

Progress

I'm checking in on the 76(1) recommendations so that I can give an update to the 76(1). I've also been asked for some more granularity and to include the short term recommendations provided by 76(1) in its early days. I've attached a spreadsheet listing the compiled recommendations as I understand them. There is more detail here than needed but I plan to provide the status/key messages column to the 76(1). Can we find some time this week to go through these together? I'm available tomorrow at 8:30 or 10:30 am.

From: Travis Ritchie <Travis.Ritchie@yec.yk.ca>
Sent: Thursday, June 8, 2023 5:03 PM
To: Kirsten Hogan <kirsten@apertureconsulting.ca>
Cc: Michael Muller <Michael.Muller@yec.yk.ca>
Subject: 76(1)

Progress

Here is an update on the status of implementing the 9 recommendations from the 76(1) Report:

Recommendation ID	Description	Status
76(76(1)
I		
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Due to the timing of the report and our capital budgeting cycle some tasks must be deferred to 2024.

Please let me know if you have any questions.

Regards,

Travis



Travis Ritchie
Director, Risk & Compliance
Telephone: 867-393-5350 | Mobile: 867-333-0300

[Canadian Electricity Association](#)


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SM-YEC-20141008

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From: Kirsten Hogan
To: [Lindsay Rear](#); [Michael Muller](#)
Subject: Re: Fish Entrainment Sensors
Date: August 7, 2023 10:38:29 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

Hi Lindsay,

YEC should own the full data set. We haven't seen the report yet, it is due this week. I can send it to you when we receive it, and I think you can ask EcoFish any questions that you would like. They should be able to tell you if the effort required to answer questions is outside of their WRGS scope.

Kirsten

From: Lindsay Rear <Lindsay.Rear@yec.yk.ca>
Sent: Tuesday, August 1, 2023 12:32 PM
To: Kirsten Hogan <kirsten@apertureconsulting.ca>; Michael Muller <Michael.Muller@yec.yk.ca>
Subject: RE: Fish Entrainment Sensors

Thanks Kirsten.

Can you tell me what study information YEC has ownership over – that is, specifically what level of detail and information can I request from Ecofish to use for our **76(1)** ? EDI will be our consultant managing the study.



Lindsay Rear

Project Manager, Planning & Regulatory Affairs
Telephone: 867-393-5364 | Mobile: 867-334-9133

From: Kirsten Hogan <kirsten@apertureconsulting.ca>
Sent: Thursday, June 22, 2023 9:56 AM
To: Lindsay Rear <Lindsay.Rear@yec.yk.ca>; Michael Muller <Michael.Muller@yec.yk.ca>
Subject: RE: Fish Entrainment Sensors

Hi Lindsay,

I'm not away, I just lost track of this email – sorry for the delay.

I've attached Ecofish's scope and cost estimate. I do not think Ecofish purchased the sensors specifically for YEC.

The best person to contact at Ecofish is Ian Murphy (imurphy@ecofishresearch.com), the project manager for the Hatchery research and the entrainment study.

Thanks,
Kirsten

From: Lindsay Rear <Lindsay.Rear@yec.yk.ca>
Sent: Thursday, June 22, 2023 9:51 AM
To: Kirsten Hogan <kirsten@apertureconsulting.ca>; Michael Muller <Michael.Muller@yec.yk.ca>
Subject: RE: Fish Entrainment Sensors

Hi Michael. As Kirsten is away can you provide me with Ecofish's technical scope and estimated costs for their entrainment study? Or connect me with the technical rep ?

Thanks!



Lindsay Rear

Project Manager, Planning & Regulatory Affairs

Telephone: 867-393-5364 | Mobile: 867-334-9133

From: Lindsay Rear
Sent: Thursday, June 15, 2023 3:39 PM
To: 'kirsten@apertureconsulting.ca' <kirsten@apertureconsulting.ca>
Cc: Michael Muller <Michael.Muller@yec.yk.ca>
Subject: Fish Entrainment Sensors

Hi Kirsten.

I have a question about fish entrainment studies planned for the Whitehorse Rapids. Do you know if Ecofish purchased fish sensors outright for YEC? I'm asking to see if this is equipment we can use for the **76(1)** . There is interest in an entrainment risk assessment, as well as obtained the detailed information on impacts to fish as they travel through the system/penstock.

Thanks.



Lindsay Rear

Project Manager, Planning & Regulatory Affairs

Telephone: 867-393-5364 | Mobile: 867-334-9133

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SM-YEC-20141008

From: [Jessica Hiltz](#)
To: [Kirsten Hogan](#) 76(1)
76(1) [Michael Muller](#); 76(1) 76(1)

Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
76(1)
76(1)
[Escorts - Whitehorse Rapids - Entrainment - DRAFT V1 - 20230808.pdf](#)
76(1)

76(1)

Thank you,
Jessica

Join Zoom Meeting
<https://us06web.zoom.us/j/84125568507?pwd=dINSRloSL1FGeUNZMHBFMHNelBnZz09>
Meeting ID: 841 2556 8507
Passcode: 722007
Find your local number: <https://us06web.zoom.us/u/kd2mxJxsY>

Jessica Hiltz, B.Sc., M.REM
Principal Consultant
Pronouns: She/Her/Hers

ERM
#2700-685 Centre St S | Calgary, AB | T2G 1S5
T: +1 587-293-2465
M: +1 587-216-5248
E: jessica.hiltz@erm.com <<mailto:jessica.hiltz@erm.com>> | W: www.erm.com <<http://www.erm.com>>

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From: Travis Ritchie
To: [Warren Kapaniuk](#)
Cc: [Kirsten Hogan](#); [Michael Muller](#)
Subject: RE: 76(1) comments due Aug.4
Date: August 10, 2023 11:21:28 AM
Attachments: [image001.png](#)

Thanks for the info Warren.

I have asked Kirsten to kindly ensure that Scott is aware that YEC's Environment Department needs to be plugged into planning and operational conversations like these (thanks Kirsten).

Regards,

Travis

From: Warren Kapaniuk <wkapaniuk@ensero.com>
Sent: August 10, 2023 10:08 AM
To: Travis Ritchie <Travis.Ritchie@yec.yk.ca>; Shannon Mallory <Shannon.Mallory@yec.yk.ca>
Subject: FW: 76(1) comments due Aug.4

For hatchery emails, please use Whitehorserapidsfishhatchery@ensero.com

Warren Kapaniuk
Lead Operator
Fish Culturalist



Whitehorse Rapids Fish Hatchery
#21 Selkirk Road
Whitehorse, Yukon Y1A 2V3
P. 867 668 3938

www.ensero.com | wkapaniuk@ensero.com

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From: Warren Kapaniuk
Sent: Thursday, August 10, 2023 8:43 AM
To: Scott Keesey <scott.keesey@gmail.com>; Ian Murphy <imurphy@ecofishresearch.com>; Mel Sheng <mel.sheng@outlook.com>; William Twardek <wtwardek@ecofishresearch.com>; Eric Vogt <evogt@ecofishresearch.com>; Jenna Olsen <jolsen@ecofishresearch.com>; David Petkovich <dpetkovich@ensero.com>; Stephanie Barrett <sbarrett@ensero.com>

Cc: Kirsten Hogan <kirsten@apertureconsulting.ca>

Subject: RE: 76(1) comments due Aug.4

Hello everyone. I can answer a few of the questions ⁷⁶⁽¹⁾ has.

76(1)

For any further clarification, please just ask.

Thanks, Warren

For hatchery emails, please use Whitehorserapidsfishhatchery@ensero.com

Warren Kapaniuk

Lead Operator

Fish Culturalist



Whitehorse Rapids Fish Hatchery

#21 Selkirk Road

Whitehorse, Yukon Y1A 2V3

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From: Scott Keesey <scott.keesey@gmail.com>

Sent: Monday, August 7, 2023 10:22 AM

To: Ian Murphy <imurphy@ecofishresearch.com>; Mel Sheng <mel.sheng@outlook.com>; William Twardek <wtwardek@ecofishresearch.com>; Eric Vogt <evogt@ecofishresearch.com>; Jenna Olsen <jolsen@ecofishresearch.com>; David Petkovich <dpetkovich@ensero.com>; Warren Kapaniuk <wkapaniuk@ensero.com>

Cc: Kirsten Hogan <kirsten@apertureconsulting.ca>

Subject: Fwd: 76(1) comments due Aug.4

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Hi all,

Ian, I know your team is cranking out the Entrainment Study draft today, but I wanted to share these questions from 76(1) about the revised 76(1) memo. I'm also CCing David and Warren at the hatchery, as some of the questions are related to how these 76(1) are or will be implemented. I anticipate some follow up conversations will certainly be warranted, but if there are some low-hanging responses I can return to 76(1) here it would be appreciated.

Thanks,
Scott

----- Forwarded message -----

From: 76(1)

Date: Mon, Aug 7, 2023 at 10:04 AM

Subject: Re: 76(1) comments due Aug.4

To: Scott Keeseey <scott.keeseey@gmail.com>

Cc: Jennifer Herkes <jenherkes@gmail.com>, 76(1)

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From: Kirsten Hogan
To: [Jessica Hiltz](#); [Rana Ghoussainy](#)
Cc: [Michael Muller](#)
Subject: 76(1)
Date: August 11, 2023 11:59:09 AM
Attachments: 76(1)

Good morning,

Please add the attached slides into the deck for August 15th. Michael will speak to these at the meeting.

Kirsten

Kirsten Hogan, M.Sc. (Eng), P.Eng.

[Aperture Consulting Inc.](#)

867.689.9272

403.852.9272

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From: Travis Ritchie
To: [Michael Muller](#)
Cc: [Kirsten Hogan](#)
Subject: RE: 76(1) Aug 15th
Date: August 11, 2023 3:39:28 PM
Attachments: [image001.png](#)
[imageff0b5.PNG](#)
[image72b694.PNG](#)
[image79783f.PNG](#)
[image639768.PNG](#)
[image6dd18d.PNG](#)

My apologies guys. I misread the agenda. It said review “an outline” of the 76(1)
bad

My



Travis Ritchie

Director, Risk & Compliance

Telephone: 867-393-5350 | Mobile: 867-333-0300

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From: Michael Muller <Michael.Muller@yec.yk.ca>
Sent: August 11, 2023 3:12 PM
To: Travis Ritchie <Travis.Ritchie@yec.yk.ca>
Cc: Kirsten Hogan <kirsten@apertureconsulting.ca>
Subject: RE: 76(1) Aug 15th

Hi Travis,

We're a long way off from drafting a 76(1), and look forward to including you in developing YEC input into it.

The attached slides give you a sense of status.

Michael



Michael Muller
Tel: 867-393-5326

From: Travis Ritchie <Travis.Ritchie@yec.yk.ca>
Sent: Friday, August 11, 2023 1:44 PM
To: Kirsten Hogan <kirsten@apertureconsulting.ca>
Cc: Michael Muller <Michael.Muller@yec.yk.ca>
Subject: RE: 76(1) Aug 15th

Hi Kirsten,

Thanks for sharing the agenda.

I am away next week, but will be curious to review the presentation on the preliminary results of the entrainment study.

It would also be great to receive a copy of the 76(1) and review it internally with you and Ensero before formal YEC comments are provided to 76(1) and Ecofish.

I would also like to have a discussion with you about the 76(1) drafting that is going on, which I see from the agenda is part of next week's discussion. I wasn't aware the 76(1) had gotten to the stage yet but feel its important to have some internal YEC discussions with you and others about this aspect of the planning as we go along. If you can provide the revised draft I would appreciate that.

Regarding the 76(1), in addition to what I shared yesterday, I can provide the following additional points about the status of the physical modification recommendations⁷⁶⁽¹⁾ provided (I hope this is enough detail for folks at this point):

- 76(1)

Hope this is helpful to update the 76(1).

Regards,

T

From: Kirsten Hogan <kirsten@apertureconsulting.ca>

Sent: August 10, 2023 1:18 PM

To: Travis Ritchie <Travis.Ritchie@yec.yk.ca>

Cc: Michael Muller <Michael.Muller@yec.yk.ca>

Subject: 76(1) Aug 15th

Hi Travis,

I've attached the agenda for Aug 15th as well as a 76(1) . Michael will be attending the meeting next week instead of me. Let me know if you see anything on the agenda that you think Michael/myself need more information about before the meeting.

Thank you,

Kirsten

Kirsten Hogan, M.Sc. (Eng), P.Eng.

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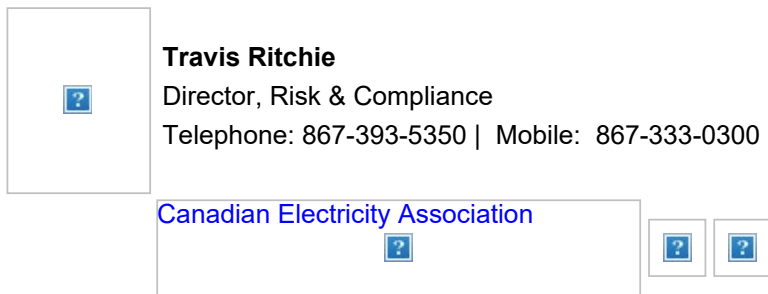
From: Travis Ritchie
To: [Kirsten Hogan](#)
Cc: [Michael Muller](#)
Subject: RE: Draft Submission - 76(1) Fish Entrainment Assessment - Draft
Date: August 11, 2023 6:16:15 PM
Attachments: [image001.png](#)
[image3d7c8b.PNG](#)
[image8f4fff.PNG](#)
[image7d68d5.PNG](#)
[image7e541.PNG](#)
[imagee85e93.PNG](#)

Hi Kirsten,

Had a look at the report. It's a good report. No concerns. My only comment would be to ask if it would be reasonable and appropriate for the authors to discuss what they already knows about the mitigation for turbine mortalities, i.e., the Hatchery, and the appropriateness/suitability of the production numbers we maintain there as mitigation for the estimated mortalities identified in the entrainment study. It may be that we are more than offsetting the mortalities or it may be that we are not, but that is the question that comes immediately to my mind and this information will be necessary for the 76(1) and 76(1)

Thanks.

T



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From: Kirsten Hogan <kirsten@apertureconsulting.ca>
Sent: August 10, 2023 12:38 PM
To: Travis Ritchie <Travis.Ritchie@yec.yk.ca>
Cc: Michael Muller <Michael.Muller@yec.yk.ca>
Subject: FW: Draft Submission - 76(1) Fish Entrainment Assessment - Draft

Hi Travis,

Please review at your earliest convenience. Ecofish is attending the August 15th 76(1) meeting from 10 am – 11 am to present this information. Would you like to attend that presentation?

I know that we will hear questions about WH4 – based on my initial read It looks like the mortality rate through WH4 is double that of the other turbines. Is there something different about this turbine that could be causing increased mortality?

Do you recall the mortality estimate that the hatchery brood stock targets are based on? I have 10% in my head.

Thanks,
Kirsten

From: Scott Keesey <scott.keesey@gmail.com>

Sent: Tuesday, August 8, 2023 3:17 PM

To: L76(1)

Cc: 76(1)

Kirsten Hogan <kirsten@apertureconsulting.ca>; 76(1)

Subject: Fwd: Draft Submission - 76(1)

Fish Entrainment Assessment - Draft

Hello all,

Here is Ecofish's draft V1 of the Entrainment Study Report. If you would prefer a word.doc file to the PDF, please let me know.

Please provide comments by August 26th so Ecofish can finalize the report for their September 9th deadline.

They will be presenting their findings on this study at the August 15th 76(1) meeting.

Regards,
Scott

----- Forwarded message -----

From: **Jenna Olsen** <jolsen@ecofishresearch.com>

Date: Tue, Aug 8, 2023 at 12:09 PM

Subject: Draft Submission - 76(1)

Fish Entrainment Assessment - Draft

To: scott.keesey <scott.keesey@gmail.com>

Cc: Ian Murphy <imurphy@ecofishresearch.com>, William Twardek <wtwardek@ecofishresearch.com>, Eric Vogt <evogt@ecofishresearch.com>

Hi Scott,

We are pleased to submit our draft report of the 76(1)
Assessment.

Fish Entrainment

We look forward to your review and further discussions.

Thank you, to the ⁷⁶⁽¹⁾ and volunteers for their collaboration and contributions to the study!

Cheers,

Jenna Olsen | Project Controller

Office hours 9AM to 2PM as of August 01, 2023⁷⁶



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