

Site 55

Unnamed Tributary of Kettle River

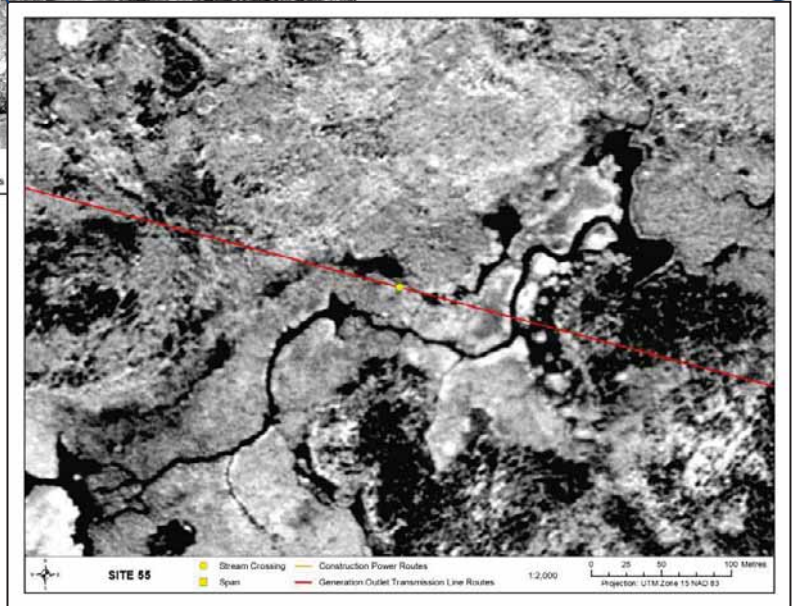
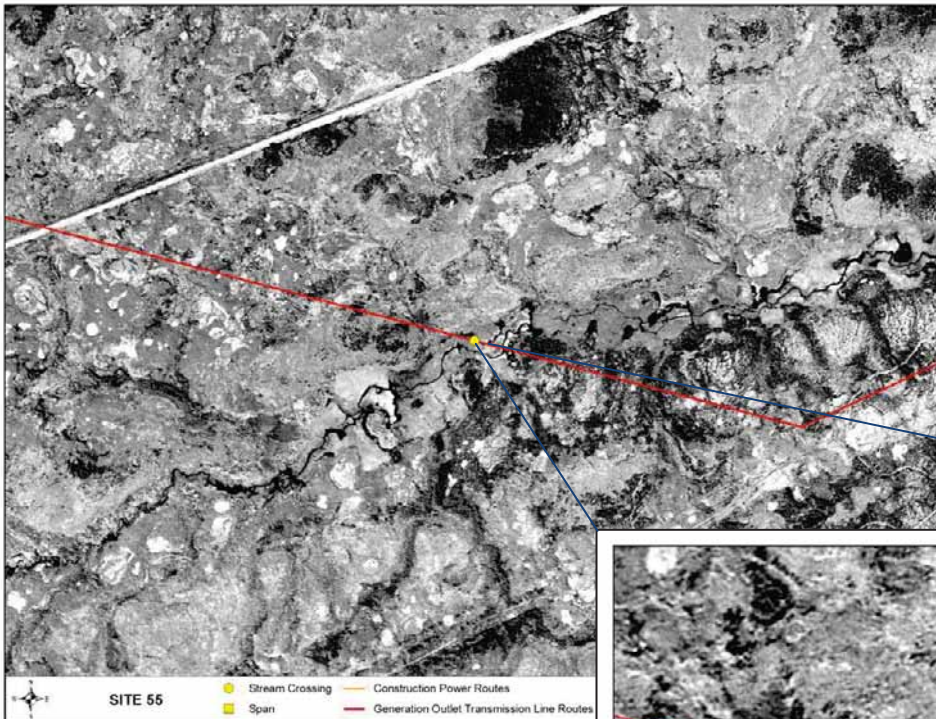
Location

Datum: NAD 83
UTM: Zone: 15V
Easting: 375045
Northing: 6232375

Location Depicted Below:

General Morphology

Gen. Description: Wetland/bog drainage
Pattern: -
Confinement: Confined
Stage: -
Flow Regime: Perennial
U/S Drainage: 4.4 km²
Receiving Water/Dist.: Kettle River/8 km



Site Conditions

+ Physical Data

Survey Date: 1 September 2012

Channel Profile

Channel and Flow

Channel Width (m) ~ 5
Wetted Width (m) -

Water Depths (m)

Max. -
Avg. -

Banks

Right Bank Height (m): - Shape: - Stability: Stable
Left Bank Height (m): - Shape: - Stability: Stable

Substrate

Substrate Type (%)

Fines -
Small Gravel -
Large Gravel -
Cobble -
Boulder -

Habitat Type

Habitat Composition (%)

Pool 100
Flat -
Run -
Riffle -

Cover Types

Total Cover Available (%)

US DS
- -

Cover Composition (% of Total)

Large Woody Debris -
Overhanging Vegetation -
Instream Vegetation -
Pool -
Boulder -
Undercut Bank -
Surface Turbulence -

Riparian

Riparian Vegetation Type (Y/N)

Moss -
Grasses/Sedges Y
Shrubs Y
Conifers Y
Deciduous -
Mixed Forest -
Canopy Cover (%) 0

+ Water Quality Data

Surface Temp (°C): -
Specific Conductance (µS/cm): -
TDS (g/L): -
Salinity (ppt): -

DO (mg/L): -
pH: -
Turbidity (NTU): -

Fish Habitat Classification and Sensitivity

+ Fish Habitat Potential

Spawning

Rearing/Feeding

Overwintering

Large-Bodied Fish:

Low-Moderate

Low

Low

Small-Bodied Fish:

Moderate

Moderate

Low

Impediments to Migration: Beaver dams downstream and upstream

Fish Presence: Unknown

+ Fish and Fish Habitat Sensitivity

Sensitivity Rating: Low



📷 Photograph Documentation



Photo 1. View of crossing at Site 46, 2 km upstream of Site 55.



Photo 2. Downstream view of crossing at Site 46, 2 km upstream of Site 55.

Appendix D

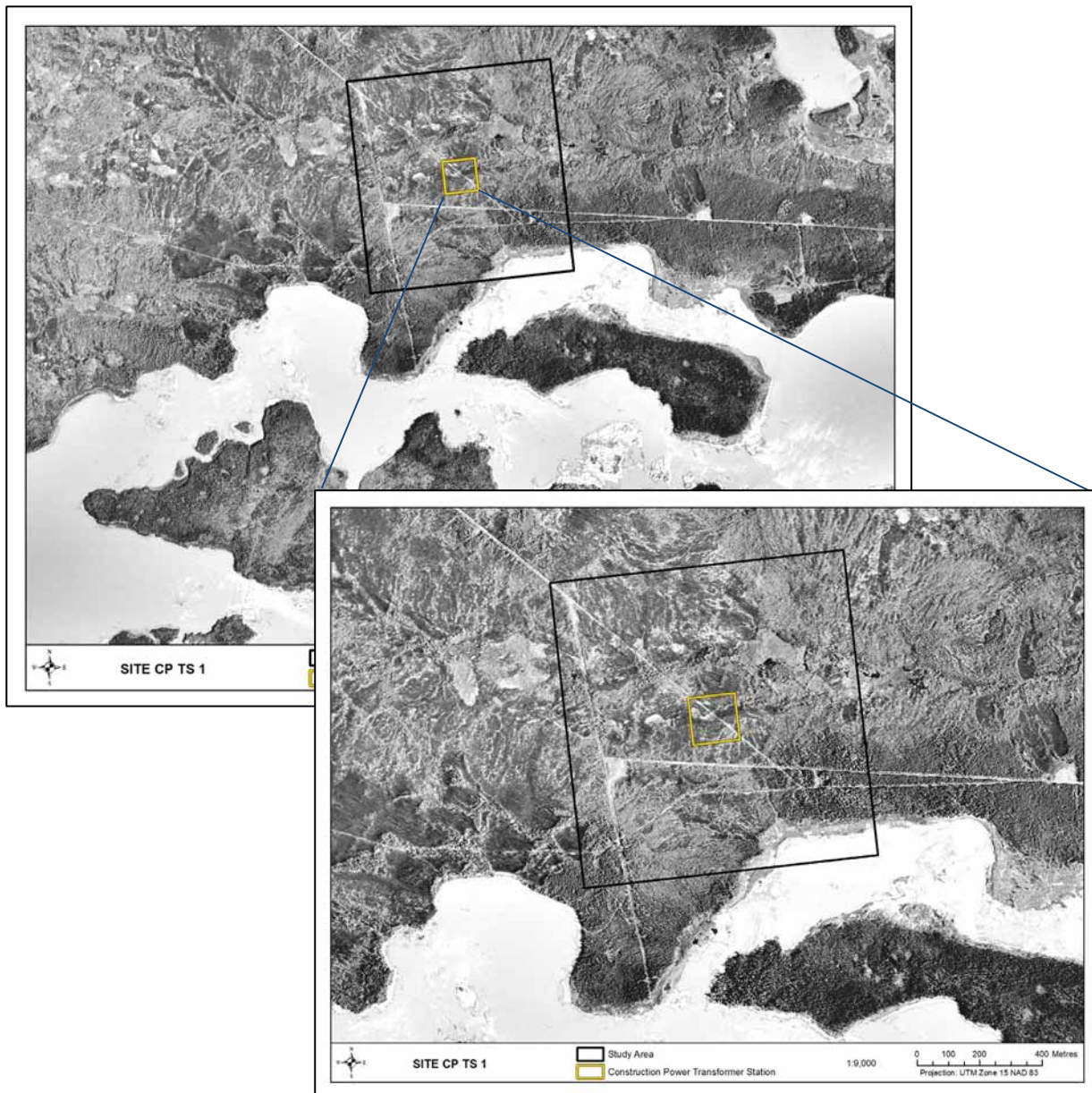
Construction Power Station Detailed Fish Habitat Assessment Booklets

Location

Datum:	NAD 83	
UTM:	<i>Zone:</i>	15V
	<i>Easting:</i>	362500
	<i>Northing:</i>	6247217
Location Depicted Below:		

General Morphology

Gen. Description:	Large River
Pattern:	Straight
Confinement:	Confined
Stage:	Moderate
Flow Regime:	Perennial
U/S Drainage:	1,364,047.07 km ²
Receiving Water/Dist.:	Stephens Lake/3.89 km



Site Conditions

+ Physical Data

Channel Profile

Channel and Flow

Channel Width (km)	1.55
Wetted Width (km)	1.53

Water Depths (m)

Max.	-
Avg.	-

Banks

Right Bank Height (m):	-	Shape: vertical	Stability:	unstable
Left Bank Height (m):	-	Shape: vertical	Stability :	unstable

Substrate

Substrate Type (%)

Fines	-
Small Gravel	-
Large Gravel	-
Cobble	-
Boulder	-

Habitat Type

Habitat Composition (%)

Pool	-
Flat	-
Run	-
Riffle	-

Cover Types

	US	DS
Total Cover Available (%)	-	-

Cover Composition (% of Total)

Large Woody Debris	-	-
Overhanging Vegetation	-	-
Instream Vegetation	-	-
Pool	-	-
Boulder	-	-
Undercut Bank	-	-
Surface Turbulence	-	-

Riparian

Riparian Vegetation Type (Y/N)

Moss	-
Grasses/Sedges	-
Shrubs	-
Conifers	Y
Deciduous	-
Mixed Forest	-
Canopy Cover (%)	-

+ Water Quality Data

Surface Temp (°C):	-	DO (mg/L):	-
Specific Conductance (µS/cm):	-	pH:	-
TDS (g/L):	-	Turbidity (NTU):	-
Salinity (ppt):	-		

Fish Habitat Classification and Sensitivity

+ Fish Habitat Potential

	Spawning	Rearing/Feeding	Overwintering
Large-Bodied Fish:	High	Moderate-High	Low
Small-Bodied Fish:	High	Moderate-High	Low

Impediments to Migration: None observed

Common Fish: brook stickleback, burbot, cisco, fathead minnow, finescale dace, freshwater drum, goldeye, Iowa darter, Johnny darter, lake chub, lake sturgeon, lake whitefish, longnose dace, longnose sucker, mooneye, northern pike, northern redbelly dace, pearl dace, rainbow smelt, sauger, slimy sculpin, spottail shiner, trout-perch, walleye, white sucker, yellow perch (Keeyask Hydro Power Limited Partnership, 2012)

+ Fish and Fish Habitat Sensitivity

Sensitivity Rating: Moderate-High

APPENDIX E

Watercourse Crossings on Keeyask Transmission Routes Against the Minor Works Order Criteria for Aerial Cables

Appendix E: Watercourse Crossings on Keyask Transmission Routes Against the Minor Works Order Criteria for Aerial Cables

Site ID	Latitude	Longitude	Waterbody	Channel Width (m) ¹	Stream Channel Width <15m	Meets CAN/CSA-C22.3 No 1-10	Site >1000m from Lake	Not a Chartered Watercourse	Not a Canal	Poles Not in HWM	Meets all Minor Works Criteria	Comment
UT												
19	56° 20' 53.917" N	95° 11' 14.037" W	Nelson River	810	N	Y	N	Y	Y	Y	N	Major watercourse.
18	56° 20' 28.042" N	95° 10' 53.378" W	Unnamed Tributary of Nelson River	3	Y	Y	N	Y	Y	Y	N	Wetland/bog habitat. Discontinuous channel with ponded areas.
CP												
19	56° 20' 53.917" N	95° 11' 14.037" W	Nelson River	810	N	Y	N	Y	Y	Y	N	Major watercourse.
18	56° 20' 28.042" N	95° 10' 53.378" W	Unnamed Tributary of Nelson River	3	Y	Y	N	Y	Y	Y	N	Wetland/bog habitat. Discontinuous channel with ponded areas.
15	56° 16' 25.011" N	95° 6' 40.883" W	Unnamed Tributary of Butnau River	10	Y	Y	Y	Y	Y	Y	Y	Low gradient boreal stream.
13	56° 13' 51.280" N	95° 4' 0.117" W	Butnau River	20	N	Y	Y	Y	Y	Y	N	Small river.
46	56° 12' 39.132" N	95° 2' 44.809" W	Unnamed Tributary of Kettle River	N/A	Y	Y	Y	Y	Y	Y	Y	Wetland/bog habitat. Weakly defined channel.
GOT												
21	56° 19' 33.288" N	95° 4' 34.741" W	Unnamed Tributary of Stephens Lake	N/A	Y	Y	N	Y	Y	Y	N	Wetland/bog habitat. Discontinuous channel with ponded areas.
22	56° 19' 23.209" N	95° 3' 27.528" W	Unnamed Tributary of Stephens Lake	N/A	Y	Y	N	Y	Y	Y	N	Wetland/bog habitat.
49	56° 19' 11.146" N	95° 2' 7.071" W	Unnamed Tributary of Stephens Lake	1	Y	Y	N	Y	Y	Y	N	Wetland/bog habitat with weakly defined channel.
23	56° 19' 6.456" N	94° 59' 31.579" W	Man-made Drainage Channel	4	Y	Y	Y	Y	Y	Y	Y	Man-made channel.
24	56° 19' 19.452" N	94° 54' 44.818" W	Butnau River	40	N	Y	Y	Y	Y	Y	N	Medium sized river with flooded floodplain.
26	56° 19' 25.355" N	94° 45' 54.893" W	Kettle River	12	Y	Y	Y	Y	Y	Y	Y	Medium sized river with well-defined channel.
48	56° 20' 54.266" N	94° 38' 50.441" W	Kettle River	20	N	Y	Y	Y	Y	Y	N	Medium sized river with well-defined channel.

¹Measured during site visit.

APPENDIX F

Applicable Department of Fisheries and Oceans Operational Statements



OVERHEAD LINE CONSTRUCTION

Fisheries and Oceans Canada
Manitoba Operational Statement

Version 3.0

Overhead lines are constructed for electrical or tele-communication transmission across many watercourses that range in size from small streams and ponds to large rivers, lakes and reservoirs. This Operational Statement applies to selective removal of vegetation along the right-of-way to provide for installation and safe operation of overhead lines, and passage of equipment and materials across the water body.

Although fish habitat occurs throughout a water system, it is the riparian habitat that is most sensitive to overhead line construction. Riparian vegetation occurs adjacent to the watercourse and directly contributes to fish habitat by providing shade, cover, and spawning and food production areas. It is important to design and build your overhead line project to meet your needs while also protecting riparian areas. Potential impacts to fish and fish habitat include excessive loss of riparian vegetation, erosion and sedimentation resulting from bank disturbance and loss of plant root systems, rutting and compaction of stream substrate at crossing sites, and disruption of sensitive fish life stages.

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 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 overhead line project without a DFO review when you meet the following conditions:

- it does not require the construction or placement of any temporary or permanent structures (e.g. islands, poles, crib works, etc.) below the ordinary high water mark (HWM) (see definition below), and
- you incorporate the *Measures to Protect Fish and Fish Habitat when Constructing Overhead Lines* 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 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 DFO office in your area 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 municipal, provincial 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 DFO office in your area (see Manitoba DFO office list).

We ask that you notify DFO, preferably 10 working days before starting your work by filling out and sending the Manitoba Operational Statement notification form (www.dfo-mpo.gc.ca/regions/central/habitat/os-ao/prov-terr/index_e.htm) 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 Overhead Lines

1. Installing overhead lines under frozen conditions is preferable in all situations. On wet terrains (e.g., bogs), lines should be installed under frozen conditions, where possible, or using aerial methods (i.e., helicopter).
2. Design and construct approaches so that they are perpendicular to the watercourse wherever possible to minimize loss or disturbance to riparian vegetation.
3. Avoid building structures on meander bends, braided streams, alluvial fans, active floodplains or any other area that is inherently unstable and may result in erosion and scouring of the stream bed or overhead line structures.
 - 3.1. Wherever possible, locate all temporary or permanent structures, such as poles, sufficiently above the HWM to prevent erosion.
4. While this Operational Statement does not cover the clearing of riparian vegetation, the removal of select plants may be necessary to accommodate the overhead line. This removal should be kept to a minimum and within the road or utility right-of-way.
5. Machinery fording the watercourse to bring equipment required for construction to the opposite side is limited to a one-time event (over and back) and should occur only if an existing crossing at another location is not available or practical to use. A *Temporary Stream Crossing Operational Statement* is also available.
 - 5.1. If minor rutting is likely to occur, stream bank and bed protection methods (e.g., swamp mats, pads)

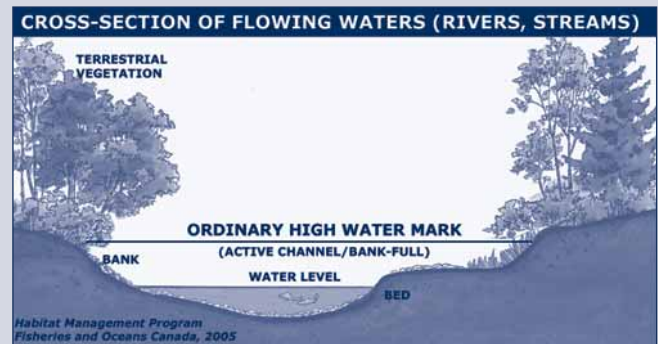
should be used provided they do not constrict flows or block fish passage.

- 5.2. Grading of the stream banks for the approaches should not occur.
 - 5.3. If the stream bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation is likely to occur as a result of equipment fording, then a temporary crossing structure or other practice should be used to protect these areas.
 - 5.4. Time the one-time fording to prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the *Manitoba In-Water Construction Timing Windows*).
 - 5.5. Fording should occur under low flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
6. Operate machinery on land and in a manner that minimizes disturbance to the banks of the watercourse.
- 6.1. Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
 - 6.2. 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.
 - 6.3. Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
 - 6.4. Restore banks to original condition if any disturbance occurs.
7. Install effective sediment and erosion control measures before starting work to prevent entry of sediment into the watercourse. Inspect them regularly during the course of construction and make all necessary repairs if any damage occurs.
- 7.1. Avoid work during wet, rainy conditions or use alternative techniques such as aerial methods (i.e., helicopter) to install overhead lines.
8. Stabilize any waste materials removed from the work site to prevent them from entering the watercourse. This could include covering spoil piles with biodegradable mats or tarps or planting them with grass or shrubs.
9. Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.
- 9.1. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

Definition:

Ordinary high water mark (HWM) – 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).



FISHERIES AND OCEANS CANADA OFFICES IN MANITOBA

Winnipeg Office

Fisheries and Oceans Canada
Freshwater Institute
501 University Crescent
Winnipeg, Manitoba
R3T 2N6
Tel: (204) 983-5163
Fax: (204) 984-2402

Dauphin Office

Fisheries and Oceans Canada
101-1st Avenue N.W.
Dauphin, Manitoba
R7N 1G8
Tel: (204) 622-4060
Fax: (204) 622-4066

Aussi disponible en français

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



TEMPORARY STREAM CROSSING

Fisheries and Oceans Canada
Manitoba Operational Statement

Version 1.0

A temporary stream crossing consists of i) a one-time ford in flowing waters, ii) a seasonally dry streambed ford, or iii) a temporary bridge (e.g., Bailey bridge or log stringer bridge). Temporary stream crossings are employed for short term access across a watercourse by construction vehicles when an existing crossing is not available or practical to use. They are not intended for prolonged use (e.g., forest or mining haul roads). The use of temporary bridges or dry fording is preferred over fording in flowing waters due to the reduced risk of damaging the bed and banks of the watercourse and downstream sedimentation caused by vehicles. Separate Operational Statements are available for *Ice Bridges and Snow Fills* used for temporary access during the winter and for non-temporary *Clear Span Bridges*.

The risks to fish and fish habitat associated with temporary stream crossings include the potential for direct harm to stream banks and beds, release of excessive sediments and other deleterious substances (e.g., fuel, oil leaks), loss of riparian habitat and disruption to sensitive fish life stages.

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 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 temporary stream crossing project without a DFO review when you meet the following conditions:

- the bridge is no greater than one lane in width, and no part of its structure is placed within the wetted portion of the stream,
- the work does not include realigning the watercourse,
- for fording in flowing waters and temporary bridges, the channel width at the crossing site is no greater than 5 metres from ordinary high water mark to ordinary high water mark (HWM) (see definition below),
- disturbance to riparian vegetation is minimized,
- the work does not involve dredging, infilling, grading or excavating the bed or bank of the watercourse,
- all crossing materials will be removed prior to the spring freshet, or immediately following project completion if this occurs earlier,

- fording involves a one time event (over and back) and will not occur in areas that are known fish spawning sites,
- the crossing will not result in erosion and sedimentation of the stream, or alteration (e.g., compaction or rutting) of the bed and bank substrates,
- the crossing does not involve installation of a temporary culvert, and
- you incorporate the *Measures to Protect Fish and Fish Habitat when Carrying Out a Temporary Stream Crossing* 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 DFO office in your area 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 municipal, provincial and 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* (SARA) (www.sararegistry.gc.ca). If you have questions regarding this Operational Statement, please contact the DFO office in your area (see Manitoba DFO office list).

We ask that you notify DFO, preferably 10 working days before starting your work, by filling out and sending the Manitoba Operational Statement notification form (www.dfo-mpo.gc.ca/regions/central/habitat/os-ao/prov-terr/index_e.htm) 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 Carrying Out a Temporary Stream Crossing

1. Use existing trails, roads or cut lines wherever possible, as access routes to avoid disturbance to the riparian vegetation.
2. Locate crossings at straight sections of the stream, perpendicular to the bank, whenever possible. Avoid crossing 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 stream bed.

3. While this Operational Statement does not cover the clearing of riparian vegetation, the removal of select plants may be necessary to access the construction site. This removal should be kept to a minimum and within the road or utility right-of-way. When practicable, prune or top the vegetation instead of uprooting.
4. Generally, there are no restrictions on timing for the construction of bridge structures or fording seasonally dry streambeds, as they do not involve in-water work. However, if there are any activities with the potential to disrupt sensitive fish life stages (e.g., fording of the watercourse by machinery) these should adhere to appropriate fisheries timing windows (see the *Manitoba In-Water Construction Timing Windows*).
5. Machinery fording a flowing watercourse to bring equipment required for construction to the opposite side is limited to a one-time event (over and back) and is to occur only if an existing crossing at another location is not available or practical to use.
 - 5.1. If minor rutting is likely to occur, stream bank and bed protection methods (e.g., swamp mats, pads) should be used, provided they do not constrict flows or block fish passage.
 - 5.2. Grading of the stream banks for the approaches should not occur.
 - 5.3. If the stream bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation are likely to occur as a result of equipment fording, then a temporary bridge should be used in order to protect these areas.
 - 5.4. The one-time fording should adhere to fisheries timing windows (see Measure 4).
 - 5.5. Fording should occur under low flow conditions, and not when flows are elevated due to local rain events or seasonal flooding.
6. Install effective 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 make all necessary repairs if any damage occurs.
7. For temporary bridges also employ the following measures:
 - 7.1. Use only clean materials (e.g., rock or coarse gravel fill, wood, or steel) for approaches to the bridge (i.e., not sand, clay or organic soil) and install in a manner that avoids erosion and sedimentation.
 - 7.2. Design temporary bridges to accommodate any expected high flows of the watercourse during the construction period.
 - 7.3. Restore the bank and substrate to pre-construction condition.
 - 7.4. Completely remove all materials used in the construction of the temporary bridge from the watercourse following the equipment crossing, and stabilize and re-vegetate the banks.

8. Operate machinery in a manner that minimizes disturbance to the watercourse bed and banks.
 - 8.1. Protect entrances at machinery access points (e.g., using swamp mats) and establish single site entry and exit.
 - 8.2. Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
 - 8.3. 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.
 - 8.4. Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
9. Stabilize any waste materials removed from the work site, above the HWM, to prevent them from entering any watercourse. This could include covering spoil piles with biodegradable mats or tarps or planting them with preferably native grass or shrubs.
10. Vegetate any disturbed areas by planting and seeding preferably with 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 remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.
 - 10.1. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

Definition:

Ordinary high water mark (HWM) - 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).

FISHERIES AND OCEANS CANADA OFFICES IN MANITOBA

Winnipeg Office

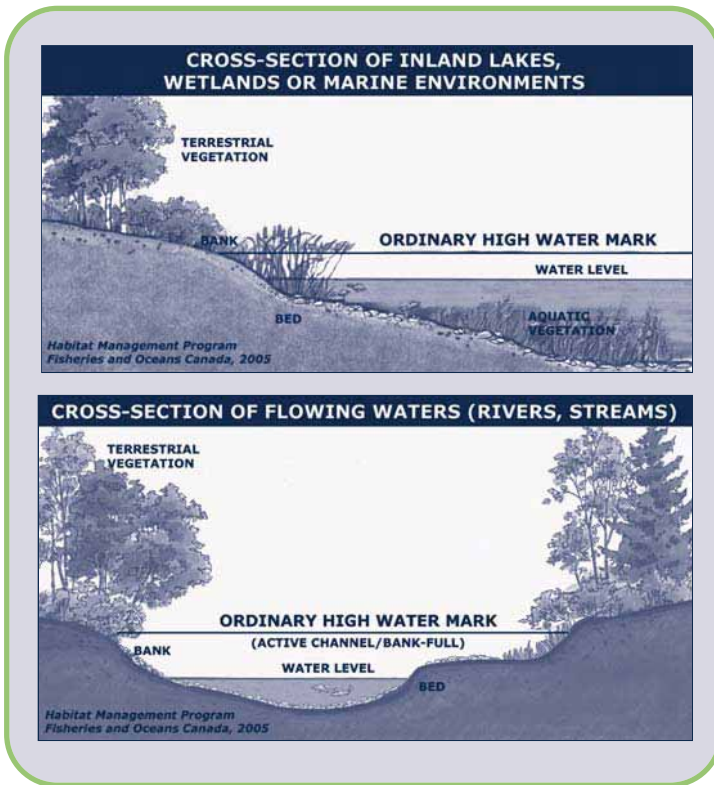
Fisheries and Oceans Canada
Freshwater Institute
501 University Crescent
Winnipeg, Manitoba
R3T 2N6
Tel: (204) 983-5163
Fax: (204) 984-2402

Dauphin Office

Fisheries and Oceans Canada
101-1st Avenue N.W.
Dauphin, Manitoba
R7N 1G8
Tel: (204) 622-4060
Fax: (204) 622-4066

Aussi disponible en français

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



DFO/2007-1329

©Her Majesty the Queen in Right of Canada 2008



ICE BRIDGES AND SNOW FILLS

Fisheries and Oceans Canada
Manitoba 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 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, 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 DFO office in your area 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 municipal, provincial 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 DFO office in your area (see Manitoba DFO office list).

We ask that you notify DFO, preferably 10 working days before starting your work by filling out and sending the Manitoba Operational Statement notification form (www.dfo-mpo.gc.ca/regions/central/habitat/os-eo/prov-terr/index_e.htm) 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 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.
 - 12.1. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

FISHERIES AND OCEANS CANADA OFFICES IN MANITOBA

Winnipeg Office

Fisheries and Oceans Canada
 Freshwater Institute
 501 University Crescent
 Winnipeg, Manitoba
 R3T 2N6
 Tel: (204) 983-5163
 Fax: (204) 984-2402

Dauphin Office

Fisheries and Oceans Canada
 101-1st Avenue N.W.
 Dauphin, Manitoba
 R7N 1G8
 Tel: (204) 622-4060
 Fax: (204) 622-4066

Aussi disponible en français

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



TIMING WINDOWS

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

Restricted activity timing windows have been identified for Manitoba 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 whether the water body is located in Northern or Southern Manitoba.

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.

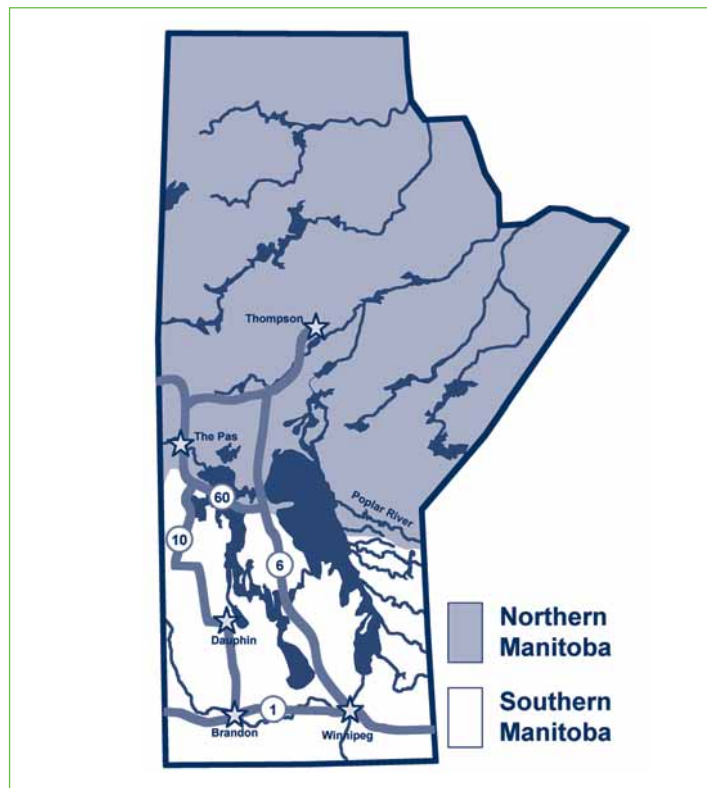


Figure 1:
Northern and Southern Manitoba boundaries for spawning timing windows.

How To Determine Timing Windows

1. Determine the fish species living in the water body where you wish to do work. Consult the Province of Manitoba Angling Map (available from the Government of Manitoba map sales) which details the fish present in most Manitoba lakes and streams, or contact your local Fisheries and Oceans Canada (DFO) office. Pictures of most of these fish species can be found in the Manitoba Angler's Guide (sport fishing regulations).
2. Determine if the fish living in the water body spawn in the spring, summer, or fall according to Table 1. You can have one, two or all three fish spawning types in one water body. In Manitoba, essentially all lakes and streams contain one or more of the spring spawning fish listed, however far fewer contain summer or fall spawning fish.
3. Determine if the water body is located in Northern or Southern Manitoba according to Figure 1.
4. Use Table 2 to determine the in-water work timing restrictions according to the location of a water body (North or South) and the type of fish found within (spring, summer or fall spawners). During these periods no in-water work (below the ordinary high water mark) is to occur without site- or project-specific review by DFO.

Table 1:
Common spring, summer and fall spawning fish.

Spring Spawning Fish	Summer Spawning Fish	Fall Spawning Fish
<ul style="list-style-type: none"> ▶ Northern Pike ▶ Walleye, Sauger ▶ Yellow Perch ▶ Suckers ▶ Smallmouth Bass ▶ Arctic Grayling 	<ul style="list-style-type: none"> ▶ Channel Catfish ▶ Lake Sturgeon ▶ Goldeye, Mooneye ▶ White Bass ▶ Freshwater Drum ▶ Carmine Shiner* 	<ul style="list-style-type: none"> ▶ Brook Trout ▶ Lake Trout ▶ Arctic Char ▶ Lake Whitefish

Table 2:
Timing Windows when no in-water work is to occur in order to protect spawning fish and developing eggs and fry.

	Spring Spawning Fish	Summer Spawning Fish	Fall Spawning Fish
Northern Manitoba	April 15 – June 30	May 15 – July 15	September 1 – May 1
Southern Manitoba	April 1 – June 15	May 1 - June 30*	September 15 – April 30

* Carmine Shiner – This is a Species At Risk found only in Southern Manitoba in the Whitemouth River and its tributaries, the Bird River and its tributaries and the Pinawa Channel. This fish spawns from May 15 to July 15 and this extended summer spawning timing window should be applied to those water bodies where it is found.

FISHERIES AND OCEANS CANADA OFFICES IN MANITOBA

Aussi disponible en français

Winnipeg Office

Fisheries and Oceans Canada
Freshwater Institute
501 University Crescent
Winnipeg, Manitoba
R3T 2N6
Tel: (204) 983-5163
Fax: (204) 984-2402

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

Dauphin Office

Fisheries and Oceans Canada
101-1st Avenue N.W.
Dauphin, Manitoba
R7N 1G8
Tel: (204) 622-4060
Fax: (204) 622-4066



MAINTENANCE OF RIPARIAN VEGETATION IN EXISTING RIGHTS-OF-WAY

Fisheries and Oceans Canada
Manitoba Operational Statement

Version 3.0

Rights-of-way are areas of land devoted to providing transportation corridors (e.g., highways, railways) or utilities (e.g., pipelines, power lines, water lines) that often intersect waterways. Vegetation is closely managed in these areas to prevent disruption to transportation or utilities (e.g., circuit outages, fires) and to ensure personal safety. Maintenance activities include mowing, brushing, topping and slashing of terrestrial vegetation. This Operational Statement applies only to existing rights-of-way at the location where they intersect and cross a water body.

Riparian areas are the vegetated areas adjacent to a water body and directly contribute to fish habitat by providing shade, cover and food production areas. Riparian areas are also important because they stabilize stream banks and shorelines. In order to minimize disturbance to fish habitat and prevent bank erosion, it is important to retain as much riparian vegetation as possible, especially the vegetation directly adjacent to the watercourse, in the right-of-way corridor.

Activities carried out to maintain riparian vegetation in existing rights-of-way can negatively impact fish and fish habitat by causing excessive loss of riparian vegetation, erosion and sedimentation, disturbance to the banks and the bottom of the water body from use of heavy equipment, and introduction of deleterious substances as a result of inadequate containment of spoil piles and improper maintenance of equipment.

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 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 your project in order to avoid negative impacts to fish habitat. You may proceed with your right-of-way maintenance project without a DFO review when you meet the following conditions:

- the work involves the maintenance of vegetation in an **existing** right-of-way for a transportation or utility corridor and not construction of a new right-of-way,
- it is an existing right-of-way at the location where it intersects and crosses a water body,
- it involves the use of vegetative maintenance techniques that allow the root system to stay intact, to help bind the soil and encourage rapid colonization of low-growing plant species, and
- you incorporate the *Measures to Protect Fish and Fish Habitat when Maintaining Riparian Vegetation in Rights-of-Way* 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 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 DFO office in your area 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 municipal, provincial 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 DFO office in your area (see Manitoba DFO office list).

We ask that you notify DFO, preferably 10 working days before starting your work by filling out and sending the Manitoba Operational Statement notification form (www.dfo-mpo.gc.ca/regions/central/habitat/os-ao/prov-terr/index_e.htm) 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 Maintaining Riparian Vegetation in Rights-of-way

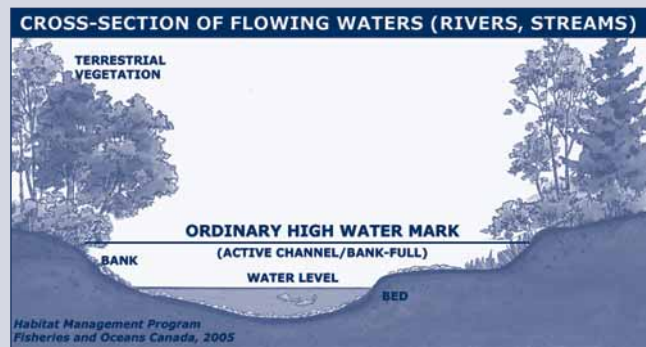
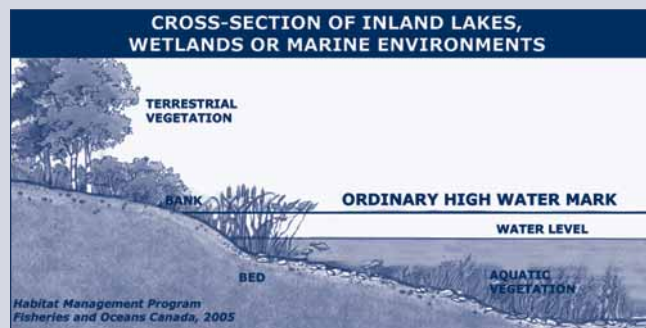
1. While this Operational Statement does not cover the complete clearing of riparian vegetation, the alteration (e.g., topping and pruning) of select plants may be necessary to meet operational and safety needs.
2. Combined maintenance activities (e.g., mowing, brushing, topping, slashing, etc.) will affect no more than one third (1/3) of the total woody vegetation, such as trees and shrubs, in the right-of-way within 30 metres of the ordinary high water mark (see definition below) in any given year.
3. When practicable, alter riparian vegetation in the right-of-way by hand. If machinery must be used, operate machinery on land and in a manner that minimizes disturbance to the banks of the water body.
 - 3.1. Machinery is to arrive on site in a clean condition and is to be maintained free of fluid leaks.
 - 3.2. Wash, refuel and service machinery and store fuel and other materials for the machinery, which include hand

- tools, at locations away from the water to prevent any deleterious substance from entering the water body.
- 3.3. Keep an emergency spill kit on site in case of fluid leaks or spills from machinery.
 - 3.4. Restore banks to original condition if any disturbance occurs.
4. Machinery fording the watercourse to bring equipment required for maintenance to the opposite side is limited to a one-time event (over and back) and should occur only if an existing crossing at another location is not available or practical to use. A *Temporary Stream Crossing Operational Statement* is also available.
 - 4.1. If minor rutting is likely to occur, stream bank and bed protection methods (e.g., swamp mats, pads) should be used provided they do not constrict flows or block fish passage.
 - 4.2. Grading of the stream banks for the approaches should not occur.
 - 4.3. If the stream bed and banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation are likely to occur as a result of equipment fording, then a temporary crossing structure or other practice should be used to protect these areas.
 - 4.4. The one-time fording should prevent disruption to sensitive fish life stages by adhering to appropriate fisheries timing windows (see the *Manitoba In-Water Construction Timing Windows*).
 - 4.5. Fording should occur under low flow conditions and not when flows are elevated due to local rain events or seasonal flooding.
 5. When altering a tree that is located on the bank of a water body, ensure that the root structure and stability are maintained.
 6. Stabilize any waste materials removed from the work site to prevent them from entering the water body. This could include covering spoil piles with biodegradable mats or tarps. All long-term storage of waste materials should be kept outside of the riparian area.
 7. In order to prevent erosion and to help seeds germinate, vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.
 - 7.1. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

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).



FISHERIES AND OCEANS CANADA OFFICES IN MANITOBA

Winnipeg Office

Fisheries and Oceans Canada
 Freshwater Institute
 501 University Crescent
 Winnipeg, Manitoba
 R3T 2N6
 Tel: (204) 983-5163
 Fax: (204) 984-2402

Dauphin Office

Fisheries and Oceans Canada
 101-1st Avenue N.W.
 Dauphin, Manitoba
 R7N 1G8
 Tel: (204) 622-4060
 Fax: (204) 622-4066

Aussi disponible en français

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