



ICE BRIDGES AND SNOW FILLS

Fisheries and Oceans Canada
Nunavut Operational Statement

Version 3.0

Ice bridges and snow fills are two methods used for temporary winter access in remote areas. Ice bridges are constructed on larger watercourses that have sufficient stream flow and water depth to prevent the ice bridge from coming into contact with the stream bed or restricting water movement beneath the ice. Snow fills, however, are temporary stream crossings constructed by filling a stream channel with clean compacted snow.

Ice bridge and snow fill crossings provide cost-effective access to remote areas when lakes, rivers and streams are frozen. Since the ground is frozen, ice bridges and snow fills can be built with minimal disturbance to the bed and banks of the watercourse. However, these crossings can still have negative effects on fish and fish habitat. Clearing shoreline and bank vegetation increases the potential for erosion and instability of the banks and can lead to deposition of sediments into fish habitat. There is also potential for blockage of fish passage during spring break-up.

Fisheries and Oceans Canada (DFO) is responsible for protecting fish and fish habitat across Canada. Under the *Fisheries Act* no one may carry out a work or undertaking that will cause the harmful alteration, disruption or destruction (HADD) of fish habitat unless it has been authorized by DFO. By following the conditions and measures set out below you will be in compliance with the subsection 35(1) of the *Fisheries Act*.

The purpose of this Operational Statement is to describe the conditions under which it is applicable to your project and the measures to incorporate into your project in order to avoid negative impacts to fish habitat. You may proceed with your ice bridge or snow fill project without a DFO review when you meet the following conditions:

- ice bridges are constructed of clean (ambient) water, ice and snow,
- snow fills are constructed of clean snow, which will not restrict water flow at any time,
- the work does not include realigning the watercourse, dredging, placing fill, or grading or excavating the bed or bank of the watercourse,
- materials such as gravel, rock and loose woody material are NOT used,
- where logs are required for use in stabilizing shoreline approaches, they are clean and securely bound together, and they are removed either before or immediately following the spring freshet,
- the withdrawal of any water will not exceed 10% of the instantaneous flow, in order to maintain existing fish habitat,

- water flow is maintained under the ice, where this naturally occurs,
- this Operational Statement is posted at the work site and is readily available for reference by workers, and
- you incorporate the *Measures to Protect Fish and Fish Habitat when Constructing an Ice Bridge or Snow Fill* listed below in this Operational Statement.

If you cannot meet all of the conditions listed above and cannot incorporate all of the measures listed below then your project may result in the violation of subsection 35(1) of the *Fisheries Act* and you could be subject to enforcement action. In this case, you should contact the Nunavut DFO office, at the address shown below, if you wish to obtain DFO's opinion on the possible options you should consider to avoid contravention of the *Fisheries Act*.

You are required to respect all local, territorial or federal legislation that applies to the work being carried out in relation to this Operational Statement. The activities undertaken in this Operational Statement must also comply with the *Species at Risk Act* (www.sararegistry.gc.ca). If you have questions regarding this Operational Statement, please contact the Nunavut DFO office.

We ask that you notify DFO, preferably 10 working days before starting your work by filling out and sending the Nunavut Operational Statement notification form (www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/prov-terr/index_e.htm) to the Nunavut DFO office. This information is requested in order to evaluate the effectiveness of the work carried out in relation to this Operational Statement.

Measures to Protect Fish and Fish Habitat when Constructing an Ice Bridge or Snow Fill

1. Use existing trails, winter roads or cut lines wherever possible as access routes to limit unnecessary clearing of additional vegetation and prevent soil compaction.
2. Construct approaches and crossings perpendicular to the watercourse wherever possible.
3. Construct ice bridge and snow fill approaches using clean, compacted snow and ice to a sufficient depth to protect the banks of the lake, river or stream. Clean logs may be used where necessary to stabilize approaches.

4. Where logs are used to stabilize the approaches of an ice bridge or snow fill:
 - 4.1. The logs are clean and securely bound together so they can be easily removed.
 - 4.2. No logs or woody debris are to be left within the water body or on the banks or shoreline where they can wash back into the water body.
5. While this Operational Statement does not cover the clearing of riparian vegetation, the removal of select plants may be necessary to accommodate the road. This removal should be kept to a minimum and within the road right-of-way.
6. Install sediment and erosion control measures before starting work to prevent the entry of sediment into the watercourse. Inspect them regularly during the course of construction and decommissioning activities and make all necessary repairs if any damage occurs.
7. Operate machinery on land or on ice and in a manner that minimizes disturbance to the banks of the lake, river or stream.
 - 7.1. Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
 - 7.2. Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent any deleterious substance from entering the water or spreading onto the ice surface.
 - 7.3. Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
 - 7.4. Restore banks to original condition if any disturbance occurs.
8. If water is being pumped from a lake or river to build up the bridge, the intakes are sized and adequately screened to prevent debris blockage and fish mortality (refer to DFO's *Freshwater Intake End-of-Pipe Fish Screen Guideline* (1995) available at www.dfo-mpo.gc.ca/Library/223669.pdf).
9. Crossings do not impede water flow at any time of the year.
10. When the crossing season is over and where it is safe to do so, create a v-notch in the centre of the ice bridge to allow it to melt from the centre and also to prevent blocking fish passage, channel erosion and flooding. Compacted snow should be removed from snow fills prior to the spring freshet.
11. Stabilize any waste materials removed from the work site to prevent them from entering the lake, river, or stream. This could include covering spoil piles with biodegradable mats or tarps or planting them with grass or shrubs.
12. Vegetate and stabilize (e.g., cover exposed areas with erosion control blankets or tarps to keep the soil in place and prevent erosion) any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses.

Cover such areas with mulch to prevent erosion and to help seeds germinate. If re-vegetation is not possible due to climatic extremes and/or lack of appropriate seed or stock, the site should be stabilized using effective sediment and erosion control measures. In areas with permafrost, care should be exercised to ensure these measures do not cause thawing or frost heave.

- 12.1. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved or until such areas have been permanently stabilized by other effective sediment and erosion control measures, in the event that re-vegetation is not possible.

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http://www.dfo-mpo.gc.ca/oceans-habitat/habitat/modernizing-moderniser/epmp-pmpe/index_f.asp