



**GENERAL SPECIFICATION FOR ENVIRONMENTAL
PROTECTION FOR CONSTRUCTION IN AND AROUND
WATERBODIES AND ON WATERBODY BANKS**

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This specification covers the environmental protection requirements and mitigation measures that apply to construction involving work in and around waterbodies and on waterbody banks.

182.02 REFERENCES

This specification refers to the following standards, specifications, or publications:

Ontario Provincial Standard Specifications, Construction

OPSS 517	Dewatering
OPSS 803	Vegetative Cover
OPSS 804	Temporary Erosion Control
OPSS 805	Temporary Sediment Control

Canadian and Provincial Statutes

Endangered Species Act, S.O. 2007, c.6

Fisheries Act, R.S.C., 1985, c. F-14
Fish and Wildlife Conservation Act, S.O. 1997, c. 41 - Ontario Regulation 664/98 - Fish Licensing
Species at Risk Act, S.C. 2002, c. 29

Canadian and Provincial Policy

Fisheries and Oceans Canada Code of Practice: End-of-Pipe Fish Protection Screens for Small Water Intakes in Freshwater

Fisheries and Oceans Canada Protocol for the Detection of Fish Species at Risk in Ontario Great Lakes Area (OGLA)

Fisheries and Oceans Canada Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario Great Lakes Area (OGLA)

182.03 DEFINITIONS

For the purpose of this specification, the following definitions apply:

Aquatic Species at Risk means a fish and/or a freshwater mussel species provincially or federally listed as extirpated, endangered, threatened species or species of special concern.

Cofferdam means a temporary enclosure constructed within a waterbody to allow the enclosed area to be pumped out, creating a dry work environment.

Deleterious Substance means as defined by the Fisheries Act.

Entrainment means when a fish is drawn into a water intake and cannot escape.

Endangered Species Act Permit means as defined by the Endangered Species Act.

Fish means as defined by the Fisheries Act.

Fish Habitat means as defined by the Fisheries Act.

Fish Salvage means the physical relocation of fish from the work area.

Fish Screen means a device designed to prevent fish from swimming or being drawn into a water intake pipe.

Fisheries Act Authorization means as defined by the Fisheries Act.

Fisheries Assessment Specialist means an individual who meets the requirements of the Fisheries Assessment specialty and is registered on MTO's Consultant Registry.

Fisheries Contracts Specialist means an individual who meets the requirements of the Fisheries Contracts specialty and is registered on MTO's Consultant Registry.

Freshwater Mussel means as defined by the Fisheries Act.

High-Water Level means the elevation of the top of the bank of the channel. In watercourses this refers to the "bank-full channel" which is often the 1:2 year flood flow return level. In inland lakes and wetlands, it refers to those parts of the waterbody bed and banks that are frequently flooded by water that leaves a mark on the adjacent land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation.

Impingement means when an entrapped fish is held in contact with the intake screen and is unable to free itself.

In-Water Work means any work, activity or undertaking occurring at or below the high-water level that may impact the waterbody bed or flow in the waterbody.

In-Water Work Timing Windows means a restriction to in-water work related to an activity during certain periods to protect fish and freshwater mussels from impacts of works or undertakings in and around waterbodies during critical life stages.

Licence to Collect Fish for Scientific Purposes means as defined in Part IV of Ontario Regulation 664/98, under the Fish and Wildlife Conservation Act.

Mitigation Measures means measures to reduce the spatial scale, duration, or intensity of harmful impacts to fish and fish habitat when such impacts cannot be avoided.

Riparian Vegetation Areas means trees, shrubs and other vegetation on waterbody bank from the high-water level upland for 30 metres.

Sediment means soils or other surface material transported by wind or water as a result of erosion.

Species at Risk Act Permit means as defined in the Species at Risk Act.

Waterbody means any permanent or intermittent, natural or constructed body of water including lakes, ponds, wetlands and watercourses.

Waterbody Bank means the land adjacent to a waterbody from the high-water level to the top of slope.

Waterbody Bed means the bottom and sides of the waterbody over which the water flows, up to the high-water level.

Watercourse means a stream, creek, river, or channel including ditches, in which the flow of water is permanent, intermittent, or ephemeral.

182.04 DESIGN AND SUBMISSION REQUIREMENTS

182.04.01 Submission Requirements

182.04.01.01 Licences and Permits

A Licence to Collect Fish for Scientific Purposes shall be obtained from the Ontario Ministry of Natural Resources and Forestry (MNRF) to conduct a fish salvage prior to any in-water works.

Copies of all permits and licences obtained from regulatory agencies shall be submitted to the Contract Administrator upon receipt.

182.04.01.02 Fisheries Specialists

When a fisheries specialist(s) is required, the name(s) of the fisheries contracts specialist(s) and, if applicable, fisheries assessment specialist(s), shall be provided to the Contract Administrator a minimum of 10 Business Days prior to the commencement of work at each location where specialist oversight is specified.

182.05 MATERIALS

All Materials used to provide environmental protection shall not contain any deleterious substances.

182.06 EQUIPMENT

All Equipment used for the work in and around waterbodies or on waterbody banks shall at all times be free of excess or leaking fuel, lubricants, coolant and any other deleterious substances that could enter the waterbody.

182.07 CONSTRUCTION

182.07.01 General Requirements

In addition to the environmental protection requirements specified elsewhere in the Contract Documents, all Work shall be controlled to provide effective waterbody and fish habitat protection. If fish are observed in the work area during construction the work shall cease, and the fish salvaged.

The Work shall be according to all mitigation measures specified in the Contract Documents.

Unless specified in the Contract Documents, waterbodies shall not be permanently diverted, relocated, blocked, or filled.

Unless specified in the Contract Documents, the removal of woody debris, rocks, sand or other materials from the waterbody bed and banks shall not be permitted.

When practicable, work shall be scheduled to avoid wet or windy periods that may increase erosion and sedimentation.

182.07.02 Operation of Equipment in and around Waterbodies or on Waterbody Banks

Equipment shall arrive on site in clean condition and is to be maintained free of fluid leaks.

Unless specified in the Contract Documents, Equipment shall not enter a waterbody and shall be operated on dry land above the high-water level, on ice, or from a floating barge in a manner that minimizes disturbance to the waterbody banks.

Equipment refueling and maintenance shall take place at locations as far away as practicable from a waterbody and in a manner that prevents any sediment and other deleterious substances from entering a waterbody. An emergency spill kit shall be kept on site to address any fluid leaks or spills from Equipment.

182.07.03 Dewatering and Temporary Flow Control

Dewatering and/or temporary flow control shall be according to OPSS 517.

182.07.04 Preservation of Riparian Vegetation

Riparian vegetation removal shall be no more than one third (1/3) of the total woody riparian vegetation within 30 metres of the high-water level of a waterbody. Vegetative root masses found within the waterbody banks shall remain undisturbed unless specified in the Contract Documents.

Existing trails, roads or cut lines shall be used wherever possible as access routes to avoid disturbance to waterbody banks and riparian vegetation areas. Equipment travel paths, stockpile areas and staging areas, within the vicinity of the crossing, shall be established to minimize impacts to riparian vegetation.

When practicable, riparian vegetation in the right-of-way shall be altered by hand.

182.07.05 Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS 804 and OPSS 805.

Erosion and sediment control measures shall be in place prior to any soil disturbance and shall remain effective at all times, including seasonal and other shut down periods.

Site isolation measures (i.e. cofferdams, turbidity curtains) shall be installed prior to any in-water work activities taking place and shall remain effective at all times to allow the Contractor to work in a manner that prevents sediment from entering into a waterbody.

Measures for managing water being pumped and/or diverted from the site shall be according to OPSS 517.

182.07.01 Restoration of Disturbed Areas

All disturbed areas shall be immediately restored after a disturbance or upon completion of the work in or around waterbodies, waterbody banks, and riparian vegetation areas. The disturbed areas shall be restored to an equivalent or better condition than existed prior to the commencement of construction.

All disturbed areas on waterbody banks and riparian vegetation areas shall be stabilized with effective temporary erosion and sediment control measures as specified in the Contract Documents and maintained until vegetation is established.

All vegetative cover shall be applied as specified in the Contract Documents and according to OPSS 803.

Materials for the restoration of waterbody beds shall not be obtained from below the high-water level of any waterbody unless specified in the Contract Documents.

182.07.07 Contaminant and Spills Management

All stockpiled materials, including but not limited to excavated overburden and topsoil, excess materials, construction debris and containers shall be stored and stabilized in a manner that prevents them from entering any waterbody.

All materials such as paint, primers, blasting abrasives, concrete, rust, solvents, degreasers, grout, or other chemicals shall not enter a waterbody.

All building materials used in and around a waterbody or on waterbody banks shall be handled and treated in a manner to prevent the release or leaching of substances into a waterbody that may be deleterious to fish.

All waste materials (e.g., dredging spoils, construction waste and materials, commercial logging waste, uprooted or cut aquatic plants, accumulated debris) shall be contained and stabilized above the high-water level of nearby waterbodies to prevent re-entry.

182.07.08 Fish Protection

182.07.08.01 Timing of In-Water Works

All in-water work construction activities shall comply with the in-water works timing windows specified in the Contract Documents.

182.07.08.02 Fish Salvage

Fish stranded by the Work or found in the work area during construction shall be salvaged and relocated according to the Licence to Collect Fish for Scientific Purposes, unless specified in the Contract Documents. If fish cannot be safely relocated, the local MNRF office shall be consulted prior to fish salvage commencing to determine a suitable relocation site.

Fish exclusion measures (i.e. block nets) shall be used to prevent fish from re-entering work areas. If the fish exclusion measures fail, additional fish salvage activities shall be performed to relocate the fish from the work areas prior to recommencing construction. All fish exclusion measures shall be removed once the works in the area has been completed.

All fish shall be handled as little as possible and in a manner that minimizes stress and shall prevent the death of fish.

All persons conducting electrofishing shall possess a valid Ontario Electrofishing Certification.

182.07.08.03 Reporting Species at Risk

When an aquatic species at risk (protected under the federal Species at Risk Act (SARA) or the Ontario Endangered Species Act (ESA) is incidentally captured during fish salvage activities, the individual that incidentally captured the aquatic species at risk shall take a digital photograph according to Fisheries and Oceans Canada's Protocol for the Detection of Fish Species at Risk in Ontario Great Lakes Area (OGLA). Once the digital photograph has been taken, the species shall be released immediately. The digital photograph shall be reported and emailed to the Contract Administrator and the appropriate regulatory agency, (i.e. MECP for ESA, and Fisheries and Oceans Canada (DFO) for SARA).

All mortalities of species protected under SARA or ESA associated with the fish salvage activities shall be reported to the Contract Administrator, and the appropriate regulatory agency, immediately upon being discovered. Mortalities shall be vouchered according to Fisheries and Oceans Canada Protocol for the Detection of Fish Species at Risk in Ontario Great Lakes Area (OGLA) and/or Protocol for the Detection and Relocation of Freshwater Mussel Species at Risk in Ontario Great Lakes Area (OGLA).

182.07.08.04 Fish Screens

Any water intakes or outlet pipes in fish bearing waters shall have screens to prevent entrainment or impingement of fish and shall follow the measures as outlined in Fisheries and Oceans Freshwater Code of Practice: End-of-Pipe Fish Protection Screens for Small Water Intakes in Freshwater.

182.07.05 Fisheries Specialist Services

When oversight by a fisheries specialist is required for a location as specified in the Contract Documents, a fisheries contracts specialist shall be retained to provide the following services.

- a) Work with construction personnel to protect fish and fish habitat;
- b) Work with construction personnel in the development of waterbody and fisheries protection strategies and plans, when specified in the Contract Documents;
- c) Liaise with the Owner, the Contract Administrator, and, as necessary, Regulatory Agency representatives regarding Fisheries Act authorization requirements;
- d) Be on-site to inspect the installation, function and decommissioning (as appropriate) of all temporary and permanent mitigation measures as specified in the Contract Documents and including providing field fit advice and necessary corrective actions for issues of non-compliance;

- e) Inspect erosion and sediment control measures within 24 hours after a rain event;
- f) Provide immediate notification to the Contractor and Contract Administrator of any release of a deleterious substance or any unauthorized harmful impacts to fish or where there is imminent danger to fish or any of these potentially occurring;
- g) Complete and submit all monitoring documentation as specified in Table 1;
- h) Fish salvage, as necessary, under a Licence to Collect Fish for Scientific Purposes; and
- i) Review Change Proposals for compliance with the Fisheries Act. If a fisheries assessment is required, it shall be conducted by a fisheries assessment specialist.

182.07.09 Contingency Measures

When an environmental protection measure is found to be ineffective, corrective actions shall be taken immediately including repair or replacement of the measure to ensure waterbody and fish habitat protection.

182.07.10 Management of Excess Materials

Management of excess material shall be according to the Contract Documents.

182.10 BASIS OF PAYMENT

Payment at the Contract price for the appropriate tender items that require fisheries protection and mitigation measures shall include full compensation for all labour, Equipment, and Material to do the work.

TABLE 1
Fisheries Contracts Specialist - Monitoring Documentation

MTO Documentation Name	Warrant for Completion	Distribution
Construction Inspection Checklist	Every day that a fisheries contracts specialist is on site.	Within 1 Business Day of inspection, submit one (1) electronic copy of the inspection checklist to Contract Administrator.
Non - Compliance Summary Form	Friday of each week when the Contractor is not in compliance with waterbody and fish habitat protection measures, conditions of a Fisheries Act authorization, Endangered Species Act permit, or Species at Risk Act permit, as specified in the Contract Documents.	By the following Monday, submit one (1) electronic copy of the non-compliance summary to Contract Administrator.
Construction Monitoring Report	Annually on multi-year construction projects and prior to the completion of construction as specified in the Fisheries Act authorization or unless otherwise specified in the Contract Documents.	<p>Unless specified otherwise in the Contract Documents, by November 15 of the monitoring year, submit one (1) electronic copy of the draft report to Contract Administrator.</p> <p>Unless specified otherwise in the Contract Documents, by December 15 of the monitoring year, submit one (1) electronic copy and one (1) hard copy of the final report incorporating MTO comments on the draft to Contract Administrator.</p>