

## **APPENDIX 1 REGISTRATION FORMAT**

This format outlines the nature and sequence of the information required in an Environmental Assessment Registration. The proponent should reproduce the text of each section as it appears below, adding the required information. The information should be brief but comprehensive. The original (including attached large-scale maps) plus a minimum of 10 paper copies and 1 digital copy (including maps) should be submitted. See Appendix 2 for further information on the submission of computerized copies of documents.

### **NAME OF UNDERTAKING**

#### **PROPONENT:**

**(i) Name of Corporate Body:** World Wildlife Fund Canada

**(ii) Address:** 400-410 Adelaide St W, Toronto, ON M5V 1S8

#### **(iii) Chief Executive Officer:**

**Name:** Megan Leslie

**Official Title:** President & Chief Executive Officer

**Address:** 400-410 Adelaide St W, Toronto, ON M5V 1S8

**Telephone No:** 416-484-7703

#### **(iv) Principal Contact Person for purposes of environmental assessment:**

**Name:** Chelsea Boaler

**Official Title:** Senior Specialist, Restoration and Regeneration

**Address:** 15 White's Road, Hughes Brook, NL, A2H 4A1

**Telephone No.:** 709-701-0310

### **THE UNDERTAKING**

**(i) Name of the Undertaking:** Improvement of Atlantic Salmon passage at a waterfall on Middle Barchois Brook

**(ii) Purpose/Rationale/Need for the Undertaking:** Atlantic salmon and brook trout are both upstream and downstream of the waterfall on Middle Barchois Brook. The waterfall is a partial barrier to salmon, and thus only a few salmon get over the waterfall as indicated by snorkel and electro-fishing surveys. The waterfall is believed to be a barrier to migrating salmon at low and high discharges. Snorkel surveys that were conducted in mid-August 2020 have observed up to 40 salmon just downstream from the waterfall. Snorkel surveys have been conducted in only a few years above the waterfall in August, and only a couple of adult salmon were observed. However, several year classes of juvenile salmon (parr) were found present in an electro-fishing survey, indicated that some salmon surmount the waterfall at higher water levels after the snorkel surveys. The proposed project would increase the water level in the pool below the waterfall, which would provide fish passage at lower water discharge. At very high discharge the velocity would be a barrier to salmon passage. The Atlantic salmon population in Middle

Barachois Brook is at a low level. Stock assessments done in 2005, 2008, 2018, and 2019 indicated that the number of spawners were only 39% to 56% (average 47%) of its conservation requirements.

### **DESCRIPTION OF THE UNDERTAKING**

Under Sections (i), (ii), (iii) and (iv) below, the proponent shall provide complete information concerning the preferred choice of location, design, etc., together with additional information on any alternatives which may have been considered and rejected, but which may still be regarded as viable. Reasons for the rejection of those alternatives should be included.

#### **(i) Geographical Location:**

- Provide a description of the proposed site, including boundaries if possible.

To access the site: Take Camp 180 Resource Road east off the Trans-Canada Highway near Jeffrey's. Proceed about 20 km to Middle Barachois Brook, turn right and follow the road until it crosses Middle Barachois Brook, approximately 10km. The waterfall is about 80m downstream from the bridge.

#### **Upper Waterfall on Middle Barachois Brook, Bay St. George.**

The waterfall is located at 48° 8' 45.21" N, 58° 29' 3.66" W, (map attached) about 27km upstream from the estuary (straight line). It is located about 80m downstream from a bridge on Camp 180 Resource Road. The waterfall poses a serious partial barrier to upstream migrating salmon at most water discharge levels, particularly low and high discharges. Some salmon do surmount the waterfall; but snorkel surveys of the river upstream of the waterfall, in August, indicates that salmon gain passage later, when higher flows are more conducive for salmon to leap the waterfall.

The following photos were taken on August 11, 2019 at a time of very low water level.



**Photo 1:** Waterfall is about 3m high at a slope of about  $70^\circ$  ( $30^\circ$  off vertical). At the low water level when the photo was taken the waterfall had 2 channels. The left channel (looking upstream) is about 0.5m wide at the top; whereas the channel to the right is about 2m wide and contains most of the river flow at this water level. Note, the rocky slope and rock out cropping at the base of channels would prevent salmon from surmounting the waterfall at this water level. It is proposed that rocks be removed within areas enclosed by the orange borders.



**Photo 2:** This photo shows the top of the left (looking upstream) channel of the waterfall. The width of the wetted area is approx. 0.5m. Note the rocks on both the left and right channels at the base of the waterfall. These rocks would impede salmon from jumping the waterfall.



**Photo 3:** Photo of rocks at base of the left and right channels of the waterfall.



**Photo 4:** Pool at base of waterfall. Pool is approx. 8m long and 6m wide. The constriction at the lower end of pool is about 2.5m wide. Note rocks in the center of the constriction. This constriction and rocks result in higher water levels in pool during high flows as indicated by the staining of rock walls of pool approximately 1.0-1.5m above water level.



**Photo 5:** Location to place concrete blocks at downstream end of pool to increase water level in pool.



**Photo 6:** Pool at top of waterfall, approx. 5m wide and 0.3m deep. Rocks in pool may interfere with salmon after they jump the waterfall at higher discharge.





**Photo 7:** Crest of waterfall. The stick across left (looking upstream) channel is about 0.5m in length. Flow in channel would be greater at higher river discharge.

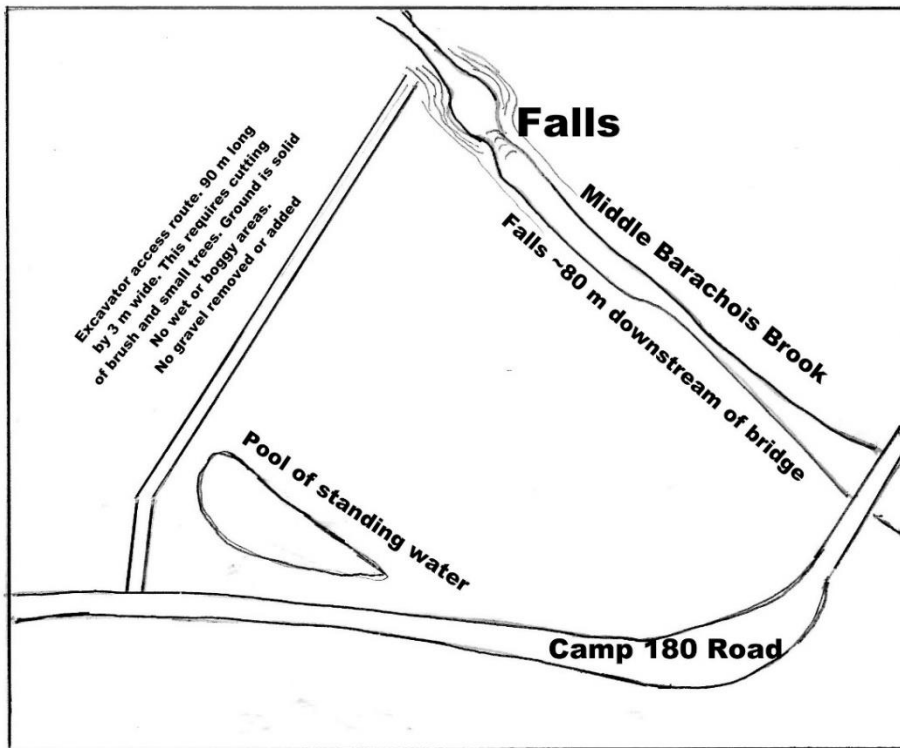
- Attach large scale (e.g. 1:12,500) original base map(s) and/or recent air photos clearly indicating the site location relative to existing communities and transportation facilities, and showing the proposed route of access. The National Topographic Survey edition should be affixed to the map(s).



**Map 1:** Location of Middle Brook upper waterfall, approximately 27 km in a straight line from estuary.



**Map 2:** Location of upper waterfall, Middle Barchois Bk, ~ 80m below bridge on camp 180 resource road.



**Site Plan for remedial work  
Middle Barachois falls**

Map 3: Site plan

**(ii) Physical Features:**

- Describe the major physical features of the undertaking, including buildings, other large structures, roads, pipelines, transmission lines, marine facilities, etc.

The major undertakings include removing a small amount of rock (~ 0.5m<sup>3</sup>) at the base of both the right and left side of the waterfall to improve channels for salmon to surmount the waterfall (see Photo 1). Additionally, we will place two large concrete blocks (6'x2'x2') in a constriction in the brook at the end of pool below the waterfall to raise the water level in the pool and reduce the height of the waterfall that salmon have to jump to surmount the waterfall (see Photos 4 & 5).

- Provide the size of the area to be affected by the undertaking.

20m<sup>2</sup>

- Attach an artist's conceptual drawing, if available.

See photos and maps/plan above.

- Describe the physical and biological environments within the area potentially affected by the project, e.g. topography, water bodies, vegetation, wildlife species, fish etc.

The primary species of interest at this location are Atlantic salmon and brook trout. Please see photos above for additional information on site characteristics.

**(iii) Construction (if applicable):** N/A (see **Operation** for full details)

- Provide the approximate total construction period (if staged, please list each stage and its approximate duration).
- Proposed date of first physical construction related activity on site.
- Describe the potential sources of pollutants during the construction period(s) including airborne emissions, liquid effluents and solid waste materials.
- Describe any potential causes of resource conflicts.

**(iv) Operation:**

- Describe how the undertaking will operate.

The rock at the base of the waterfall would be removed using a manually operated jack hammer and if necessary, using expansion grout. Explosives will not be used. The broken rock will be pushed into the pool below the waterfall. The pool is sufficiently deep that this rock will not interfere with salmon jumping the waterfall or affect water flow below the waterfall.

Two to four large concrete blocks (6'x2'x2') will be strategically lowered into the water at the constriction at the downstream end of the pool by an excavator. There is an eye bolt in each of the concrete blocks assist in lowering and positioning. If for some reason the

blocks have an undesirable effect on salmon migration, the blocks can be removed or repositioned using a cable attached to the eye bolts.

For an excavator to access the site, two culverts on the Camp 180 Resource Road will have to be replaced. The excavator will access the constriction on the north side of the Brook from Camp 180 Resource Road via an old road previous constructed to the constriction. This old road is about 3m wide and about 100m long. The access road is on solid ground and partially over-grown with alders, which the excavator can drive over (see site plan). No soil will have to be removed and no gravel will have to be added. The concrete blocks (owned by a contractor) are on the side of Camp 180 Resource Road about 100m from the proposed access road.

Atlantic salmon will be monitored with a counting fence installed upstream of the waterfall in 2021 and 2022 by the Bay St. George Area South Development Association. A camera has been installed at the waterfall to record when salmon are trying to jump the falls. Funding for the counting fence in 2021 has been approved from the Atlantic Salmon Conservation Foundation.

- Estimated period of operation, if not a permanent facility.

The in-stream operation will be 1-2 day's work, to take place October or November (as early as possible provided permitting is in place and weather permits).

- Describe all potential sources of pollutants during the operating period, including airborne emissions, liquid effluents and solid waste materials.

The excavator will be working above the river (placing concrete blocks), and jackhammers along the falls. There is always the potential that construction equipment could leak fuel, oil, lubricant, or other liquids. The project specifications will require that the contractor develop a spill prevention plan and have appropriate clean up materials on site during the work in case of a spill. As the equipment will not be in-stream, contamination risk is reduced.

- Describe any potential causes of resource conflicts.

None foreseen.

**(v) Occupations:**

- Estimate the number of employees required for the construction and operation of the project as well as the expected duration of employment.

Expected Duration of Employment: 5 (3 for road upgrades, 2 for work at falls)

Estimated Number of Employees (construction and operation): 2

- Provide an enumeration and breakdown of occupations anticipated for this undertaking according to the National Occupational Classification 2006 (<http://www23.hrdc->

drhc.gc.ca/2001/e/generic/welcome.shtml). This information is used to determine if any hazardous occupations are involved.

<b>Occupation</b>	<b>Number of Employees</b>
Construction Foreman	1
Equipment Operator	1

- Identify what work will be carried out by direct hiring and/or contracting out.

The construction contractor will complete road upgrades, jack hammering, and concrete block placement.

- Identify how employment equity will be addressed relative to age and gender (for further information on gender equity, contact the Women's Policy Office at 709-729-5009).

Wherever possible, representation from different groups regarding age and gender will be included in employment. A respectful and equitable environment will be maintained throughout the undertaking of this project, and all employee input will be welcomed, respected, and considered.

**(vi) Project Related Documents:**

- Provide a bibliography of all project-related documents already generated by or for the proponent.
- Provide one copy of any reports on environmental work already performed by or for the proponent.

**APPROVAL OF THE UNDERTAKING**

List the main permits, licenses, approvals and other forms of authorization required for the undertaking, together with the names of the authorities responsible for issuing them (e.g. federal government department, provincial government department, municipal council, etc.)

**SCHEDULE:** Indicate the earliest and latest dates when project construction could commence (assuming all approvals are in place). Briefly state the reasons for the selection of these dates.

The timeline for this project is from October-November 2021. These dates have been approved by DFO to be outside the spawning window for Atlantic salmon in this system, is within the funding period for Coastal Restoration Fund (see below), and just within the construction season for the region.

**FUNDING:** If this project depends upon a grant or loan of capital funds from a government agency (federal, provincial or otherwise) provide the name and address of the department or agency from which funds have been requested. To determine whether cost recovery is

applicable in accordance with the Cost Recovery policy, provide an estimate of the capital costs of the project. Projects having capital costs in excess of \$5 million will be subject to applicable cost recovery fees.

Funding has been secured for the October -November 2021 timeline from DFO under Coastal Restoration Fund. Total cost estimated at \$30,000.00

September 15, 2021

  
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**Date**

**Megan Leslie, President & CEO, WWF-Canada**

*The completed Registration and the digital and paper copies should be sent, together with a covering letter, to: Minister of Municipal Affairs and Environment PO Box 8700 St. John's NL A1B 4J6 Attention: Director of Environmental Assessment*

## **APPENDIX 2**

### **GUIDELINES FOR PREPARING COMPUTERIZED COPIES OF ENVIRONMENTAL ASSESSMENT DOCUMENTS**

Section 3(1) of the Environmental Assessment Regulations authorizes the Minister to require submission of computerized documents. These guidelines are provided to assist proponents with the preparation of such documents.

- The proponent must ensure that all electronic documents are accurate, legible and formatted properly before submission.
- PDF format is preferred, but other format may be accepted.
- The content of the computer file(s) should be identical to the paper copy.
- If multiple files are required, each file should be labelled to reflect its order of appearance in the paper copy (e.g. Registration, Appendix 1 etc)
- For maps, choose a font size for labels and legends that is easily read on screen or in print.
- Present maps in horizontal format to facilitate reading on the screen.
- Label all maps, charts, graphs etc. horizontally.
- Hyperlink headings in Table of Contents (including lists of figures/tables etc) to body of document.
- Hyperlink from references in text to maps/appendices etc.
- Include a single file of the entire document and:
  - if there is a summary, include it as a separate file.
  - where the entire document is a large file, divide it into smaller files.
  - generally file size should not exceed 2-3 MB and no file should exceed 10 MB.
  - avoid numerous small files; instead group them into 2-3 MB file size.
  - for CD ROMs, include instructions for using the CD.