.nh.gov. If you have lake-related concerns that have not been addressed, you can contact Nisa Marks, Watershed Coordinator, at [\(603\) 271-8811](tel:603-271-8811) or nisa.m.marks@des.nh.gov.



New Hampshire Instream Flow Program: Lake Stakeholder Input

Phase 1: How much water should be in the river?

(Focus: Rivers)

NHDES Actions:

- Conduct river-based field work to gather data about the river. This may take several years, as data is needed from a range of weather conditions.
- Publish draft study results. Notice is sent to river stakeholders, dam owners, lake associations and anyone who has requested notification.
- Hold a public information session to explain the results and answer questions about river flows.
- Hold a public hearing to receive comments.
- Publish final study results, including response to comments.

Involvement Options for Lake Stakeholders:

- Submit an email request to instreamflow@des.nh.gov to be notified about information sessions, hearings, informational notices, and draft and final plans.
- Review information provided by NHDES.
- Attend information sessions and hearings. Ask questions, raise concerns and provide testimony. Contact NHDES directly at any point in the process with questions.
- Provide formal comments during the public hearing (verbal) or public comment period (written).

Phase 2: How will those water levels be achieved

(Focus: Lakes and Water Users)

NHDES Actions:

- Evaluate dams for their suitability for water releases to the river.
- Evaluate potential release impacts on sensitive areas of the lake and shoreline.
- Coordinate with lake associations to schedule a test release of water.
- Share results of the water release test with the lake association.
- Publish the *Draft Water Management Plan* specifying how targeted river flow levels will be achieved. The document explains whether each lake will be used to augment river flows, and if so, how and when that will be done.
- Hold a public information session and public hearing.
- Publish the final plan, including response to public comments.

Involvement Options for Lake Stakeholders:

- Inform NHDES about sensitive areas in lake.
- Share the information provided by NHDES with lake association members and other lake users.
- Submit an email request to instreamflow@des.nh.gov to be notified about information sessions, hearings, and the release of information and draft and final plans.
- Review information provided by NHDES.
- Attend public information meetings and ask questions.
- Provide formal verbal comments during the public hearing and/or submit formal written comments.

Phase 3: Implementation

NHDES Actions:

- Implement steps specified in the management plan implemented and evaluate results.
- Notify stakeholders before each water release.
- Conduct monitoring to evaluate results.
- Work with stakeholders to revise the plan if needed.

Involvement Options for Lake Stakeholders

- Stay informed via email updates and information posted on the NHDES website.
- Reach out to NHDES staff with questions or concerns at any time.
- To be notified of releases, submit an email request to instreamflow@des.nh.gov.