



Fisheries and Oceans
Canada

Eastern Arctic Area
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Pêches et Océans
Canada

Secteur de l'Arctique de l'est
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July 27, 2007

Our file *Notre référence*
NU-06-0042

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut X0B 1J0

Via electronic mail to:
licensing@nunavutwaterboard.org

Dear Ms. Beaulieu:

Subject: High Lake Re-Licensing Program

Fisheries and Oceans Canada (DFO) received your submission requesting a review of the High Lake Re-licensing program. To expedite future correspondence or inquiries, please refer to the referral title and file numbers when you contact us.

Habitat File No.: **NU-06-0042**
Referral Title: **High Lake Re-licensing Program, Kitikmeot Region**

It is our understanding that the proposal consists of the following:

- *Mobilization from Ulu to the High Lake and Sand Lake sites;*
- *Development of a 12km all-season access road, including three watercourse crossings;*
- *Construction of a 1450m gravel airstrip near Sand Lake;*
- *Construction of a 30-person temporary construction camp (Sand Lake Camp);*
- *Construction of a 70-person seasonal camp near High Lake (Weatherhaven camp); and,*
- *Surface compaction and dust suppression for road/airstrip construction and maintenance activities.*

As outlined in the following plans:

- *Project Description Re-licensing Program High Lake Project, prepared by Wolfden Resources Inc., dated April 12, 2006; and*
- *Water License Application Form, prepared by Andrew Mitchell (Wolfden Resources Inc.), dated September 6, 2006.*

Fisheries and Oceans Canada has reviewed the information provided by Wolfden Resources Inc. (hereafter referred to as Wolfden) on the re-licensing program and is particularly interested in the construction of the three watercourse crossings to accommodate the development of the 12km all-season access road. Following our review of the above provided information, we are providing specific recommendations and requests for information related to our regulatory mandate under the federal *Fisheries Act* and in context of our national Policy for the Management of Fish habitat.

During the Nunavut Impact Review Board (NIRB) review process, DFO informed Wolfden of our requirements regarding the three watercourse crossings. Out of the three watercourses that require crossings, two watercourses were determined to be fish habitat. It was also determined

that the culvert installations at crossing AS13 will require a *Fisheries Act* subsection 35(2) authorization.

- In DFO's letter to Wolfden dated July 11, 1006, it was stated that the culvert installations at crossing AS13 would result in a harmful alteration, disruption and destruction (HADD) of fish habitat if the design remained as closed bottom culverts. Wolfden has indicated that corrugated steel pipe (2.0m diameter) culverts are proposed to be installed at this crossing. The HADD of fish habitat is prohibited under section 35(1) of the *Fisheries Act* unless Authorized by DFO. Authorizations under section 35(2) of the *Fisheries Act* are not issued where the HADD is unacceptable. Further, the guiding principle under the *DFO Policy for the Management of Fish Habitat* (1986) is that there should be a no net loss of productive capacity of fish habitat. As such Authorizations under section 35(2) of the *Fisheries Act* will not be issued unless acceptable measures to offset the HADD of fish habitat with habitat gains are developed and implemented by the proponent. Wolfden will need to complete and return to DFO an application for authorization and the proposed habitat compensation measures to offset the habitat loss.
- Wolfden has committed to following the DFO Operational Statement for the construction of Clear Span Bridges (located at http://www.dfo-mpo.gc.ca/regions/central/habitat/oseo/prov-terr/nu/index_e.htm) at crossing number AS14, as per Wolfden's letter dated December 6, 2006. Therefore, a HADD should not occur and no further review and/or approval of the HADD, at crossing AS14, by DFO is required. The operational statement for installation of clear span bridges is also attached for a list of recommended mitigation measures.
- Wolfden has determined that there is no fish habitat at crossing AS15; therefore, no further review and/or approval by DFO are required.

Please note that causing a HADD without an authorization is an offence under subsection 35(1) of the *Fisheries Act*. Subsection 35(1) states: "*no person shall carry on any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat.*"

If there are any questions concerning the above, or if my understanding of the proposal is either incorrect, incomplete, or if there are changes to the proposed works or undertakings, DFO should be contacted directly by telephone at (867) 979-8007 or by fax at (867) 979-8039.

Yours sincerely,



Amy Liu
Habitat Management Biologist
Fisheries and Oceans Canada – Eastern Arctic Area

Attachments: Nunavut Operational Statement for Clear Span Bridges
Nunavut Operational Statement for Timing Windows
Nunavut Operational Statement Notification Form

Copy: Andrew Mitchell, Wolfden Resources Inc.
Jim Wall, Nunavut Water Board

CLEAR-SPAN BRIDGES

Nunavut Operational Statement Habitat Management Program

VERSION 2.0

Valid until March 31, 2007

This Operational Statement applies to the construction of only those small-scale bridge structures that completely span a watercourse without altering the stream bed or bank, and that are a maximum of two lanes wide. A clear-span bridge is often more preferred than a culvert as no structures are placed on the stream bed or banks.

Clear-span bridge construction has the potential to negatively affect riparian habitat. Riparian vegetation occurs adjacent to the watercourse and directly contributes to fish habitat by providing shade, cover, and spawning and food production areas. Only the vegetation required to be removed to meet operational and safety concerns for the crossing structure and the approaches should be removed.

Fisheries and Oceans Canada (DFO) is responsible for protecting fish and fish habitat across Canada. Under Section 35 of 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 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 be incorporated into the design and construction of small-scale, clear-span roadway or railway bridges in order to avoid negative impacts to fish habitat. **You may proceed with your Clear-Span Bridge project without a DFO review when you meet the following conditions:**

- ▶ the bridge is no greater than two lanes in width and does not encroach on the natural channel width by the placement of abutments, footings or armouring (e.g., rock and concrete) below the ordinary high water mark (see definition below) so that there is no restriction to natural channel processes,
- ▶ the work does not include realigning the watercourse,
- ▶ disturbance to riparian vegetation is minimized,
- ▶ the work does not involve dredging, infilling or excavating the bed or bank of the watercourse,
- ▶ 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 Clear-Span Bridges* listed below.

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 a 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 below, if you wish to obtain DFO's opinion on the possible options you should consider to avoid contravention of the *Fisheries Act*.

This Operational Statement does not release you from the responsibility of obtaining any other permits or approvals that may be required under local, territorial and federal legislation (e.g., the *Navigable Waters Protection Act*, *Nunavut Waters and Surface Rights Tribunal Act*, *Territorial Lands Act and Regulations*, *Regional Inuit Association Land Use Permits*, etc.) that apply to the work being carried out in relation to this Operational Statement.

We ask that you notify DFO, preferably 10 working days before starting your work, by filling out and sending in, by mail or by fax, the Nunavut notification form to the DFO office in your area. 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 Clear-Span Bridges

1. Avoid building on meander bends, braided streams, alluvial fans or any other area that is inherently unstable and may result in the erosion and scouring of the bridge structure.
2. Construct the bridge structure (including any approaches, abutments, armouring (rock and concrete) or footings) entirely above the ordinary high water mark (see definition below) and away from areas with eroding or unstable banks.
3. Construct the bridge structure with sufficient freeboard to pass floating objects at high flows.
4. Design the bridge so that stormwater runoff from the bridge deck, side slopes and approaches is directed to a collection basin or vegetated area having suitable features to remove suspended solids, dissipate velocity and prevent sediment and other deleterious substances from entering the watercourse. In areas with permafrost, care should be exercised to ensure these measures do not cause thawing or frost heave.
5. Generally, there are no restrictions on timing for the construction of clear-span structures as they do not involve in-water work. However, if there are any activities with the potential to disrupt spawning fish, their incubating eggs and larval life stages (e.g., in-water crossing of watercourse by machinery), adhere to territorial fisheries timing windows (see the attached *Nunavut In-Water Construction Timing Windows*), or alternatively, carry out the project when the waterbody is frozen to the bottom or is dry.
6. Machinery fording the watercourse to bring equipment required for construction to the opposite side of the watercourse should be limited to a one-time event (over and back) and occur only if an existing crossing at another location cannot be used. If the stream bed and banks are highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation is likely to occur as a result of equipment crossing, then a temporary crossing structure or other practices should be used to protect these areas. The fording should be timed in accordance with Measure 5.
7. Install effective sediment and erosion control measures before starting work to prevent the entry of sediment into the watercourse. Pay particular attention to the ditches of road approaches. Inspect measures regularly during the course of construction and until any required re-vegetation has established to ensure they are functioning properly. Make all necessary repairs if any damage is discovered or if these measures are not effective at controlling erosion and sedimentation.
8. Operate machinery from outside of the water and in a manner that minimizes disturbance to the banks of the watercourse.



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Nunavut Operational Statement Habitat Management Program

VERSION 2.0
Valid until March 31, 2007

- 8.1. Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
- 8.2. Wash, refuel and service machinery and store fuel and other materials for the machinery away from the water to prevent deleterious substances from entering the water.
- 8.3. Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
9. Use measures to prevent deleterious substances, such as new concrete (i.e., it is pre-cast, cured and dried before use near the watercourse), grout, paint, ditch sediment and preservatives from entering the watercourse.
10. While this Operational Statement does not apply to the clearing of riparian vegetation, the removal of select plants may be required to meet operational and/or safety concerns for the crossing structure and the approaches. This removal should be kept to a minimum and will not occur outside of the road right-of-way.
11. Stabilize any waste materials removed from the work site, above the ordinary high water mark (see definition below), to prevent them from entering any watercourse. Spoil piles could be contained with silt fence, flattened, covered with biodegradable mats or tarps, and/or planted with preferably native grass or shrubs.
12. Vegetate any disturbed areas by planting and seeding preferably native trees, shrubs or grasses and cover such areas with mulch to prevent soil erosion and to help seeds germinate. If there is insufficient time in the growing season remaining for the seeds to germinate, stabilize the site (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and then vegetate the following spring. 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.
13. Maintain effective sediment and erosion control measures until complete 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.

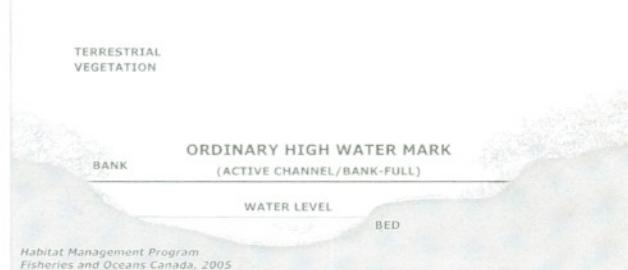
Definition:

Ordinary high water mark – The usual or average level to which a body of water rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing waters (rivers, streams) this refers to the “active channel/bank-full level” which is often the 1:2 year flood flow return level. In inland lakes, wetlands or marine environments it refers to those parts of the water body bed and banks that are frequently flooded by water so as to leave a mark on the land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation (excepting water tolerant species). For reservoirs this refers to normal high operating levels (Full Supply Level).

CROSS-SECTION OF INLAND LAKES, WETLANDS OR MARINE ENVIRONMENTS



CROSS-SECTION OF FLOWING WATERS (RIVERS, STREAMS)



FISHERIES AND OCEANS CANADA OFFICE IN NUNAVUT

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Aussi disponible en français.
www.dfo-mpo.gc.ca/canwaters-eauxcan/



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NUNAVUT IN-WATER CONSTRUCTION TIMING WINDOWS FOR THE PROTECTION OF FISH AND FISH HABITAT

Restricted activity timing windows have been identified for Nunavut lakes, rivers and streams to protect fish during spawning and incubation periods when spawning fish, eggs and fry are vulnerable to disturbance or sediment. During these periods, no in-water or shoreline work is allowed except under site- or project-specific review and with the implementation of protective measures. Restricted activity periods are determined on a case by case basis according to the species of fish in the water body, whether those fish spawn in the spring, summer or fall, and where the water body is located.

Timing windows are just one of many measures used to protect fish and fish habitat when carrying out a work or undertaking in or around water. Be sure to follow all of the measures outlined in the Operational Statements to avoid negative impacts to fish habitat.



Figure 1: Fish Timing Zones for Nunavut.

How To Determine Timing Windows

1. Determine if the water body is in Zone 1 or 2 according to Figure 1.
2. If the water body is in Zone 2, determine the fish species living in the water body where you wish to do work. Consult with local sources such as hunters and trappers associations, wildlife officers, or contact Fisheries and Oceans Canada (DFO).
3. Determine whether the fish living in the water body spawn in the spring or fall according to Table 1. Where both spring and fall spawning fish are present, or if it is unknown what species are in the water body, both timing windows should be combined to adequately protect all species.
4. Using Table 2 below determine the in-water work timing restrictions according to the location of a water body (Zone 1 or 2) and whether the species in the water body spawn in the spring or fall. During these periods, in-water or shoreline work (below the ordinary high water mark) is not permitted without site or project-specific review by DFO.

Table 1: General Range of Spawning Times in Nunavut:

Species	Spawning Period (spring/ fall)
Arctic Char	Fall
Lake Trout	Fall
Whitefish ¹	Fall
Arctic Grayling	Spring
Northern Pike	Spring

¹ Includes Broad, Lake and Round Whitefish

Table 2: Timing Window when In-Water Activities are NOT permitted, by Zone and Spawning Period:

Zone	Spring Spawning Species	Fall Spawning Species	Spring & Fall spawning, or Unknown species
1	N/A	September 1 – June 30	N/A
2	May 1 - July 15	August 15 – June 30	August 15 – July 15

Aussi disponible en français.

www.dfo-mpo.gc.ca/canwaters-eauxcan/



NOTIFICATION FORM

Nunavut Operational Statement Habitat Management Program

VERSION 2.0

Valid until March 31, 2007

PROPONENT INFORMATION

NAME:

STREET AND MAILING ADDRESS:

CITY/TOWN:

TEL. NO. (RESIDENCE):

FAX NO:

PROVINCE/TERRITORY:

TEL. NO. (WORK):

POSTAL CODE:

EMAIL ADDRESS:

CONTRACTOR INFORMATION (provide this information if a Contractor is working on behalf of the Proponent)

NAME:

STREET AND MAILING ADDRESS:

CITY/TOWN:

TEL. NO. (RESIDENCE):

FAX NO:

PROVINCE/TERRITORY:

TEL. NO. (WORK):

POSTAL CODE:

EMAIL ADDRESS:

PROJECT INFORMATION

Select Operational Statements that are being used (check all applicable boxes):

Bridge Maintenance Culvert Maintenance Routine Maintenance Dredging
 Clear-Span Bridges Ice Bridges

Select the type of water body at or near your project:

River, Stream, Creek Pond or wetland (pond is less than 8 hectares) Marine (Ocean or Sea)
 Lake (8 hectares or greater) Estuary

Location of the Project(s) (fill out this section if the project location is different from Proponent Information; append multiple project locations on an additional sheet if necessary)

Name of Water body

Coordinates of the Project (UTM co-ordinate or Degrees, Minutes, Seconds), if available

Easting:
Latitude:

Northing:
Longitude:

Legal Description
(Plan, Block, Lot, Concession, Township, Municipality)

Directions to Access the Project Site
(i.e., Route or highway number, etc.)

Proposed Start Date

(YYYY/MM/DD):

Proposed Completion Date

(YYYY/MM/DD):

We ask that you notify DFO, preferably 10 working days before starting your work, by filling out and sending in, by mail or by fax, this notification form to the Nunavut DFO office at the address listed below. This information is requested in order to evaluate the effectiveness of the work carried out in relation to the Operational Statement.

I, _____ (print name)
certify that the information given on this form is, to the best of my knowledge, correct and complete.

Signature

Date

Note: If you cannot meet all of the conditions and cannot incorporate all of the measures in the Operational Statement, then your project may result in a 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 below, if you wish to obtain DFO's opinion on the possible options you should consider to avoid contravention of the *Fisheries Act*.

Information about the above-noted proposed work or undertaking is collected by DFO under the authority of the *Fisheries Act* for the purpose of administering the fish habitat protection provisions of the *Fisheries Act*. Personal information will be protected under the provisions of the *Privacy Act* and will be stored in the Personal Information Bank DFO-CSI-605. Under the *Privacy Act*, individuals have a right to, and on request shall be given access to, any personal information about them contained in a personal information bank. Instructions for obtaining personal information are contained in the Government of Canada's Info Source publications available at www.infosource.gc.ca or in Government of Canada offices. Information other than "personal" information may be accessible or protected as required by the provisions of the *Access to Information Act*.

FISHERIES AND OCEANS CANADA OFFICE IN NUNAVUT

Fisheries and Oceans Canada – Eastern Arctic Area

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