

From: Chamberlain, Jon
Sent: Tuesday, January 24, 2023 3:11 PM
To: Thomson, Andrew; McCorquodale, Brenda
Subject: For awareness - publication of CSAS SR on Association between sea lice from Atlantic Salmon farms and sea lice infestations on wild juvenile Pacific Salmon in British Columbia

Follow Up Flag: Follow up
Flag Status: Flagged

Andy/Brenda

The CSAS Science Response on Association between sea lice from Atlantic Salmon farms and sea lice infestations on wild juvenile Pacific Salmon in British Columbia was published last Thursday (January 19 23). The review of the material was completed June 2022.

[Science Response 2022/045 \(dfo-mpo.gc.ca\)](#)

As this was an NHQ led CSAS review the comms and MLs are led by NCR (Marija Curran marija.curran@dfo-mpo.gc.ca) – I do not recall seeing these lines previously but note it has been >6 months since the review.

I have requested a copy of lines to understand designated spokespersons etc.

Additional info - The BCSFA have put out the following press release [Government of Canada science report confirms “No statistically relevant association” regarding sea lice and the production of farmed salmon - BC Salmon Farmers Association](#)

jc

Jon Chamberlain (he/him | il/ lui)
A/Division Manager
Aquatic Diagnostics, Genomics & Technology Division | Division des diagnostics, la génomique, de la technologie aquatique
Fisheries and Oceans Canada | Pêches et Océans Canada
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PO Box 6000, Sidney, BC V8L 4B2 | C.P. 6000, Sidney, (C.-B) V8L 4B2
Telephone/Téléphone: (250) 363-6301
Cell/Cellulaire: (250) 213-7482
Email/Courriel: jon.chamberlain@dfo-mpo.gc.ca



From: Chamberlain, Jon
Sent: Tuesday, January 24, 2023 6:31 PM
To: Thomson, Andrew; McCorquodale, Brenda
Subject: FW: Media lines for sea lice science response
Attachments: ML_CSAS_SeaLice2022_DMO_approved.docx

Follow up with the ML for the CSAS SR. Note this is NHQ led and Jay is identified as point – currently Sunita Khatkar is acting Director.

Jon Chamberlain (he/him | il/ lui)
A/Manager - Aquatic Diagnostics, Genomics & Technology Division
Gestionnaire/A - Division des diagnostics, la génomique, de la technologie aquatique
Cell/Cellulaire: (250) 213-7482

From: Khatkar, Sunita <Sunita.Khatkar@DFO-MPO.GC.CA>
Sent: Tuesday, January 24, 2023 1:58 PM
To: Chamberlain, Jon <Jon.Chamberlain@dfo-mpo.gc.ca>
Subject: FW: Media lines for sea lice science response

Here you go Jon,
Let me know if I can be of any help.

Cheers
Sunita
National Laboratory Manager, NAAHP

DRAFT

Media Lines

CSAS Science Response Process – sea lice 2022

Issue:

DFO Aquaculture Management requested science advice on interactions between sea lice on farmed Atlantic Salmon (*Salmo salar*) and wild salmon populations. A comprehensive risk assessment for Atlantic and Pacific coasts are under development. In the meantime, DFO Science was asked to provide some initial advice in the form of a CSAS Science Response. A Science Response is an efficient way for experts to generate science advice when the scope of the information to be reviewed is narrow, builds upon existing information, and/or when there is a need to provide science advice within a relatively short timeframe. On June 24, 2022, a virtual CSAS Science Response meeting was held. The meeting included participation from DFO science and management experts as well as an academic international expert on sea lice. The resulting CSAS Science Response will be published on DFO's website at a date still TBC.

Media lines:

- The Canadian Science Advisory Secretariat (CSAS) continues to investigate the potential impacts of sea lice on wild Pacific salmon in British Columbia (BC).
- At a virtual meeting, held on June 24, 2022, experts:
 - estimated the number of infective sea lice larvae produced by Atlantic salmon farms in BC under current farm management practices;
 - summarized counts of sea lice on juvenile wild Pacific salmon in BC; and
 - evaluated the association between sea lice infestation on Atlantic salmon farms and sea lice on juvenile wild Pacific salmon populations in BC.
- The study focused on four of the regions in BC where Atlantic salmon farms are located: Clayoquot Sound, Quatsino Sound, Discovery Islands, and the Broughton Archipelago. It found that:
 - Under current farm practices, the number of sea lice present on Atlantic salmon farms was lower during the wild juvenile salmon out-migration window and higher during the non-migration window.
 - For wild salmon collected (i.e. coho and pink), levels of sea lice infestation varied over the years of the study and locations, with relatively higher levels observed in Clayoquot Sound compared to the other three regions.
- The data showed no statistically significant association between sea lice infestations occurring at Atlantic salmon farms and the likelihood of sea lice infestations on wild juvenile coho and pink Pacific salmon migrating in the area of

DRAFT

those farms. The data suggests a positive trend between sea lice on farmed and wild salmon in all four geographic areas studied. However, the data had a high level of natural variability.

- The lack of statistical significance implies that the occurrence of sea lice infestation on wild migrating juvenile coho and pink salmon cannot be explained solely by infestation pressure from Atlantic Salmon farms.
- Comprehensive risk assessments on sea lice for Atlantic and Pacific coasts are under development. The science advice generated from these CSAS meetings will continue to advance Fisheries and Oceans Canada's understanding of the interactions of sea lice in farmed and wild salmon populations, and the management of sea lice on salmon farms.

Questions and Answers

Q1. The last CSAS meeting on sea lice was in 2012. Why has it taken Fisheries and Oceans Canada so long to update its science advice on sea lice?

Fisheries and Oceans Canada has been conducting research on sea lice and their interactions with farmed and wild salmon for many years. We continue to conduct research on many aspects, including interactions, effects, treatments and mitigation. There is an extensive body of science knowledge and research on sea lice that has and continues to be conducted by many researchers internationally. This body of science has been used to develop Fisheries and Oceans Canada's science advice which informs management decisions. To provide the best science advice, we review and incorporate new data and information as it becomes available.

Q2. Why did DFO choose to examine this species of sea lice (*Lepeophtheirus salmonis*) and not others?

While hundreds of species of sea lice occur over a broad geographic distribution and range of host species, the most common species reported on salmonids in BC are *Lepeophtheirus salmonis* and *Caligus clemensi*. Of these two species, *L. salmonis* is larger and more commonly responsible for host damage caused by attachment and feeding activities and is therefore the focus of management.

Q3. When will the results of each CSAS meetings be made publicly available?

The science advice generated from CSAS meetings is compiled into science reports. Once those reports are ready for publishing, they are made publicly available on the CSAS website.

Departmental spokes: Jay Parsons, Director, Aquaculture, Biotechnology and Aquatic Animal Health Science Branch

Communications contact: Hilary Prince, A/Senior Communications Advisor

From: Chamberlain, Jon
Sent: Thursday, January 26, 2023 2:30 PM
To: Thomson, Andrew; McCorquodale, Brenda
Subject: FW: Sea Lice CSAS - [REDACTED]
Attachments: A-2022-00378 Sea lice Science Response edited to reverse conclusions.pdf; A-2022-00378-Jeong mar 9 2022 .pdf

Attachments not included in this email
Attachment found in the next email chain

Follow Up Flag: Follow up
Flag Status: Flagged

Andy and Brenda

For awareness – this just in. [REDACTED] is now emailing Simon Jones directly [REDACTED]
[REDACTED] Note distribution is to broad range of recipients.

I am talking with Simon shortly.

jc

Jon Chamberlain (he/him | il/ lui)
A/Manager - Aquatic Diagnostics, Genomics & Technology Division
Gestionnaire/A - Division des diagnostics, la génomique, de la technologie aquatique
Cell/Cellulaire: (250) 213-7482

From: Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>
Sent: Thursday, January 26, 2023 11:12 AM
To: Chamberlain, Jon <Jon.Chamberlain@dfo-mpo.gc.ca>; Lowe, Geoff <Geoff.Lowe@dfo-mpo.gc.ca>
Subject: FW: Sea Lice CSAS - [REDACTED]

fyi

From: [REDACTED]
Sent: Thursday, January 26, 2023 10:59 AM
To: Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>
Cc: CSAS / SCCS (DFO/MPO) <DFO.CSAS-SCCS.MPO@dfo-mpo.gc.ca>; C&A CSA / CAS C&A (DFO/MPO) <DFO.CACSA-CASCA.MPO@dfo-mpo.gc.ca>; ken.mcdonald@parl.gc.ca; mel.arnold@parl.gc.ca; lisamarie.barron@parl.gc.ca; ken.hardie@parl.gc.ca; crawford.revie@strath.ac.uk; science@canada.ca; Larry Dill <ldill@sfu.ca>; [REDACTED] <[REDACTED]>; Minister / Ministre (DFO/MPO) <DFO.Minister-Ministre.MPO@dfo-mpo.gc.ca>; [REDACTED]; Don Svanvik <Don.Svanvik@namgis.bc.ca>; Darren Blaney <darren.blaney@homalco.com>; [REDACTED]; Jeong, Jaewoon <Jaewoon.Jeong@dfo-mpo.gc.ca>; [REDACTED]
Subject: Sea Lice CSAS - [REDACTED]

Dr. Simon Jones:

Jan 24, 2023, the BC Salmon Farmers Association released the Canadian Science Advisory Secretariat Science Response (CSAS) titled **Sea lice on Atlantic Salmon farms and wild Pacific Salmon in British Columbia**. This report communicated that sea lice on salmon farms are an insignificant risk to young wild salmon

The advisory's conclusion states:

"No statistically significant association was observed between infestation pressure attributable to Atlantic salmon farms and the probability of L. salmonis [salmon louse] infestations on wild juvenile Chum and Pink salmon in Clayoquot Sound, Quatsino Sound, Discovery Islands and Broughton Archipelago." P-23

Issues aside with the clumsy design ignoring the proven unreliability of fish farm industry data* and whether the young wild salmon examined had even been exposed to salmon farms, your name appears on an earlier version of this paper which states the opposite result.

March 9, 2022 a draft paper was attached to an internal DFO email sent to you titled **"Modeling The Association of Sea Louse Infections Between Farmed Atlantic Salmon and Juvenile Pacific Salmon in Coastal British Columbia"**. It states:

*"The models suggested that in Clayoquot Sound between 2016 and 2021, both the occurrence and prevalence of L. salmonis infection on wild migrating juvenile chum salmon is influenced by sufficiently high copepodid [larval stage lice] infection pressures **derived from farmed Atlantic salmon.**"*

May 19, 2022 another draft paper with the same title was sent to you with edits, including edits by you and Jay Parsons, where all reference to impact by salmon farms is removed to read:

*"The analysis suggests that the occurrence of L. salmonis infection on wild migrating juvenile pink and chum salmon **could not be explained by infection pressure of farm-sourced copepodids.**"*

You claim in your comment that you do not understand the following sentence:

~~*"is influenced by sufficiently high copepodid infection pressure derived from farmed Atlantic salmon..."*~~

And someone crossed out this sentence giving the paper the opposite conclusion that salmon farms are *not* responsible for the devastating sea lice outbreaks reported on by major Canadian universities, BC research stations and [REDACTED]

Senior DFO official, Jay Parsons, also provided comment on this edited manuscript making it clear he understood the original results - that high lice infection in salmon farms were linked to lice infection in wild salmon. He asks:

*"Do we want to say anything about management implications... these findings **support efforts to reduce sea lice numbers during the outmigration period to minimise risk to wild salmon**"*

I also found the table sent to you with highly significant p-values indicating a significant link exists between farm and wild sea louse infections. This means the phrase *No statistically significant association* which appears in the CSAS released by the BC Salmon Farmers cannot be true.

s.19(1)

And yet you, Jay Parsons and senior DFO Aquaculture Management and "Regulatory Science" staff signed off on *both* versions under the authority of the **Canadian Science Advisory Secretariat**.

The public version of this work, done in your lab, shields the salmon farming industry from responsibility for the infection and harm done to young wild salmon that are exposed to salmon farms.

I have attached the March 9 and the May 19 versions, the final CSAS version can be found on the BC

Salmon Farmers Association website: <https://bcsalmonfarmers.ca/news/government-of-canada-science-report-confirms-no-statistically-relevant-association-regarding-sea-lice-and-the-production-of-farmed-salmon/>

I view the edits to this CSAS as

*http://seangodwin.org/Godwinetal_2021_EA.pdf

s.19(1)

From: Thomson, Andrew
Sent: Thursday, January 26, 2023 5:14 PM
To: Reid, Rebecca; McPherson, Arran
Cc: McCorquodale, Brenda; King, Rhea L; Proctor, Jody
Subject: RE: Heads Up - Accusations by [REDACTED] by DFO science staff
Attachments: A-2022-00378 Sea lice Science Response edited to reverse conclusions.pdf; A-2022-00378-Jeong mar 9 2022 .pdf

My apologies, I somehow neglected to include the attachments to the original email. These have the background that [REDACTED] is referring to.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: Thomson, Andrew
Sent: Thursday, January 26, 2023 11:42 AM
To: Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>
Cc: McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; King, Rhea L <Rhea.King@dfo-mpo.gc.ca>; Proctor, Jody <Jody.Proctor@dfo-mpo.gc.ca>
Subject: Heads Up - Accusations by [REDACTED] by DFO science staff

Rebecca / Arran

[REDACTED] has written to Dr. Simon Jones, and copied a number of MPs and others, [REDACTED] with respect to the recently released CSAS report on Sea Lice. We will develop some background material but wanted to ensure you're aware given the likelihood of media attention and questions.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: [REDACTED]
Sent: Thursday, January 26, 2023 10:59 AM
To: Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>
Cc: CSAS / SCCS (DFO/MPO) <DFO.CSAS-SCCS.MPO@dfo-mpo.gc.ca>; C&A CSA / CAS C&A (DFO/MPO) <DFO.CACSA-CASCA.MPO@dfo-mpo.gc.ca>; ken.mcdonald@parl.gc.ca; mel.arnold@parl.gc.ca; lisamarie.barron@parl.gc.ca; ken.hardie@parl.gc.ca; crawford.revie@strath.ac.uk; science@canada.ca; Larry Dill <ldill@sfu.ca>; [REDACTED] <[REDACTED]> Minister / Ministre (DFO/MPO) <DFO.Minister-Ministre.MPO@dfo-mpo.gc.ca>; [REDACTED]; Don Svanvik <Don.Svanvik@namgis.bc.ca>; Darren Blaney <darren.blaney@homalco.com>; [REDACTED]; Jeong, Jaewoon <Jaewoon.Jeong@dfo-mpo.gc.ca>; [REDACTED]
Subject: Sea Lice CSAS - [REDACTED]

s.19(1)

Dr. Simon Jones:

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The public version of this work, done in your lab, shields the salmon farming industry from responsibility for the infection and harm done to young wild salmon that are exposed to salmon farms.

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I view the edits to this CSAS as

[REDACTED]

[REDACTED]

*http://seangodwin.org/Godwinetal_2021_EA.pdf

From: Jeong, Jaewoon
Sent: Thursday, May 19, 2022 10:18 AM
To: Mimeault, Caroline; Parsons, Jay; Price, Derek; Siemens, Lisa; Johnson, Stewart;
Jones, Simon
Subject: sea lice document for today meeting
Attachments: Analyses by area (chum and pink combined).docx

Hello all,

I share this document for the sea lice update meeting later today.

Jaewoon

MODELING THE ASSOCIATION OF SEA LICE, *Lepeophtheirus salmonis*, INFECTIONS BETWEEN FARMED ATLANTIC SALMON (*Salmo salar*) AND JUVENILE PACIFIC SALMON IN COASTAL BRITISH COLUMBIA

Jaewoon Jeong, Derek Price, Stewart C. Johnson, Caroline Mimeault, Lisa Siemens, G. Jay Parsons, Simon R. M. Jones*

Fisheries and Oceans Canada
Pacific Biological Station
Nanaimo, BC, V9T 6N7 Canada
simon.jones@dfo-mpo.gc.ca

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The salmon louse (*Lepeophtheirus salmonis*) is an important pest of marine-reared Atlantic salmon. In British Columbia, conservation of wild salmon is a primary driver for salmon louse management as a condition of license for farmed Atlantic salmon. To minimize risk to juvenile wild salmon, an average of three motile sea lice per fish must not be exceeded during pre-migration and outmigration immediately prior to and during the period of wild-Pacific salmon outmigration seasons. Compliance with this threshold is established through systematic parasite sea lice counts conducted by industry and through audits conducted by Fisheries and Oceans Canada's (DFO)'s Aquaculture Management Division. In addition, sea lice data on juvenile wild salmon are collected by industry. The goal of this research was to define the strength of association between sea lice levels on farmed and wild salmon through the analysis of public sea lice counts on Atlantic salmon farms and on juvenile wild salmon data.

The study focused on

Data from four coastal regions (Broughton Archipelago, Clayoquot Sound, Quatsino Sound, Discovery (Vancouver Islands), collected between 2016 and 2021, and weekly which included sea lice counts from 14 farm observations from between 54 and 70 farms per year and from 18 wild salmon collected during out migrations sites between 2016 and 2021, and the seaway distances between farms and sampling sites were used in our analysis. The number of farm level output of infective copepodids released at the farm level was estimated from numbers of adult female lice sea lice by sequential application of previously published temperature or salinity dependent models. Standardized infection pressure values derived from copepodid numbers and connectivity of farms were used in a mixed-effects logistic regression model and a mixed-effects linear regression model, each with a seven-day time lag to test the probability of occurrence of infection (model 1) and of non-zero prevalence (model 2) on juvenile pink or chum salmon. In all regions the logistic model revealed a statistically insignificant initial increase in the probability of infection on wild salmon with increasing infection pressure copepodid output which plateaued at intermediate to high farm output levels (Fig. 1a). The linear model showed a direct relationship between farm output and prevalence on chum salmon (Fig. 1b).

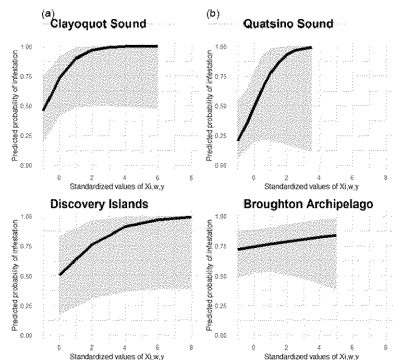


Figure 1. For BC coastal regions Clayoquot Sound between 2016 and 2021, the relationships between the standardized *L. salmonis* farm output pressure ($X_{i,ws,y}$) on (a) the predicted probability of infestation on chum salmon (Clayoquot, Quatsino) or pink salmon and chum salmon (Discovery, Broughton), and (b) the predicted probability of non-zero prevalence on chum salmon. Grey areas represent 95% CI about the prediction line (black).

The analysis The models suggested that in Clayoquot Sound between 2016 and 2021, both the occurrence and prevalence of *L. salmonis* infection on wild migrating juvenile pink or chum salmon could not be explained by infection pressure of farm-sourced copepodids. This work, including refinements to the present model, will inform efforts to manage farm-based sea lice to minimize risks to migrating juvenile wild salmon in BC. is influenced by only sufficiently high copepodid infection pressures derived from farmed Atlantic salmon. The absence of hydrodynamic and wild salmon migratory data confers some uncertainty to model outputs, and suggests directions for further model refinement.

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Commented [JS1]: This isn't clear to me maybe Derick can help?

Commented [PJ2]: Do we want to say anything about management implications - ...these findings will provide insight to management measure to limit sea lice during out migration...or these findings support efforts to reduce sea lice numbers during the outmigration period to minimise risk to wild salmon.

Sent: March 9, 2022 5:28 PM

To: Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>; Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>; Johnson, Stewart <Stewart.Johnson@dfo-mpo.gc.ca>; Price, Derek <Derek.Price@dfo-mpo.gc.ca>; 'Lisa.Siemens@dfo-mpo.gc.ca' <Lisa.Siemens@dfo-mpo.gc.ca>; Mimeault, Caroline <Caroline.Mimeault@dfo-mpo.gc.ca>

Subject: Document for tomorrow meeting (update on sea lice)

Hello all,

I analyzed the association between sea lice from salmon farms and prevalence on wild fish in Clayoquot Sound between 2016 and 2021. I am going to talk about that with the attached document tomorrow. See you tomorrow!

Jaewoon

MODELING ASSOCIATION OF *Lepeophtheirus salmonis* INFECTIONS BETWEEN FARMED ATLANTIC SALMON (*Salmo salar*) AND JUVENILE PACIFIC SALMON IN COASTAL BRITISH COLUMBIA

Jaewoon Jeong, Derek Price, Stewart C. Johnson, Caroline Mimeault, Lisa Siemens, Jay Parsons, Simon R. M. Jones*

Fisheries and Oceans Canada
Pacific Biological Station
Nanaimo, BC, V9T 6N7 Canada
simon.jones@dfo-mpo.gc.ca

The salmon louse (*Lepeophtheirus salmonis*) is an important pest of marine-reared Atlantic salmon. In British Columbia, conservation of wild salmon is a primary driver for salmon louse management as a condition of license. To minimize risk to wild salmon, an average of 3 motile lice must not be exceeded during pre-migration and outmigration seasons. Compliance with this threshold is established through systematic parasite counts conducted by industry and through audits conducted by DFO. In addition, lice data on juvenile wild salmon are collected by industry. The goal of this research was to define the strength of association between lice levels on farmed and wild salmon through the analysis of public data.

The number of infective copepodids released at the farm level was estimated from numbers of adult female lice by sequential application of previously published temperature or salinity dependent models. Output of these models was applied to data obtained from Clayoquot Sound (Vancouver Island) between 2016 and 2021, which included 14 farms and 18 wild salmon collection sites, and the seaway distances between farms and sampling sites. A mixed-effects logistic regression model and a mixed-effects linear regression model each used a 7-day time lag to test the probability of infection (model 1) and of non-zero prevalence (model 2) on juvenile chum salmon. The logistic model revealed an initial increase in probability of infection with copepodid output which plateaued at intermediate to high farm output levels (Fig. 1a). The linear model showed a direct relationship between farm output and prevalence on chum salmon (Fig 1b)

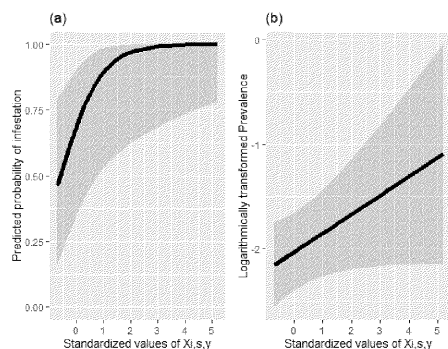


Figure 1. For Clayoquot Sound between 2016 and 2021, the relationships between the standardized *L. salmonis* farm output pressure ($X_{i,s,y}$) on (a) the predicted probability of infestation on chum salmon, and (b) the predicted probability of non-zero prevalence on chum salmon. Grey areas represent 95% CI about the prediction line (black).

The models suggested that in Clayoquot Sound between 2016 and 2021, both the occurrence and prevalence of *L. salmonis* infection on wild migrating juvenile chum salmon is influenced by sufficiently high copepodid infection pressures derived from farmed Atlantic salmon. The absence of hydrodynamic and wild salmon migratory data confers some uncertainty to model outputs, and suggests directions for further model refinement.

From: Thomson, Andrew
Sent: Thursday, January 26, 2023 6:06 PM
To: Chamberlain, Jon
Subject: RE: Sea Lice CSAS - [REDACTED]

Thanks, Jon can you work with comms to develop some media lines.

I think we will need a response to the likely question as to how does the findings of the draft unreleased paper relate to the CSAS review.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: Chamberlain, Jon <Jon.Chamberlain@dfo-mpo.gc.ca>
Sent: Thursday, January 26, 2023 2:56 PM
To: Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; Morin, David <David.Morin@dfo-mpo.gc.ca>
Subject: RE: Sea Lice CSAS - [REDACTED]

Update:

- Simon [REDACTED]
- He has no interest in engaging or responding to the message – I have asked him to let me know if his position on this changes.
- I advised that it is likely there will be further emails coming in on this topic [REDACTED] and asked that he forward these to me.
- I also advised that it is likely the letter will be posted [REDACTED] which will broaden the potential readership.

Given this likely broad distribution, I think it might be worthwhile to include Simon on the request I put forward for a general risk assessment on safety/security.

- The issues raised in [REDACTED] email appear to be misguided and probably a result of mistakenly inferring linkages and drawing incomplete conclusions from various documents released through ATIP 2022-00378 last year.
- [REDACTED] suggests that the two documents referenced in her email (released under ATIP 2022-00378) are an early version of the recently released CSAS Science Response titled Sea lice on Atlantic Salmon farms and wild Pacific Salmon in British Columbia.
- [REDACTED] suggests that the tracked changes/edits and comments in these documents demonstrate [REDACTED]
- In actual fact, the two documents are draft/developmental versions of a word limited abstract for presentation at the Aquaculture Canada meeting in St. John's last year. The comments and edits are the various authors discussing how to best articulate their work within a very limited word-count space.
- Ultimately – the paper was not presented at the conference (late approvals meant that Dr Jones was not able to make arrangements to attend) and as such this work does not appear in the conference program (<https://wasblobstorage.blob.core.windows.net/meeting-abstracts/WANA2022AbstractsBook.pdf>)
- While it could be argued this was all part of the same broad sea lice study – it will be important to reflect on the purpose and intent of the discussions and to what end the material was being developed.

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s.21(1)(b)

We need to move the dial here to be able to provide a safe environment for our scientists to be able to have frank and open discussions with each other without fear that these situations will arise. There is a notable and worrying chilling effect on such dialogue spreading across the Branch as awareness of these types of events

spreads.

I have every confidence in the work and integrity of Simon and his team and see the comments from [REDACTED] as having no merit. I would note again that it is highly irregular that a member of the public should be writing directly to government scientists in this way and that [REDACTED]

I will put some thought to recommendations on next steps to discuss with you.

jc

Jon Chamberlain (he/him | il/ lui)

A/Manager - Aquatic Diagnostics, Genomics & Technology Division

Gestionnaire/A - Division des diagnostics, la génomique, de la technologie aquatique

Cell/Cellulaire: (250) 213-7482

From: Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>

Sent: Thursday, January 26, 2023 11:35 AM

To: Chamberlain, Jon <Jon.Chamberlain@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; Morin, David <David.Morin@dfo-mpo.gc.ca>

Subject: RE: Sea Lice CSAS - [REDACTED]

I don't think that Simon should respond to [REDACTED] I do think we can expect questions as a result of her accusations, so we should develop a response to the accusations that we could use for internal briefings and potentially comms material. We will also advise up.

David: See below, [REDACTED] and including Jay Parsons in that.

Andrew J L Thomson

Regional Director Science | Directeur régionale des sciences

From: Chamberlain, Jon <Jon.Chamberlain@dfo-mpo.gc.ca>

Sent: Thursday, January 26, 2023 11:30 AM

To: Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>

Subject: FW: Sea Lice CSAS - [REDACTED]

s.19(1)

s.21(1)(b)

Andy and Brenda

For awareness – this just in. [REDACTED] is now emailing Simon Jones directly suggesting [REDACTED]
[REDACTED] Note distribution is to broad range of recipients.

I am talking with Simon shortly.

jc

Jon Chamberlain (he/him | il/ lui)
A/Manager - Aquatic Diagnostics, Genomics & Technology Division
Gestionnaire/A - Division des diagnostics, la génomique, de la technologie aquatique
Cell/Cellulaire: (250) 213-7482

From: Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>
Sent: Thursday, January 26, 2023 11:12 AM
To: Chamberlain, Jon <Jon.Chamberlain@dfo-mpo.gc.ca>; Lowe, Geoff <Geoff.Lowe@dfo-mpo.gc.ca>
Subject: FW: Sea Lice CSAS - [REDACTED]

fyi

From: [REDACTED]
Sent: Thursday, January 26, 2023 10:59 AM
To: Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>
Cc: CSAS / SCCS (DFO/MPO) <DFO.CSAS-SCCS.MPO@dfo-mpo.gc.ca>; C&A CSA / CAS C&A (DFO/MPO) <DFO.CACSA-CASCA.MPO@dfo-mpo.gc.ca>; ken.mcdonald@parl.gc.ca; mel.arnold@parl.gc.ca; lisamarie.barron@parl.gc.ca; ken.hardie@parl.gc.ca; crawford.revie@strath.ac.uk; science@canada.ca; Larry Dill <ldill@sfu.ca>; [REDACTED]
[REDACTED]; Minister / Ministre (DFO/MPO) <DFO.Minister-Ministre.MPO@dfo-mpo.gc.ca>; [REDACTED]; Don Svanvik <Don.Svanvik@namgis.bc.ca>; Darren Blaney <darren.blaney@homalco.com>; [REDACTED]
[REDACTED] Jeong, Jaewoon <Jaewoon.Jeong@dfo-mpo.gc.ca>; [REDACTED]
Subject: Sea Lice CSAS - breach of scientific ethics

Dr. Simon Jones:

Jan 24, 2023, the BC Salmon Farmers Association released the Canadian Science Advisory Secretariat Science Response (CSAS) titled **Sea lice on Atlantic Salmon farms and wild Pacific Salmon in British Columbia**. This report communicated that sea lice on salmon farms are an insignificant risk to young wild salmon

The advisory's conclusion states:

"No statistically significant association was observed between infestation pressure attributable to Atlantic salmon farms and the probability of L. salmonis [salmon louse] infestations on wild juvenile Chum and Pink salmon in Clayoquot Sound, Quatsino Sound, Discovery Islands and Broughton Archipelago." P-23

Issues aside with the clumsy design ignoring the proven unreliability of fish farm industry data* and whether the young wild salmon examined had even been exposed to salmon farms, your name appears on an earlier version of this paper which states the opposite result.

March 9, 2022 a draft paper was attached to an internal DFO email sent to you titled **"Modeling The Association of Sea Louse Infections Between Farmed Atlantic Salmon and Juvenile Pacific Salmon in Coastal British Columbia"**. It states:

"The models suggested that in Clayoquot Sound between 2016 and 2021, both the occurrence and prevalence of L. salmonis infection on wild migrating juvenile chum salmon is influenced by sufficiently high copepodid [larval stage lice] infection pressures derived from farmed Atlantic salmon."

May 19, 2022 another draft paper with the same title was sent to you with edits, including edits by you and Jay Parsons, where all reference to impact by salmon farms is removed to read:

*“The analysis suggests that the occurrence of *L. salmonis* infection on wild migrating juvenile pink and chum salmon **could not be explained by infection pressure of farm-sourced copepodids.***

You claim in your comment that you do not understand the following sentence:

~~*“is influenced by sufficiently high copepodid infection pressure derived from farmed Atlantic salmon...”*~~

And someone crossed out this sentence giving the paper the opposite conclusion that salmon farms are *not* responsible for the devastating sea lice outbreaks reported on by major Canadian universities, BC research stations and [REDACTED]

Senior DFO official, Jay Parsons, also provided comment on this edited manuscript making it clear he understood the original results - that high lice infection in salmon farms were linked to lice infection in wild salmon. He asks:

*“Do we want to say anything about management implications... these findings **support efforts to reduce sea lice numbers** during the outmigration period **to minimise risk to wild salmon**”*

I also found the table sent to you with highly significant p-values indicating a significant link exists between farm and wild sea louse infections. This means the phrase *No statistically significant association* which appears in the CSAS released by the BC Salmon Farmers cannot be true.

And yet you, Jay Parsons and senior DFO Aquaculture Management and “Regulatory Science” staff signed off on *both* versions under the authority of the **Canadian Science Advisory Secretariat**.

The public version of this work, done in your lab, shields the salmon farming industry from responsibility for the infection and harm done to young wild salmon that are exposed to salmon farms.

I have attached the March 9 and the May 19 versions, the final CSAS version can be found on the BC Salmon Farmers Association website: <https://bcsalmonfarmers.ca/news/government-of-canada-science-report-confirms-no-statistically-relevant-association-regarding-sea-lice-and-the-production-of-farmed-salmon/>

I view the edits to this CSAS as [REDACTED]
[REDACTED]
[REDACTED]

*http://seangodwin.org/Godwinetal_2021_EA.pdf

s.19(1)

From: Thomson, Andrew
Sent: Thursday, January 26, 2023 6:15 PM
To: Morrisette, Eric
Cc: Chamberlain, Jon
Subject: Sea lice issue
Attachments: RE: Heads Up - Accusations by [REDACTED] by DFO
science staff; RE: Heads Up - Accusations [REDACTED]
by DFO science staff

Apologies Eric, should have copied you on these. I expect media interest in a sea lice issue that [REDACTED] has raised about accusations against one of our Scientists.

Hoping your team can work with Jon C to develop some media lines.

Thanks

s.19(1)

From: Thomson, Andrew
Sent: Thursday, January 26, 2023 6:03 PM
To: Reid, Rebecca; McPherson, Arran
Cc: McCorquodale, Brenda; King, Rhea L; Proctor, Jody
Subject: RE: Heads Up - Accusations [REDACTED] by DFO science staff

Arran / Rebecca

Some background from Simon on the allegations from [REDACTED]

- The issues raised in [REDACTED] email appear to be misguided and probably a result of mistakenly inferring linkages and drawing incomplete conclusions from various documents released through ATIP 2022-00378 last year.
- [REDACTED] suggests that the two documents referenced in her email (released under ATIP 2022-00378) are an early version of the recently released CSAS Science Response titled Sea lice on Atlantic Salmon farms and wild Pacific Salmon in British Columbia.
- [REDACTED] suggests that the tracked changes/edits and comments in these documents demonstrate "[REDACTED]"
- In actual fact, the two documents are draft/developmental versions of a word limited abstract for presentation at the Aquaculture Canada meeting in St. John's last year. The comments and edits are the various authors discussing how to best articulate their work within a very limited word-count space.
- Ultimately – the paper was not presented at the conference as Dr Jones was not able to make arrangements to attend and as such this work does not appear in the conference program (<https://wasblobstorage.blob.core.windows.net/meeting-abstracts/WANA2022AbstractsBook.pdf>)
- While it could be argued this was all part of the same broad sea lice study – it will be important to reflect on the purpose and intent of the discussions and to what end the material was being developed.

We have asked Simon as to his reaction to the email:

- Simon [REDACTED]
- He has no interest in engaging or responding to the message , we have asked him to let me know if his position on this changes.
- We advised that it is likely there will be further emails coming in on this topic ([REDACTED]) and asked that he forward these to me.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: Thomson, Andrew
Sent: Thursday, January 26, 2023 2:14 PM
To: Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>
Cc: McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; King, Rhea L <Rhea.King@dfo-mpo.gc.ca>; Proctor, Jody <Jody.Proctor@dfo-mpo.gc.ca>
Subject: RE: Heads Up - Accusations [REDACTED] by DFO science staff

My apologies, I somehow neglected to include the attachments to the original email. These have the background that [REDACTED] is referring to.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: Thomson, Andrew
Sent: Thursday, January 26, 2023 11:42 AM
To: Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>
Cc: McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; King, Rhea L <Rhea.King@dfo-mpo.gc.ca>; Proctor, Jody <Jody.Proctor@dfo-mpo.gc.ca>
Subject: Heads Up - Accusations by [REDACTED] by DFO science staff

Rebecca / Arran

[REDACTED] has written to Dr. Simon Jones, and copied a number of MPs and others, with claims of [REDACTED] with respect to the recently released CSAS report on Sea Lice. We will develop some background material but wanted to ensure you're aware given the likelihood of media attention and questions.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: [REDACTED]
Sent: Thursday, January 26, 2023 10:59 AM
To: Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>
Cc: CSAS / SCCS (DFO/MPO) <DFO.CSAS-SCCS.MPO@dfo-mpo.gc.ca>; C&A CSA / CAS C&A (DFO/MPO) <DFO.CACSA-CASCA.MPO@dfo-mpo.gc.ca>; ken.mcdonald@parl.gc.ca; mel.arnold@parl.gc.ca; lisamarie.barron@parl.gc.ca; ken.hardie@parl.gc.ca; crawford.revie@strath.ac.uk; science@canada.ca; Larry Dill <ldill@sfu.ca>; [REDACTED]; [REDACTED]; Minister / Ministre (DFO/MPO) <DFO.Minister-Ministre.MPO@dfo-mpo.gc.ca>; [REDACTED]; Don Svanvik <Don.Svanvik@namgis.bc.ca>; Darren Blaney <darren.blaney@homalco.com>; [REDACTED]; [REDACTED]; Jeong, Jaewoon <Jaewoon.Jeong@dfo-mpo.gc.ca>; [REDACTED]
Subject: Sea Lice CSAS - [REDACTED]

Dr. Simon Jones:

Jan 24, 2023, the BC Salmon Farmers Association released the Canadian Science Advisory Secretariat Science Response (CSAS) titled **Sea lice on Atlantic Salmon farms and wild Pacific Salmon in British Columbia**. This report communicated that sea lice on salmon farms are an insignificant risk to young wild salmon

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Issues aside with the clumsy design ignoring the proven unreliability of fish farm industry data* and whether the young wild salmon examined had even been exposed to salmon farms, your name appears on an earlier version of this paper which states the opposite result.

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~~“is influenced by sufficiently high copepodid infection pressure derived from farmed Atlantic salmon...”~~

And someone crossed out this sentence giving the paper the opposite conclusion that salmon farms are *not* responsible for the devastating sea lice outbreaks reported on by major Canadian universities, BC research stations and [REDACTED]

Senior DFO official, Jay Parsons, also provided comment on this edited manuscript making it clear he understood the original results - that high lice infection in salmon farms were linked to lice infection in wild salmon. He asks:

*“Do we want to say anything about management implications... these findings **support efforts to reduce sea lice numbers** during the outmigration period **to minimise risk to wild salmon**”*

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And yet you, Jay Parsons and senior DFO Aquaculture Management and “Regulatory Science” staff signed off on *both* versions under the authority of the **Canadian Science Advisory Secretariat**.

The public version of this work, done in your lab, shields the salmon farming industry from responsibility for the infection and harm done to young wild salmon that are exposed to salmon farms.

I have attached the March 9 and the May 19 versions, the final CSAS version can be found on the BC Salmon Farmers Association website: <https://bcsalmonfarmers.ca/news/government-of-canada-science-report-confirms-no-statistically-relevant-association-regarding-sea-lice-and-the-production-of-farmed-salmon/>

I view the edits to this CSAS as [REDACTED]

*http://seangodwin.org/Godwinetal_2021_EA.pdf

s.19(1)

From: Chamberlain, Jon
Sent: Thursday, January 26, 2023 11:55 PM
To: Thomson, Andrew
Subject: RE: Data request: recent sea louse "Science Response"

Andy

I have asked.

My assumption would be that #1, #2, and #4 are industry supplied data. While we probably have them on hand they were not collected by Science.

It looks like #3 are derived estimates that Science will have had a hand in developing.

To add to the considerations regarding the request for these data – and the code used to perform the analyses – within the next few days; I would add that Simon noted today that he is lead on a primary publication that presents these data and analyses. The manuscript is going through internal review now prior to MRF submission next week and then sent to an appropriate journal. As you are aware, under normal ATIP request circumstances we would defer release of the requested information until publication. This doesn't have the appearance of normal circumstances. However, if possible I would like to try very hard to create conditions such that Simon et al. are able to get a publication out of their work.

Thanks
jc

Jon Chamberlain (he/him | il/ lui)
A/Manager - Aquatic Diagnostics, Genomics & Technology Division
Gestionnaire/A - Division des diagnostics, la génomique, de la technologie aquatique
Cell/Cellulaire: (250) 213-7482

From: Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>
Sent: Thursday, January 26, 2023 11:17 AM
To: Chamberlain, Jon <Jon.Chamberlain@dfo-mpo.gc.ca>
Subject: FW: Data request: recent sea louse "Science Response"

Are any of these data science holdings?

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

s.19(1)

From: [REDACTED]
Sent: Thursday, January 26, 2023 11:15 AM
To: Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; McCorquodale, Brenda
<Brenda.McCorquodale@dfo-mpo.gc.ca>
Cc: [REDACTED]
[REDACTED] martin.krkosek <martin.krkosek@utoronto.ca>; John Reynolds
<reynolds@sfu.ca>; Sean Godwin [REDACTED] Gideon Mordecai <[REDACTED]>
Subject: Data request: recent sea louse "Science Response"

Dear Andy Thompson and Brenda McCorquodale,

(cc others)

I am writing regarding the recent sea-louse-focused Science Response Report (2022/045), with which both DFO Science and Aquaculture Management were heavily involved.

Given that this work has obvious policy implications for DFO's ongoing open-net pen transition process – and that one of the four proposed objectives of the transition plan is trust and transparency – **I am hereby formally requesting a copy of the data analyzed in the above mentioned Science Response.**

The Government of Canada and DFO regularly remind us that they are committed to full and open access to data whenever possible. I understand that some of the associated data (total stocking numbers on BC salmon farms) are considered confidential industry information. Without comment on that position (or the fact that such data have been released in the past), I specifically request all the other raw data, so that colleagues and I will be able to recreate the analyses in the Science Response Report.

The data we request include (but need not be limited to) the following, *in a usable format* (i.e. raw, cleaned data with associated metadata in an excel file, csv file, or similar):

1. the farm- and week-specific sea louse totals (both *L. salmonis* overall and, in particular, adult female counts),
2. the associated temperature and salinity data that fed into analysis of the louse count data in 1.,
3. the associated farm- and week-specific infectious copepodid modelled estimates, AND
4. the detailed industry sea louse counts from wild juvenile salmon.

Given the time-sensitive nature of this request, I would ask that it be filled in a timely manner – i.e. within five business days. The data should all be in hand, given that the analyses have now been released publicly.

I would further request any and all code used to perform analyses of the above data. Please, however, *do not let this secondary request delay provision of the data themselves.*

Sincerely,



Pacific Salmon Foundation

s.19(1)

From: Thomson, Andrew
Sent: Monday, January 30, 2023 9:07 AM
To: Chamberlain, Jon; Jones, Simon
Subject: FW: Heads Up - Accusations [REDACTED] by DFO science staff

Fyi

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

From: "Morin, David" <David.Morin@dfo-mpo.gc.ca>
Date: 2023-01-30 6:00 a.m. (GMT-08:00)
To: "Parsons, Jay" <Jay.Parsons@dfo-mpo.gc.ca>
Cc: "Thomson, Andrew" <Andrew.Thomson@dfo-mpo.gc.ca>, "McPherson, Arran" <Arran.McPherson@dfo-mpo.gc.ca>
Subject: RE: Heads Up - Accusations [REDACTED] by DFO science staff

Hello Jay and thanks for the context.

Regards,
David

From: Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>
Sent: Monday, January 30, 2023 8:46 AM
To: Morin, David <David.Morin@dfo-mpo.gc.ca>
Subject: RE: Heads Up - Accusations [REDACTED] by DFO science staff
Importance: High

s.19(1)

David,

Apologies for the delay – I needed to check out a couple of things with staff first.

There are a number of inaccuracies and misinformation in the various emails and press releases on this recent media story about the release of the CSAS SR.

AMD (NCR and Pacific Region) asked for science advice and a sea lice risk assessment on impacts to all species of Pacific salmon for all salmon farming areas in BC as part of the annual call for CSAS advice in 2021. They asked for this advice as soon as possible to help inform upcoming departmental management decisions and considerations around conditions of license. We could not commit to providing the full risk assessment by end of spring/early summer 2022, but we committed to try and provide some priority interim advice by early summer 2022 (the association analysis) and then to be followed up by the full risk assessment afterwards (for 2023).

The association analysis was a team effort by our NCR risk assessment team, Pac Sci researchers and AMD Pacific (their epidemiologist). The CSAS SR consisted of three parts – an analysis of on farm sea lice numbers, wild fish sea lice numbers and the association analysis. Because this was a priority, time sensitive request, we

were working on the draft report at the same time that we were still undertaking the analysis and developing the modelling approach for the association analysis. This meant that there were several early draft versions of the report that were developed that did not reflect the final analyses nor the final version of the model runs. It is only the final version of the model runs that reflect the final correct assumptions and model validation and verifications. And it is these analyses that are included in the final CSAS SR. Working on and refining a number of drafts is a normal part of how science is conducted, especially when a number of team members are involved. In parallel, Simon was leading the development of a potential abstract for the AAC on this work, that also went through a couple of interactions based on comments from the team and based on the limitations of abstract word counts, etc. This abstract was not submitted or presented in the end. It appears that some early drafts of some of these documents were released as part of an ATIP.

Allegations of [REDACTED] are completely untrue, inaccurate and unfounded. I find the tenor of the emails and press release [REDACTED] We addressed a priority request from AMD in the most timely manner possible, followed best scientific practices to prepare the advice and followed all CSAS practices to finalise the advice to met the needs of the client.

If you have any more specific questions on any of the many incorrect allegations raised in the two emails, happy to discuss further.

Jay

From: Morin, David <David.Morin@dfo-mpo.gc.ca>
Sent: Thursday, January 26, 2023 10:32 PM
To: Parsons, Jay <Jay.Parsons@dfo-mpo.gc.ca>
Subject: FW: Heads Up - Accusations by [REDACTED] by DFO science staff

Hi Jay,

Can we connect in the morning.

Thanks,
David

From: McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>
Sent: Thursday, January 26, 2023 7:57 PM
To: Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; King, Rhea L <Rhea.King@dfo-mpo.gc.ca>; Morin, David <David.Morin@dfo-mpo.gc.ca>
Cc: Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; Proctor, Jody <Jody.Proctor@dfo-mpo.gc.ca>
Subject: Re: Heads Up - Accusations by [REDACTED] by DFO science staff

Thanks Andy. I have also requested the full release package from ATIP.

David, I think we need to merge the below with something from your side regarding Jay's role in providing comments. Will you have something on that in the morning?

Rhea, I will make sure you also get a copy of the ATIP in the event there is a link to the CSAS in some of the other records.

s.19(1)

s.21(1)(b)

I have seen the NR come out and expect the Dept will be asked to comment.

Arran McPherson
DFO-MPO

On Jan 26, 2023, at 6:03 PM, Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca> wrote:

Arran / Rebecca

Some background from Simon on the allegations from [REDACTED]

1. The issues raised in [REDACTED] email appear to be misguided and probably a result of mistakenly inferring linkages and drawing incomplete conclusions from various documents released through ATIP 2022-00378 last year.
2. [REDACTED] suggests that the two documents referenced in her email (released under ATIP 2022-00378) are an early version of the recently released CSAS Science Response titled Sea lice on Atlantic Salmon farms and wild Pacific Salmon in British Columbia.
3. [REDACTED] suggests that the tracked changes/edits and comments in these documents demonstrate [REDACTED]
4. In actual fact, the two documents are draft/developmental versions of a word limited abstract for presentation at the Aquaculture Canada meeting in St. John's last year. The comments and edits are the various authors discussing how to best articulate their work within a very limited word-count space.
5. Ultimately – the paper was not presented at the conference as Dr Jones was not able to make arrangements to attend and as such this work does not appear in the conference program (<https://wasblobstorage.blob.core.windows.net/meeting-abstracts/WANA2022AbstractsBook.pdf>)
6. While it could be argued this was all part of the same broad sea lice study – it will be important to reflect on the purpose and intent of the discussions and to what end the material was being developed.

We have asked Simon as to his reaction to the email:

s.19(1)

7. Simon [REDACTED]
8. He has no interest in engaging or responding to the message , we have asked him to let me know if his position on this changes.
9. We advised that it is likely there will be further emails coming in on this topic [REDACTED]
[REDACTED] and asked that he forward these to me.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: Thomson, Andrew

Sent: Thursday, January 26, 2023 2:14 PM

To: Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>

Cc: McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; King, Rhea L

<Rhea.King@dfo-mpo.gc.ca>; Proctor, Jody <Jody.Proctor@dfo-mpo.gc.ca>

Subject: RE: Heads Up - Accusations [REDACTED] by DFO science staff

My apologies, I somehow neglected to include the attachments to the original email. These have the background that [REDACTED] is referring to.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: Thomson, Andrew

Sent: Thursday, January 26, 2023 11:42 AM

To: Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; McPherson, Arran <Arran.McPherson@dfo-mpo.gc.ca>

Cc: McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; King, Rhea L <Rhea.King@dfo-mpo.gc.ca>; Proctor, Jody <Jody.Proctor@dfo-mpo.gc.ca>

Subject: Heads Up - Accusations [REDACTED] t by DFO science staff

Rebecca / Arran

[REDACTED] has written to Dr. Simon Jones, and copied a number of MPs and others, with claims of

[REDACTED] with respect to the recently released CSAS report on Sea Lice. We will develop some background material but wanted to ensure you're aware given the likelihood of media attention and questions.

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: [REDACTED]

Sent: Thursday, January 26, 2023 10:59 AM

To: Jones, Simon <Simon.Jones@dfo-mpo.gc.ca>

Cc: CSAS / SCCS (DFO/MPO) <DFO.CSAS-SCCS.MPO@dfo-mpo.gc.ca>; C&A CSA / CAS C&A (DFO/MPO) <DFO.CACSA-CASCA.MPO@dfo-mpo.gc.ca>; ken.mcdonald@parl.gc.ca; mel.arnold@parl.gc.ca; lisamarie.barron@parl.gc.ca; ken.hardie@parl.gc.ca; crawford.revie@strath.ac.uk; science@canada.ca; Larry Dill <ldill@sfu.ca>; [REDACTED]

[REDACTED]; Minister / Ministre (DFO/MPO) <DFO.Minister-Ministre.MPO@dfo-mpo.gc.ca>; [REDACTED]; Don Svanvik <Don.Svanvik@namgis.bc.ca>; Darren Blaney <darren.blaney@homalco.com>; [REDACTED]

[REDACTED]; Jeong, Jaewoon <Jaewoon.Jeong@dfo-mpo.gc.ca>; [REDACTED]

Subject: Sea Lice CSAS - breach of scientific ethics

s.19(1)

Dr. Simon Jones:

Jan 24, 2023, the BC Salmon Farmers Association released the Canadian Science Advisory Secretariat Science Response (CSAS) titled **Sea lice on Atlantic Salmon farms and wild Pacific Salmon in British Columbia**. This report communicated that sea lice on

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"No statistically significant association was observed between infestation pressure attributable to Atlantic salmon farms and the probability of L. salmonis [salmon louse] infestations on wild juvenile Chum and Pink salmon in Clayoquot Sound, Quatsino Sound, Discovery Islands and Broughton Archipelago." P-23

Issues aside with the clumsy design ignoring the proven unreliability of fish farm industry data* and whether the young wild salmon examined had even been exposed to salmon farms, your name appears on an earlier version of this paper which states the opposite result.

March 9, 2022 a draft paper was attached to an internal DFO email sent to you titled **"Modeling The Association of Sea Louse Infections Between Farmed Atlantic Salmon and Juvenile Pacific Salmon in Coastal British Columbia"**. It states:


"The models suggested that in Clayoquot Sound between 2016 and 2021, both the occurrence and prevalence of L. salmonis infection on wild migrating juvenile chum salmon is influenced by sufficiently high copepodid [larval stage lice] infection pressures derived from farmed Atlantic salmon."

May 19, 2022 another draft paper with the same title was sent to you with edits, including edits by you and Jay Parsons, where all reference to impact by salmon farms is removed to read:

*"The analysis suggests that the occurrence of L. salmonis infection on wild migrating juvenile pink and chum salmon **could not be explained by infection pressure of farm-sourced copepodids.**"*

You claim in your comment that you do not understand the following sentence:

~~"is influenced by sufficiently high copepodid infection pressure derived from farmed Atlantic salmon..."~~

And someone crossed out this sentence giving the paper the opposite conclusion that salmon farms are *not* responsible for the devastating sea lice outbreaks reported on by major Canadian universities, BC research stations and 

Senior DFO official, Jay Parsons, also provided comment on this edited manuscript making it clear he understood the original results - that high lice infection in salmon farms were linked to lice infection in wild salmon. He asks:

s.19(1)

*"Do we want to say anything about management implications... these findings **support efforts to reduce sea lice numbers during the outmigration period to minimise risk to wild salmon**"*

I also found the table sent to you with highly significant p-values indicating a significant link exists between farm and wild sea louse infections. This means the phrase *No statistically significant association* which appears in the CSAS released by the BC Salmon

Farmers cannot be true.

And yet you, Jay Parsons and senior DFO Aquaculture Management and “Regulatory Science” staff signed off on *both* versions under the authority of the **Canadian Science Advisory Secretariat**.

The public version of this work, done in your lab, shields the salmon farming industry from responsibility for the infection and harm done to young wild salmon that are exposed to salmon farms.

I have attached the March 9 and the May 19 versions, the final CSAS version can be found on the BC Salmon Farmers Association website: <https://bcsalmonfarmers.ca/news/government-of-canada-science-report-confirms-no-statistically-relevant-association-regarding-sea-lice-and-the-production-of-farmed-salmon/>

I view the edits to this CSAS as



*http://seangodwin.org/Godwinetal_2021_EA.pdf

s.19(1)

Thomson, Andrew 1/26 2:15 PM
Jon., have you been in contact with Simon on [REDACTED] email. As expected the questions from on high have started.

1/26 2:15 PM
i am drafting response right this moment - do i have 10?

Thomson, Andrew 1/26 2:15 PM
you have more time than that if you need it.

1/26 2:16 PM
no worries - i'm a quick typer.

1/26 2:30 PM
OK - slightly longer....

1/26 2:59 PM
done and back with you. Somewhat linked -> Kyle is [REDACTED]

Thomson, Andrew 1/26 3:08 PM
Yes, I imagine so.

Thomson, Andrew 1/26 6:49 PM
Is the dif between sea lice papers that the csas was about many sites and the aqua Canada paper about only some?

1/26 9:49 PM
The CSAS report conclusions align with the May 19 2022 version of the Aqua Canada abstract>

The earlier version of the Aqua Canada Abstract (March 9 2022) that was developed while analysis was still underway presents a different conclusion.

I will find out tomorrow if the change is due to increasing the number of data points (areas) or if there were modifications to the Clayoquot analysis as the study advanced.

Friday, January 27, 2023

s.19(1)



Thomson, Andrew Monday 12:28 PM

I have a call at 12:45 with Arran.. Any thing new on the Simon Jones sea lice issue?

Monday 12:34 PM

As far as i am aware Simon has not received any further correspondence.

You have description of events from myself and you saw Jay's similar description.

I am trying to bring comms onboard with the fact that there are two parallel sea lice issues on the go - I have just written to Lauren Girdler with the following:

It got complicated last week! There are two parallel issues being considered at present on this file.

1. The CSAS Science Response that was released a couple of weeks ago. MLs are good and NHQ is lead.

2. Dr Simon Jones has received the attached message from [REDACTED] which is critical of the CSAS Science Response AND goes on to suggest that material she has reviewed from a recent ATIP release suggests there has been [REDACTED]

My understanding is that Eric and team had been asked to look into and develop responses for the issues raised in #2 above. If this is not the case do let me know.

The ADM has expressed concern with some of the responses that have been sent up.



Thomson, Andrew Monday 12:38 PM

Arran had asked... I have looked at the abstract. Is the difference that the CSAS looked at many sites and this abstract was only clayquot sound?

Monday 12:39 PM

i am told no.

There was an evolution in the analysis which led to a result of positive but non-significant.

I specifically asked if the the non-significant result was because of more data/areas being included (thus taking out area specific trends) - and was told that wasn't the case. It was the updated modelling/analysis.

Does that provide the level of clarity you need here?

...And back to ADM's concerns with how we are responding to a stack of letters including the original [REDACTED] Would be good to understand how we may focus messaging on these.

The [REDACTED] and other recent correspondence (including form letters) are all targetting CSAS process and Science integrity.

s.19(1)



Thomson, Andrew Monday 12:48 PM

will ask

From: Thomson, Andrew
Sent: Monday, January 30, 2023 4:32 PM
To: Chamberlain, Jon
Subject: FW: Academic scientists' critique of DFO Science Response Report 2022/045
Attachments: Academic scientists' critique of DFO Science Response Report 2022_045.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: [REDACTED]
Sent: Monday, January 30, 2023 1:27 PM
To: Minister / Ministre (DFO/MPO) <DFO.Minister-Ministre.MPO@dfo-mpo.gc.ca>; [REDACTED]; Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>
Cc: Chris Darimont <[REDACTED]>; Lawrence Dill <ldill@sfu.ca>; [REDACTED]; [REDACTED]; Frommel, Andrea <andrea.frommel@ubc.ca>; Sean Godwin <[REDACTED]>; Hinch, Scott <scott.hinch@ubc.ca>; Martin Krkosek <[REDACTED]>; Mark Lewis <marklewis@uvic.ca>; Jonathan Moore <jwmoore@sfu.ca>; Gideon Mordecai <[REDACTED]>; Sarah P. Otto <otto@zoology.ubc.ca>; [REDACTED]; [REDACTED] Michael Price <michael_price_2@sfu.ca>; John Reynolds <reynolds@sfu.ca>; [REDACTED]
Subject: Academic scientists' critique of DFO Science Response Report 2022/045

Dear Minister,

Please find, in attachment, a letter signed by 16 professors and research scientists (cc'd), in which we detail our concerns with the recent sea louse Science Response Report (2022/045).

Given the extremely short amount of time until your impending decision on the Discovery Island salmon farm licenses, we have taken the unusual step of escalating this issue to your attention directly. We have, however, also addressed in this email relevant senior DFO staff: Rebecca Reid, Brenda McCorquodale, and Andy Thompson - more usual recipients of such concerns.

Further, we hereby request a meeting with relevant decision makers *as soon as possible*, to discuss the serious concerns we raise.

Sincerely,

[REDACTED]
Pacific Salmon Foundation
on behalf of all signees

s.19(1)

January 30, 2023

The Honourable Joyce Murray
Minister of Fisheries, Oceans and the Canadian Coast Guard
House of Commons
Ottawa, Ontario,
Canada K1A0A6

Academic scientists' critique of DFO Science Response Report 2022/045

Dear Minister,

We are a group of 16 professors and research scientists who, collectively, have extensive research expertise in fisheries, epidemiology, and the environmental consequences of aquaculture. We write to express our professional dismay at serious scientific failings in a recently published DFO Science Response Report (#2022/045) about sea lice on salmon farms and wild salmon in BC. We are deeply concerned with the report's flaws and its main, unsupported conclusion: that the presence of parasitic sea lice on wild juvenile salmon is not significantly associated with sea lice from nearby salmon farms.

In fact, a simple analysis of the report's own results indicates an *overall significant association between infestation pressure attributable to Atlantic Salmon farms and the probability of *L. salmonis* infestations on wild juvenile chum and pink salmon* (details below).

We, the undersigned, have cumulatively published over 1500 peer-reviewed scientific papers, serve or have served on over 30 editorial boards of scientific journals, include five Fellows of the Royal Society of Canada, and have many decades of experience in science advice processes across levels of government. We note this so that it will not be taken lightly when we say that this report falls *far* short of the standards of credible independent peer review and publishable science.

In addition to technical flaws, we have serious concerns about the processes that generated this report. The report was written by employees of DFO Aquaculture Management and Aquaculture Science and was externally reviewed by one industry-associated professor. This does not constitute independent peer review. Furthermore, the report appears to rely on selective reporting of non-significant statistical results (see below). Finally, there are over 30 peer-reviewed scientific papers from BC that link sea lice on wild juvenile salmon with salmon farms, and many more papers internationally. Despite some of these being cited in the report, none were integrated into the report's conclusions.

Pages 36 to / à 79
are public-denied pursuant to section
est public-refusé en vertu de l'article

68(a)

of the Access to Information Act
de la Loi sur l'accès à l'information

From: Thomson, Andrew
Sent: Tuesday, January 31, 2023 11:17 AM
To: Chamberlain, Jon
Subject: FW: sea louse Science Response Report (2022/045)
Attachments: Misleading_the_Minister.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

FYI

Andrew J L Thomson
Regional Director Science | Directeur régionale des sciences

From: [REDACTED]
Sent: Tuesday, January 31, 2023 7:29 AM
To: Minister / Ministre (DFO/MPO) <DFO.Minister-Ministre.MPO@dfo-mpo.gc.ca>
Cc: [REDACTED] Reid, Rebecca <Rebecca.Reid@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>; Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; [REDACTED] Chris Darimont <[REDACTED]>; Larry Dill <ldill@sfu.ca>; Frommel, Andrea <andrea.frommel@ubc.ca>; Sean Godwin <[REDACTED]>; Hinch, Scott <scott.hinch@ubc.ca>; Martin Krkosek <[REDACTED]>; Mark Lewis <marklewis@uvic.ca>; Jonathan Moore <jwmoore@sfu.ca>; Gideon Mordecai <[REDACTED]>; Sarah P. Otto <otto@zoology.ubc.ca>; Stephanie Peacock <[REDACTED]>; Michael Price <michael_price_2@sfu.ca>; John Reynolds <reynolds@sfu.ca>; [REDACTED]
[REDACTED]

Subject: sea louse Science Response Report (2022/045)

Dear Minister,

The attached short essay, titled "Misleading the Minister" may also be of interest. It takes a slightly broader scientific and historical perspective than the letter you received yesterday from [REDACTED] and others, including me.

At least half of the signers of our letter are scientists of such distinction that if the Fisheries Research Board (FRB) still existed - you may recall that the FRB had input at the cabinet level - they would be obvious candidates to serve on that board. I hope you will meet with them.

Sincerely,
[REDACTED]

s.19(1)

On Jan 30, 2023, at 11:26 AM, [REDACTED] wrote:

Dear Minister,

Please find, in attachment, a letter signed by 16 professors and research scientists (cc'd), in which we detail our

concerns with the recent sea louse Science Response Report (2022/045).

Given the extremely short amount of time until your impending decision on the Discovery Island salmon farm licenses, we have taken the unusual step of escalating this issue to your attention directly. We have, however, also addressed in this email relevant senior DFO staff: Rebecca Reid, Brenda McCorquodale, and Andy Thompson - more usual recipients of such concerns.

Further, we hereby request a meeting with relevant decision makers *as soon as possible*, to discuss the serious concerns we raise.

Sincerely,



Pacific Salmon Foundation
on behalf of all signees

<Academic scientists' critique of DFO Science Response Report 2022_045.pdf>

s.19(1)

How Canada's Department of Fisheries and Oceans (DFO) misleads its Minister

by [REDACTED]

(This essay may be freely copied and re-published provided it is reproduced in its entirety.)

Canada's Minister of Fisheries and Oceans is always a politician rather than a scientist, and must rely on DFO for scientific advice in the making of policy. Such advice often comes in the form of reports from the Canadian Science Advisory Secretariat (CSAS), an organization internal to DFO. The latest report from CSAS, titled *Association between sea lice from Atlantic salmon farms and sea lice infestations on juvenile wild Pacific salmon in British Columbia (Science Response 2022/045)* is an example of how salmon aquaculture interests in DFO can mislead the Minister as well as the general public. The data used in the report are stocking levels of Atlantic salmon farms, lice levels on those farmed salmon, and lice levels on out-migrating juvenile wild salmon. The data may be excellent (although it is impossible to be sure because it has not been shared with independent scientists), but the analysis and conclusions are problematic in ways that ought to be deeply disturbing to Canadians.

The conclusion of the CSAS report includes the statement "No statistically significant association was observed between infestation pressure attributable to Atlantic Salmon farms and the probability of *L. salmonis* infestations on wild juvenile Chum and Pink salmon in [BC waters]." The Minister, a non-scientist, might reasonably interpret such a statement to mean that sea lice from salmon farms are not a threat to wild Pacific salmon. Certainly that was the interpretation taken by media loyal to salmon aquaculture. The headline at *Global Seafood Alliance* was "Findings confirm that sea lice infestations on wild migrating juvenile wild salmon not associated with BC salmon farms." The headline at *Aquaculture North America* was "DFO confirms sea lice not associated with farmed salmon." It would be naive to expect that the articles following such headlines did not generate numerous emails and letters to the Minister.

The CSAS report has many technical inadequacies—a few of them will be examined below—but those inadequacies are all overshadowed by an error so glaringly obvious that it can reasonably be regarded as intentional. The root of the error is the misuse of the quantity referred to by statisticians as a *P*-value, as well as the phrase *statistical significance*. In the context of the CSAS report, the *P*-value for each region is the probability that levels of sea lice infestation on wild juvenile salmon equal to, or greater than, the observed levels, could occur by chance if they were truly unrelated to farmed salmon; and *lack of statistical significance* means that the *P*-value is greater than five percent. In 2016 the American Statistical Association (ASA) published a statement (the first such statement in its then 177-year history) urging scientists to avoid both *P*-values and the notion of statistical significance because they are so frequently misinterpreted. The ASA statement was widely publicized in the most respected scientific journals. The authors of the CSAS report cannot possibly have been unaware of it, and yet their report uses *P*-values and statistical significance in precisely the way that the ASA admonished scientists to avoid. The conclusion of the CSAS report states "No statistically significant association was observed between infestation pressure attributable to Atlantic Salmon farms and the probability of *L. salmonis* infestations on wild juvenile [salmon]." The authors of the CSAS report surely knew that this sentence could easily be misinterpreted by the Minister and that the sentence would be seized on by non-scientific media to confuse the public, thus generating further pressure on the Minister.

Wasserstein and Nazar, the authors of the ASA statement, were clear and emphatic about the type of error made in the CSAS report; they wrote "*P*-values do not measure the probability that the studied hypothesis is true, or the probability that the data were produced by random chance alone," and "A *P*-value, or statistical significance, does not measure the size of an effect or the importance of a result." They suggested the use of alternative methods such as confidence, credibility or prediction intervals. To their credit, the authors of the CSAS report included confidence intervals in their report (a standard procedure in science), and if they had stopped there, or better yet, combined the confidence intervals, the other shortcomings of their report could be more easily overlooked. Its serious shortcomings include the following:

(i) Use of a mathematical model with very low resolution. Instead of analyzing sea lice abundance data (average levels of lice on juvenile wild salmon) and prevalence data (the fraction of wild salmon with one or more lice), the authors of the CSAS report analyzed the prevalence of non-zero prevalence; thus much valuable information was discarded. The authors surely knew that better methods were available in the scientific literature (methods from the Krkošek research group at the University of Toronto, for example) and that the method they chose had failed to obtain a significant result in an earlier study of sea lice in Muchalat Inlet.

(ii) The assumption that juvenile wild salmon were infested at the location where they were sampled. Thus lice levels on juvenile salmon that had *not* migrated past farms were treated the same as levels on juvenile wild salmon that had already migrated past a farm. Such a procedure is almost certain to underestimate the effect of a farm.

(iii) Lack of meaningful peer review. All but one author is employed by DFO to promote aquaculture in one way or another; the remaining author is a university scientist who is often funded by salmon farming interests in DFO and industry.

(iv) Selective exclusion of relevant scientific results. There are many peer-reviewed papers in respected scientific journals documenting the detrimental effects of sea lice from salmon farms on wild salmonids. Only a few of those are mentioned.

For a more detailed scientific criticism of the CSAS report, see the open letter to the Minister by [REDACTED] and fifteen other non-DFO scientists. The letter is titled *Academic scientists' critique of DFO Science Response Report 2022/045*.

In situations like this it is helpful to take a broad scientific perspective. Sea lice are only one of the many parasites and pathogens unintentionally promoted by salmon farming. The total effect of all such pathogens and parasites, as well as other practices in salmon farming, can be estimated by *meta-analysis*, a method that combines results for different species and regions in order to randomize factors that cannot be measured or controlled. In 2008, Jennifer Ford and Ransom Myers of Dalhousie University published such a meta-analysis in the respected journal *PLoS Biology*, finding "a reduction in survival or abundance of [salmonids] in association with increased production of farmed salmon. In many cases, these reductions in survival or abundance are greater than 50%." Another test of the total effects of salmon farms on wild salmon can be obtained by fallowing the farms to see whether wild salmon survival is improved. In fact, such an experiment was carried out in the Broughton Archipelago in 2003, and the result was a dramatic improvement in survival—see, for example, Figure 6(b) in the 2013 paper by Jennifer Peacock and others, published in *Ecological Applications*.

It is also useful to take a historical perspective. As an organization within DFO, CSAS is a lineal descendant of CAFSAC, whose 1986 reports and advice to the Minister resulted in the near-extirpation of the Northern cod (*Gadus morhua*), an economic and biological disaster that DFO has never managed to live down. Every Canadian should know this story, and the best place to read it is the scholarly paper by Jeff Hutchings, Carl Walters and Richard Haedrich, published in the *Canadian Journal of Fisheries and Aquatics* in 1997. Briefly, CAFSAC's estimates of northern cod population levels were deeply flawed, but CAFSAC management downplayed the scientific uncertainty of those estimates despite the earnest entreaties of its own scientists. (It went so far as to officially reprimand one of its scientists who was candid with the public.) At the time, the reasoning behind the stock estimates in the CAFSAC reports was characterized by Dr. George Winters, then Head of DFO's Pelagic Fish, Shellfish, and Marine Mammals Division, Newfoundland Region, as *non gratum anus rodentum*, a Latin phrase with an obvious translation. I have no doubt that if Dr. Winters were still at work and were asked to evaluate the recent CSAS report he would not hesitate to use the same words.

Are the authors of the CSAS report to blame for the sad situation outlined above? No, not even a little bit. They were all hired to promote aquaculture in one way or another, and they have earned their pay by doing their best to avoid casting salmon aquaculture in a negative light. The problem is with DFO, whose system for translating science into policy is as broken now as it was in 1986. Put simply, science does not work when bureaucrats can tell scientists what to find or who to work with outside their own organization. The remedies proposed in 1997 by Hutchings, Walters and Haedrich are still worth considering. If action is not taken soon, Canada's stocks of Pacific salmon will almost certainly suffer the fate of the northern cod.

Biographical Note:

s.19(1)

From: Chamberlain, Jon
Sent: Tuesday, January 31, 2023 3:03 PM
To: McCorquodale, Brenda; Morin, David
Cc: Thomson, Andrew; Davis, Neil
Subject: RE: Data request: recent sea louse "Science Response"

Thanks Brenda – and to clarify, Science NHQ would be lead here. CSAS SR was developed in NHQ and should have all relevant holdings.

jc

Jon Chamberlain (he/him | il/ lui)
A/Manager - Aquatic Diagnostics, Genomics & Technology Division
Gestionnaire/A - Division des diagnostics, la génomique, de la technologie aquatique
Cell/Cellulaire: (250) 213-7482

From: McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>
Sent: Tuesday, January 31, 2023 10:56 AM
To: Chamberlain, Jon <Jon.Chamberlain@dfo-mpo.gc.ca>; Morin, David <David.Morin@dfo-mpo.gc.ca>
Cc: Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; Davis, Neil <Neil.Davis@dfo-mpo.gc.ca>
Subject: FW: Data request: recent sea louse "Science Response"

Hi John and David

I understand that Science is going to lead on this response. I had a chat with Laura and she provided the following thoughts related to data request #1, and what data is held by AMD. I don't think the others are AMD-related. I understand that the response to the request for a meeting will be a Science lead as well. We are happy to participate in a meeting. We are meeting with these folks regularly and if we don't have a specific meeting on this they will likely bring it up in the context of transition plan discussions.

If you need anything further from us, please let me know.

Brenda

Brenda McCorquodale (she/ her/ elle)

A/Senior Director /Directrice principale
Aquaculture Management / Gestion de l'aquaculture
Fisheries Management Branch / Direction de la gestion des pêches
Fisheries and Oceans Canada / Pêches et Océans Canada
1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8
250-902-8865
Email | Courriel: Brenda.McCorquodale@dfo-mpo.gc.ca

From: Sitter, Laura <Laura.Sitter@dfo-mpo.gc.ca>
Sent: Tuesday, January 31, 2023 9:34 AM
To: McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>
Subject: RE: Data request: recent sea louse "Science Response"

From #1 I believe they're referring to the way that scientific analysis was performed (methods and results) versus how it was reported in the publication. AMD does have industry-reported data (as you know ☺) which contributed to the study, but I'm not sure that's what this letter (and bullet) are getting at.

Let me know if you want to chat!

From: McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>

Sent: Tuesday, January 31, 2023 9:25 AM

To: Sitter, Laura <Laura.Sitter@dfo-mpo.gc.ca>

Subject: FW: Data request: recent sea louse "Science Response"

Is #1 the only one that we would have in terms of AMD data holdings?

Brenda

Brenda McCorquodale (she/ her/ elle)

A/Senior Director /Directrice principale
Aquaculture Management / Gestion de l'aquaculture
Fisheries Management Branch / Direction de la gestion des pêches
Fisheries and Oceans Canada / Pêches et Océans Canada
1965 Island Diesel Way | Nanaimo, BC | Nanaimo, CB | V9S 5W8
250-902-8865
Email | Courriel: Brenda.McCorquodale@dfo-mpo.gc.ca

From: [REDACTED]

Sent: Thursday, January 26, 2023 11:15 AM

To: Thomson, Andrew <Andrew.Thomson@dfo-mpo.gc.ca>; McCorquodale, Brenda <Brenda.McCorquodale@dfo-mpo.gc.ca>

Cc: [REDACTED]

[REDACTED] martin.krkosek <martin.krkosek@utoronto.ca>; John Reynolds <reynolds@sfu.ca>; Sean Godwin <[REDACTED]> Gideon Mordecai <[REDACTED]>

Subject: Data request: recent sea louse "Science Response"

Dear Andy Thompson and Brenda McCorquodale,
(cc others)

s.19(1)

I am writing regarding the recent [sea-louse-focused Science Response Report \(2022/045\)](#), with which both DFO Science and Aquaculture Management were heavily involved.

Given that this work has obvious policy implications for DFO's ongoing open-net pen transition process – and that one of the four proposed objectives of the transition plan is trust and transparency – **I am hereby formally requesting a copy of the data analyzed in the above mentioned Science Response.**

The Government of Canada and DFO regularly remind us that they are committed to full and open access to data whenever possible. I understand that some of the associated data (total stocking numbers on BC salmon farms) are considered confidential industry information. Without comment on that position (or the fact that such data have been released in the past), I

specifically request all the other raw data, so that colleagues and I will be able to recreate the analyses in the Science Response Report.

The data we request include (but need not be limited to) the following, *in a usable format* (i.e. raw, cleaned data with associated metadata in an excel file, csv file, or similar):

1. the farm- and week-specific sea louse totals (both *L. salmonis* overall and, in particular, adult female counts),
2. the associated temperature and salinity data that fed into analysis of the louse count data in 1.,
3. the associated farm- and week-specific infectious copepodid modelled estimates, AND
4. the detailed industry sea louse counts from wild juvenile salmon.

Given the time-sensitive nature of this request, I would ask that it be filled in a timely manner – i.e. within five business days. The data should all be in hand, given that the analyses have now been released publicly.

I would further request any and all code used to perform analyses of the above data. Please, however, *do not let this secondary request delay provision of the data themselves*.

Sincerely,



Pacific Salmon Foundation

s.19(1)