

From: [Schwartz, Todd](#)
To: [Amisk \[CEAA\]](#)
Cc: [Janusz, Richard: DFO](#)
Subject: Draft EIS guidelines for Amisk Hydroelectric Project - DFO Comments
Date: January 25, 2016 8:14:22 PM
Attachments: [DFO EIS comments table Amisk Hydro January 25, 2016.xlsx](#)
[Amisk EIS guidelines DFO Comments Jan 25, 2016.docx](#)
Importance: High

Hello Tawanis,

Attached are DFO's comments on the Amisk Hydroelectric Project. We have provided comments in a word document where larger sections of the DRAFT EIS guidelines were copied and edits made, and the Excel spreadsheet where only those bullets that we made edits to were included. DFO edits are in blue text.

Please feel free to contact me if you have any questions.

Todd Schwartz

Telephone/ Téléphone: 204 983-4231
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Email / Courriel: Todd.Schwartz@dfo-mpo.gc.ca

Fisheries Protection Biologist.	Biologiste, Protection des Pêches
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Government of Canada.	Gouvernement du Canada

For more information on Fish and Fish Habitat and DFO Reviews Visit our Website

www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html

Fisheries and Oceans Canada has changed the way new project proposals (referrals), reports of potential *Fisheries Act* violations (occurrences) and information requests are managed in Central and Arctic Region (Alberta, Saskatchewan, Manitoba, Ontario, Nunavut and the Northwest Territories). Please be advised that general information regarding the management of impacts to fish and fish habitat and self-assessment tools (e.g. Measures to Avoid Harm) that enable you to determine *Fisheries Act* requirements are available at DFO's "Projects Near Water" website at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html. For all occurrence reports, or project proposals where you have determined, following self-assessment, that you cannot avoid impacts to fish and fish habitat, please submit to fisheriesprotection@dfo-mpo.gc.ca. For general inquiries call 1 855 852-8320.

From: Janusz, Richard
Sent: 2016–January-25 6:55 PM
To: Schwartz, Todd
Subject: FW: Draft EIS guidelines for Amisk Hydroelectric Project
Importance: High

Todd,

As per our departmental “Key Decision Points and Authority for...Environmental Assessments...and MPMO Projects,” regarding “Approval of any comments from DFO to the Agency on the EIS guidelines” which specifies that the appropriate “Decision Authority” in this case is the “Senior Fisheries Protection Biologist (BI-03), please note that I have reviewed and approve the comments you provided as attached. Please forward the comments to the Agency.

Thanks,

Richard Janusz

Senior Fisheries Protection Biologist | Biologiste Principal de Protection des Pêches
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From: Schwartz, Todd
Sent: January 25, 2016 6:49 PM
To: Janusz, Richard
Subject: Draft EIS guidelines for Amisk Hydroelectric Project
Importance: High

Rich,

Attached are our comments for the Amisk Hydroelectric Project for the CEAA EIS guidelines. Please let me know if these are suitable for you and I will send them to the project inbox for CEAA.

Todd Schwartz

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Email / Courriel: Todd.Schwartz@dfo-mpo.gc.ca

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Comment ID #	EIS Guidelines Reference	Comment	Reviewer	Link to Section 5 effect	Agency Response
	2.2 Alternative means of carrying out the project	<p>In its alternative means analysis, the proponent will address, at a minimum, the following project components:</p> <ul style="list-style-type: none"> - location of the headworks - fish passage - turbine and spillway mortality 	Todd Schwartz	5(1)(a)(i) Fisheries Act	
	6.1.5. Fish and fish habitat	<input type="checkbox"/> a consideration of project effects on aquatic invasive species of concern in the project effects area	Todd Schwartz	5(1)(a)(i) Fisheries Act	
	6.3.1 Fish and Fish habitat	<p>- The identification of any potential serious harm to fish and fish habitat as defined in the <i>Fisheries Act</i> including the death of fish or any permanent alteration to, or destruction of, fish habitat.</p>	Todd Schwartz	5(1)(a)(i) Fisheries Act	
	6.3.1 Fish and Fish habitat	<p>- The construction of the hydroelectric facility will require a Paragraph 35(2)(b) Authorization under the Fisheries Act, and as such the information requirements outlined in Schedule 1 of the “Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations” and as described in “An Applicant’s Guide to Submitting an Application for Authorization under Paragraph 35(2)(b) of the <i>Fisheries Act</i>” found on DFO’s website at http://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/application-eng.html should be followed with the exception that a Letter of Credit will only be required during the regulatory phase. “Measures to Avoid, Mitigate or Offset Harm to Fish and Fish Habitat” found on DFO’s website http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/offset-harm-dommage-comp-eng.html including Pathways of Effects should be used where appropriate.</p>	Todd Schwartz	5(1)(a)(i) Fisheries Act	

	6.3.1 Fish and Fish habitat	- A detailed assessment of potential serious harm caused by the death and injury to fish from the construction and operation of the hydroelectric facility including: short term impacts from dewatering, diversions, explosives etc. during construction; predicted long term injury and mortality rates from the operation of turbines (e.g. from impacts, shear and barotrauma), spillways (e.g. from impacts, shear and barotrauma), screens (e.g. from impingement), and sluices etc.; and stranding of fish and invertebrates from rapid fluctuations in water levels upstream and downstream of the dam during regular operation or emergency shut downs.	Todd Schwartz	5(1)(a)(i) Fisheries Act	
	6.3.1 Fish and Fish habitat		Todd Schwartz	5(1)(a)(i) Fisheries Act	
	6.3.1 Fish and Fish habitat	- A detailed assessment of the habitats upstream and downstream of the dam potentially impacted by the construction and operation of the hydroelectric facility. All habitats should be mapped to show various layers including: substrates, water depths, and cover components (e.g. boulder garden, woody debris, aquatic vegetation etc.); habitat type (e.g. rapid, run, riffle, pool, backwater etc.); and all habitat functions including spawning, nursery, rearing, feeding and overwintering. All habitats and cover components should be quantified in square meters and % of study area and details and summary statistics should be provided in tables.	Todd Schwartz	5(1)(a)(i) Fisheries Act	
	6.3.1 Fish and Fish habitat	- A detailed assessment of potential serious harm caused by the permanent alteration or destruction of fish habitat including the quantification of any potential habitat loss in terms of surface areas and in relation to watershed availability and significance of each habitat type and function. The assessment will include a consideration of:	Todd Schwartz	5(1)(a)(i) Fisheries Act	
	6.3.1 Fish and Fish habitat	<input type="checkbox"/> the geomorphological changes and their effects on hydrodynamic conditions and fish habitats (e.g. modification of substrates, dynamic imbalance, silting of spawning beds etc.);	Todd Schwartz	5(1)(a)(i) Fisheries Act	
	6.3.1 Fish and Fish habitat	<input type="checkbox"/> the modifications of hydrological and hydraulic conditions on fish habitat and on the fish species' life cycle activities (e.g. spawning, nursery, rearing, feeding migration and overwintering);	Todd Schwartz	5(1)(a)(i) Fisheries Act	

2.2 Alternative means of carrying out the project

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In its alternative means analysis, the proponent will address, at a minimum, the following project components:

- location of the headworks
- fish passage
- turbine and spillway mortality
-

6.1.5. Fish and fish habitat

For potentially affected surface waters:

- fish populations on the basis of species and life stage, abundance, distribution, and movements, including information on the surveys carried out and the source of data available (e.g. location of sampling stations, catch methods, date of catches, species etc.);
- aquatic resources (e.g. benthic communities, aquatic invertebrates, forage species, aquatic plants) in terms of abundance, distribution, general life cycles, movements, and seasonal availability;
- habitat by homogeneous section, including the length of the section, width of the channel from the high water mark (bankful width), water depths, type of substrate (sediments), aquatic and riparian vegetation, and photos;
- in-stream flow needs and habitat preferences for resident fish species in the Peace River;
- natural obstacles (e.g. falls, beaver dams) or existing structures (e.g. water crossings) that hinder the free passage of fish;
- maps, at a suitable scale, indicating the surface area of potential or confirmed fish habitat for spawning, nursery, feeding, overwintering, migration routes, etc. This information should be linked to water depths (bathymetry) to identify the extent of a water body's littoral zone;
- fish or invertebrate species at risk that are known to be present;
- type and location of suitable habitats for fish species at risk that appear on federal and provincial lists and that are found or are likely to be found in the study area; and
- a consideration of project effects on aquatic invasive species of concern in the project effects area

Note that certain intermittent streams or wetlands may constitute fish habitat or contribute indirectly to fish habitat. The absence of fish at the time of the survey does not irrefutably indicate an absence of fish habitat.

6.3.1 Fish and Fish habitat

- The identification of any potential serious harm to fish and fish habitat as defined in the *Fisheries Act* including the death of fish or any permanent alteration to, or destruction of, fish habitat.

- The construction of the hydroelectric facility will require a Paragraph 35 (2)(b) Authorization under the Fisheries Act, and as such the information requirements outlined in Schedule 1 of the "Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations" and as described in "An Applicant's Guide to Submitting an Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act" found on DFO's website at <http://www.dfo-mpo.gc.ca/pnw-ppe/reviews->

[revues/application-eng.html](#) should be followed with the exception that a Letter of Credit will only be required during the regulatory phase. “Measures to Avoid, Mitigate or Offset Harm to Fish and Fish Habitat” found on DFO’s website <http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/offset-harm-dommage-comp-eng.html> including Pathways of Effects should be used where appropriate.

- A detailed assessment of potential serious harm caused by the death and injury to fish from the construction and operation of the hydroelectric facility including: short term impacts from dewatering, diversions, explosives etc. during construction; predicted long term injury and mortality rates from the operation of turbines (e.g. from impacts, shear and barotrauma), spillways (e.g. from impacts, shear and barotrauma), screens (e.g. from impingement), and sluices etc.; and stranding of fish and invertebrates from rapid fluctuations in water levels upstream and downstream of the dam during regular operation or emergency shut downs.

- A detailed assessment of the habitats upstream and downstream of the dam potentially impacted by the construction and operation of the hydroelectric facility. All habitats should be mapped to show various layers including: substrates, water depths, and cover components (e.g. boulder garden, woody debris, aquatic vegetation etc.); habitat type (e.g. rapid, run, riffle, pool, backwater etc.); and all habitat functions including spawning, nursery, rearing, feeding and overwintering. All habitats and cover components should be quantified in square meters and % of study area and details and summary statistics should be provided in tables.

- A detailed assessment of potential serious harm caused by the permanent alteration or destruction of fish habitat including the quantification of any potential habitat loss in terms of surface areas and in relation to watershed availability and significance of each habitat type and function. The assessment will include a consideration of:

the geomorphological changes and their effects on hydrodynamic conditions and fish habitats (e.g. modification of substrates, dynamic imbalance, silting of spawning beds etc.);

the modifications of hydrological and hydraulic conditions on fish habitat and on the fish species’ life cycle activities (e.g. spawning, nursery, rearing, feeding migration and overwintering);

potential impacts on riparian areas that could affect aquatic biological resources and productivity taking into account any anticipated modifications to fish habitat;

any potential imbalances in the food web in relation to baseline;

the potential risk of methylmercury production and accumulation in fish habitat and fish.

the effects of changes to the aquatic environment on fish and their habitat including:

- A detailed assessment of the design of fishways to allow the safe passage of fish upstream and downstream of the dam location. The assessment should include design options considered, fish species passage requirements, design specifications (e.g. attracting flow volumes, weir heights, water depths, water velocity, jump heights, screens, guards or diverters etc.), and predictions of the effectiveness of different design options.

the anticipated changes in the composition and characteristics of the populations of all fish species, included shellfish and forage fish;

any modifications in migration or local movements (e.g. upstream and downstream migration, and lateral movements) following the construction and operation of works (e.g. physical and hydraulic barriers);

any reduction in fish populations as a result of potential additional fishing pressure due to increased access to the project area;

any modifications in use of habitats by federally or provincially listed fish species.

- a discussion of how project construction timing correlates to key fisheries windows (e.g. spawning or other migratory periods), and any potential impacts resulting from overlapping periods;
- a discussion of how vibration caused by blasting may affect fish behaviour, such as spawning or migrations

6.6.3 Cumulative effects assessment

- Identify impacts in addition to other dams on the Peace River