



Yukon
Water Board

*Office des eaux
du Yukon*

Public Interest Hearing
on
Placer Mining in Wetlands
‘What We Heard Report’

August 24, 2021

Public Interest Hearing on Placer Mining in Wetlands *'What We Heard Report'*

| | | |
|----------|--|------------|
| 1 | EXECUTIVE SUMMARY | 1 |
| 2 | A MESSAGE FROM THE CHAIR | 3 |
| 3 | REPORT OVERVIEW AND HEARING CONTEXT | 4 |
| 3.1 | Report Structure and Approach | 4 |
| 3.2 | About the Hearing..... | 4 |
| 3.3 | About the Board..... | 5 |
| 3.4 | Virtual Hearing agenda | 6 |
| 3.5 | Opening Statement/Procedural Matters-Summary..... | 7 |
| 3.6 | Context Presentations | 7 |
| 4 | CONSOLIDATED LIST OF SELECTED QUOTES AND SUMMARY COMMENTS | 9 |
| 4.1 | Selected Quotes | 9 |
| 4.2 | Summary Comments..... | 13 |
| 5 | HEARING THEMES | 20 |
| 5.1 | Theme 1: Policy Considerations | 20 |
| 5.2 | Theme 2: Indigenous Treaties and Rights | 20 |
| 5.3 | Theme 3: Information Requirements for Water Licensing..... | 20 |
| 5.4 | Theme 4: Wetlands Reclamation | 21 |
| 5.5 | Theme 5: Conservation and Development of Wetlands | 21 |
| 5.6 | Theme 6: Financial Implications..... | 22 |
| 6 | SUMMARY OF REPRESENTATIONS | 23 |
| 6.1 | Yukon Conservation Society | 23 |
| 6.2 | Canadian Parks & Wilderness Society..... | 28 |
| 6.3 | Yukon Government | 34 |
| 6.4 | Tr'ondëk Hwëch'in..... | 55 |
| 6.5 | Klondike Placer Miners' Association | 97 |
| 6.6 | Ducks Unlimited | 125 |
| 6.7 | First Nation of Na-Cho Nyak Dun | 140 |
| 6.8 | Yukon Chamber of Mines | 166 |
| 6.9 | Vuntut Gwitchin Government | 191 |
| 6.10 | Liard First Nation | 197 |
| 6.11 | Other Party Interventions | 199 |
| 7 | APPENDICES | 219 |

1 EXECUTIVE SUMMARY

The Yukon Water Board held a Public Interest Hearing in accordance with Section 19(1) of the Waters Act given the genuine public interest and concern respecting placer mining activities occurring in wetlands. The hearing did not relate to a specific water licence application, rather, the purpose of the hearing was to gather views and information to further develop the Board's Draft *Wetland Information Guidelines* and about placer mining activities occurring in wetlands.

The Board specifically invited perspectives on the following three questions:

1. What information should be required to support a water licence application for placer mining in wetlands?
2. What should the wetland conservation, development and utilization objectives be on a watershed basis and how can they be balanced on an application basis?
3. What wetland reclamation objectives should be considered during the water licensing process?

A number of Parties made oral submissions (representations) by video-conference at the Virtual Hearing as well as written interventions, while others elected only to provide the Board with written interventions only. After the close of the virtual hearing, the Board sent Information Requests (IRs) to the Parties who made oral submissions. The Parties that made oral submissions included the:

- Yukon Conservation Society (YCS).
- Canadian Parks and Wilderness Society (CPAWS).
- Government of Yukon (YG).
- Tr'ondëk Hwëch'in (TH).
- Klondike Placer Miners' Association (KPMA).
- Ducks Unlimited Canada (DUC).
- First Nation of Na-Cho Nyak Dun (FNNND).
- Yukon Chamber of Mines (YCM).
- Vuntut Gwitchin Government (VGG).
- Liard First Nation (LFN).

Application number PM20-018 on *WATERLINE* contains all the information related to the Hearing. Appendix A of this report provides an Exhibit List for the information that is available on the Board's online registry, *WATERLINE*.

The "Hearing process" in this report refers to the entire process for the Public Interest Hearing on Placer Mining in Wetlands, including interventions and responses to IRs made by all Parties during and after the Virtual Hearing.

It is important to note that this report attempts to summarize the large volume of information submitted during the hearing process including Parties' Representation information, written interventions, and responses to IRs.

REPORT SECTIONS

This report includes the following major sections:

- Message from the Board.
- Report Overview and Hearing Context
- Consolidated List of Selected Quotes and Summary Comments.
- Hearing Themes.

- Summaries of Representations, including Board Questions, Closing Remarks, Additional Intervention Information and Responses to IRs.
- Appendices.

SUMMARY COMMENTS

This report contains groupings of Summary Comments from the Parties into the following perspectives:

- Baseline Information and Environmental Perspectives.
- Wetland Reclamation Perspectives.
- Wetland Management Perspectives.
- Economic Perspectives.
- Cultural and Social Perspectives.
- Legal Perspectives.

The intent of the Summary Comments is to provide an overview of the perspectives and issues raised by the Parties.

HEARING THEMES

Hearing Themes were also developed from the information provided by the Parties. These Themes include:

- Theme 1: Policy Considerations that are required to assist with the balance of a healthy placer mining industry and wetland conservation measures.
- Theme 2: Indigenous Treaties and Rights that are central to wetland conservation measures across Yukon.
- Theme 3: Information Requirements for Water Licensing, including baseline information.
- Theme 4: Wetlands Reclamation on an individual mine basis and objectives on a watershed basis.
- Theme 5: Conservation and Development of Wetlands, including assessment of cumulative effects on a watershed basis, utilization of adaptive management and the Precautionary Principle for making decisions.
- Theme 6: Financial Implications of additional regulatory requirements on the placer industry and government costs associated with water licence applications.

Reader's Note:

The information contained in this report does not reflect the opinions of the Board and has not been verified by the Board.

2 A MESSAGE FROM THE CHAIR

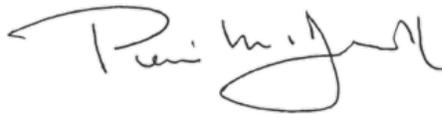
On behalf of all Board members, the Chair appreciates the efforts, resources, and time spent by all the Parties who participated in the Public Interest Hearing on Placer Mining in Wetlands.

The information provided by the Parties has been invaluable for the Board in considering the wide range of issues, perspectives and challenges associated with balancing the conservation, utilization and development of wetlands in the context of placer mining.

The Board has heard a wide range of perspectives on placer mining in wetlands as well as information specific to the Draft *Wetlands Information Guidelines*. The *What We Heard Report* attempts to summarize the vast quantity of information and myriad of views that were provided by all the Parties. This information and these views will assist the Board in its review of the Draft *Wetlands Information Guidelines* and deepens the Board's understanding of the context within which placer mining in wetlands is proposed.

The Board wishes to assure the Parties who participated throughout the Hearing process that the issues and concerns that have been raised are being taken seriously. The Hearing provided valuable information that will be considered by the Board in making licensing decisions around placer mining in wetlands.

Chair, On Behalf of the Board,
Piers McDonald

A handwritten signature in black ink, appearing to read "Piers McDonald", written in a cursive style.

3 REPORT OVERVIEW AND HEARING CONTEXT

3.1 REPORT STRUCTURE AND APPROACH

The intent of the “What We Heard Report” is to provide a summary of the issues and perspectives presented by each Party that participated in the Public Interest Hearing on Placer Mining in Wetlands and to provide a summary of what Board members heard throughout the Hearing process. The report focusses on the questions asked by the Board and comments related to the Draft *Wetlands Information Guidelines*.

This report includes the following major sections:

1. Executive Summary.
2. Message from the Chair.
3. Report Overview and Hearing Context.
4. Consolidated List of Selected Quotes and Summary Comments.
5. Hearing Themes.
6. Summaries of Representations, which also includes Board Questions, Closing Remarks, Additional Intervention Information and Responses to Information Requests.
7. Appendices.

The approach taken in developing this “What We Heard” Report was to compile and summarize the information and perspectives provided by the Parties to the Board throughout the Hearing process. The Summary Comments and Hearing Themes in this report highlight the issues raised by the Parties.

3.2 ABOUT THE HEARING

The purpose of the Hearing was to gather information on the Board’s Draft *Wetlands Information Guidelines* and to hear views about placer mining activities occurring in wetlands.

There were three questions posed by the Board for the Virtual Hearing:

1. What information should be required to support a water licence application related to placer mining activities in wetland areas?
2. What should the wetland conservation, development and utilization objectives be for a watershed and how can they be balanced on an application-by-application basis?
3. What wetland reclamation objectives should be considered during the water licensing process?

An Initial Notice of the Hearing was provided to specific Parties on March 10, 2020 along with a Notice of Public Hearing in local print media on March 11, 2020 with the dates of April 15-17, 2020 in Whitehorse and April 21-22, 2020 in Dawson City. Due to the COVID outbreak and in compliance with public health orders, a Notice of Cancellation was issued on the Board’s website, including WATERLINE and in local print media. On August 21, 2020, through letters to the Parties, in local print media and on the Board’s website, it was advertised that the hearings were re-scheduled for October 27-29, 2020, in Whitehorse and would be held in a virtual format. At this time, the Board requested Parties to provide notice of intent to participate by September 11, 2020, with presentation summaries due in advance on September 30, 2020. An Administrative Pre-Hearing Conference was held on October 13, 2020, to provide an opportunity for all Parties to gain a better understanding of the process and provide some clarity on the issues the Board wished to hear at the Virtual Hearing. The focus was also on the logistics and administrative matters related to the Virtual Hearing.

In the Board's closing statements at the Virtual Hearing, the Board indicated to the Parties that an opportunity to provide additional information through IRs would be forthcoming. The Board sent IR's to each of the Parties on November 9, 2020 with a deadline to respond of November 30, 2020. Written submissions on all matters relating to the hearing were due by December 14, 2020.

3.3 ABOUT THE BOARD

On April 1, 2003, responsibility for the management of water resources in Yukon was transferred from the federal government to the Government of the Yukon (YG). The Yukon Water Board was established under the federal *Yukon Waters Act (Canada)* and continues under the territorial *Waters Act (WA)*. While Board members are appointed by the Commissioner in Executive Council, the members are nominated for appointment by the Council of Yukon First Nations, the Government of Yukon and the Government of Canada.

RESPONSIBILITY

The Board not only has responsibilities under the WA but also under Chapter 14 of the Yukon First Nations Final Agreements (YFNFA). The WA and the YFNFA confirm that the Board is the sole regulator in Yukon for the use of water and deposit of waste into water. The Board's main responsibilities are to issue, renew, cancel, amend and assign water licences. The Board also has responsibilities to resolve water use disputes and address issues of compensation. As the sole regulator of water in Yukon, the Board also has obligations under the *Yukon Environmental and Socio-economic Assessment Act (YESAA)*. Finally, the Board has responsibilities under the *Placer Mining Act (PMA)* as a result of a transfer of authority from YG.

WATERS ACT

The objects of the Board in the WA are:

“to provide for the conservation, development, and utilization of waters in a manner that will provide the optimum benefit from them for all Canadians and the residents of the Yukon in particular.” *S.Y. 2003, c.19, s.10.*

The WA sets out the authorities and responsibilities of the Board to:

- a. Issue, renew, amend, assign or cancel licences.
- b. Require applicants supply information and studies in support of applications.
- c. Require security and compensation.
- d. Make recommendations to the Minister.
- e. Hold public hearings, having all the powers of a Board under the Public Inquiries Act.
- f. Provide notice of licence applications.
- g. Make Rules.
- h. Maintain a public Register.
- i. Issue Reasons for Decisions and Orders.

WATERS REGULATION

Part 1 of the Waters Regulation (WR) sets out the requirements when submitting an application for a water licence. These include the form, specific information for a given undertaking, application fees, licensing criteria for type A or type B licences, water-use fees and the requirements for assignments and cancellations. Part 1 also sets out the purposes for which the Board may require security.

Part 2 of the WR focusses specifically on application reviews for quartz mining undertakings.

Schedule 2 of the WR defines the types of undertakings for which Schedules 5 to 10 of the Regulation set licensing criteria.

UMBRELLA FINAL AGREEMENT (UFA) AND YUKON FIRST NATION FINAL AGREEMENTS (YFNFA)

The UFA was finalized in 1993 and is a tri-partite agreement between Council of Yukon First Nations, YG and the Government of Canada. The UFA is the framework on which the 11 YFNFA are based. Chapter 2 of the YFNFA identify the Yukon Water Board as a Board and details provisions for the Board's functions. This includes provisions related to nomination and appointment of Yukon First Nation members, funding and training, adoption of bylaws and membership terms. Chapter 14 of the YFNFA establishes the Board's role as the regulator of water in Yukon. It also sets out obligations and responsibilities that relate to water rights and interests of Yukon First Nations and Yukon Indian persons. The objective for the Board in Chapter 14 is to "maintain the Water of the Yukon in a natural condition while providing for its sustainable use." (UFA Ch. 14.1.1)

PLACER MINING ACT (PMA)

In 2003, YG transferred to the Board certain functions of the Chief of Placer Land Use (Chief) respecting Class 4 placer land use operations. The transfer of functions pursuant to section 99(5) of the PMA, includes authority to:

- a. Approve Class 4 operating plans.
- b. Require and determine the amount of security.
- c. Approve of an amendment or renewal of a Class 4 operating plan.
- d. Authorize an assignment of a Class 4 operating plan.

The intent of the transfer was to create administrative efficiency for the review of Class 4 placer mining operating plans.

YUKON ENVIRONMENTAL AND SOCIO-ECONOMIC ASSESSMENT ACT (YESAA)

YESAA is federal legislation that sets out the environmental and socio-economic assessment framework in Yukon. It contains specific responsibilities and obligations of the Board when issuing licences and approvals while acting as Chief.

Section 83 of YESAA specifies that the Board must, as a territorial agency:

- Not undertake the project, require that it be undertaken or take any action that would enable it to be undertaken until the territorial minister has issued a Decision Document.
- To the extent of its authority, implement a Decision Document issued by a territorial minister in respect to the project.

Section 86 prohibits the Board from:

- Granting or renewing rights contrary to a Decision Document.
- Setting conditions that conflict with a Decision Document.

3.4 VIRTUAL HEARING AGENDA

The agenda that was published prior to the virtual-format hearing is found in Appendix B.

3.5 OPENING STATEMENT/PROCEDURAL MATTERS-SUMMARY

The Yukon Water Board Chair, Mr. Piers McDonald made an Opening Statement to provide context for the Public Hearing. Mr. McDonald provided comments on the purpose and scope of the Public Hearing. He summarized that the Board uses an “inquiry model” to “obtain, clarify and gather” information to consider when adjudicating applications. He explained that the Board has obligations under YESAA, Chapter 14 of the YFNFAs and has a dual role as the regulator of water under the WA and as Chief for certain functions respecting Class 4 Placer Land Use operations under the PMA. This dual role means that the Board simultaneously receives water licence applications for placer mining undertakings and applications for Class 4 mining land use approvals. Many of these applications involve disturbance in wetlands. Water licence and Class 4 operating plan applications account for over 80 % of the total applications annually received by the Board.

Mr. McDonald acknowledged in his Opening Remarks that the responsibility for setting Yukon wetlands policy and land use policy falls outside the jurisdiction of the Board. However, regulating activities in wetlands falls squarely within the Board’s jurisdiction and objects under the WA.

Mr. McDonald provided a history of the issue of regulating wetlands and the events that led to the decision to have a Virtual Hearing on wetlands and placer mining. He further commented that the challenge of regulating activities in wetlands in the absence of policy direction or land use planning is “at the heart of the issue”. The patchwork nature of individual applications makes the balance of development and conservation of wetlands challenging. In 2018, the Board began the process of developing Wetlands Information Guidelines to provide applicants, interveners, and the public information about what the Board requires to assist it in making evidence-based decisions on applications. In October 2019, after receiving a number of interventions that requested that the Board hold a public hearing, the Board determined that it was in the public interest to hold a public hearing to consider if mining is acceptable on undisturbed wetlands and if so, what conditions should apply to mining these wetlands. The Board determined that there was a genuine interest and concern about placer mining in wetlands and as a result called for the Public Hearing.

3.6 CONTEXT PRESENTATIONS

MARA POLLOCK, POLLOCK LAW, LEGAL COUNSEL FOR THE BOARD:

LEGAL FRAMEWORK

Mara Pollock introduced herself as legal counsel to the Board. She indicated that the Board asked her to provide a brief overview of the complex legal framework within which the Board carries out its duties. This framework includes the YFNFAs, specifically Chapters 2 and 14, the WA and Regulations, which is the legislation under which the Board carried out this public hearing, the PMA and Regulations and the YESAA.

In addition to this legal framework, she stated that the Board, as a quasi-judicial inquisitorial administrative tribunal, is required to follow administrative law principles. It examines applications on a case-by-case basis and makes evidence-based decisions and must follow the rules of procedural fairness. So, while these principles are not set out in any piece of legislation, this is the common law, and she noted that it is important to remember that these principles guide the way the Board actually functions and carries out its duties.

Mara Pollock commented that the Board has responsibilities under the PMA, specifically for Class 4 Placer Operations. YG transferred authority for certain functions of the Chief of Placer to the Board. Those functions are found in sections 102, 106, 108 and 110 of the PMA. The Board in this context is actually

working as a delegate of YG. Therefore, the Board functions as the Water Board in relation to water and second, as the Chief of Placer Land Use with respect to land.

Mara Pollock also spoke about YESAA. She noted that YESAA has its origins in Chapter 12 of YFNFA's, section 12.3.1. Under YESAA, the Decision Body has the option to issue a Decision Document that allows a project to proceed. If such a Decision Document is issued, the Board is permitted to carry out the water licensing process. The Board is not required, however, to issue a water licence even though a Decision Document allows a project to proceed. If a Decision Body issues a Decision Document that does not allow a project to proceed, the Board may not carry out a water licensing process or an operating plan review.

In relation to water, if the Board issues a licence, the Board must implement a Decision Document to the extent of its authority under the WA. The Board is not allowed under YESAA to give or renew water rights contrary to a Decision Document or put conditions in a water licence that conflict with a Decision Document. In relation to land, if the Decision Body issues a Decision Document that allows a project to proceed, the Board may carry out a Class 4 Operating Plan review and must implement a Decision Document to the extent of its authority under the PMA.

The Board's purpose under the WA is to provide for the optimum benefits from waters in Yukon for all and to maintain water in a natural condition and to provide for its sustainable use. These purposes and objectives guide the Board's decision-making.

The Board ultimately makes decisions on whether or not to issue, amend or renew water licences, and these licences are based on evidence. Licences respect Indigenous rights and the Board strives to issue licences that are enforceable. In terms of the PMA and Class 4 Operating Plans, the purpose/objective of Part 2 of the PMA is to ensure development and viability of a sustainable, competitive, healthy industry that upholds environmental and socio-economic values and respects Indigenous rights. When the Board is reviewing Class 4 Operating Plans as the Chief of Placer Land Use, it is guided by these objectives.

SCOTT SMITH, ETERNNA CONSULTING, BOARD CONSULTANT: OVERVIEW OF YUKON WETLANDS.

Scott Smith presented a general overview of wetlands, the types, their functions and occurrences across Yukon. The intent of the presentation was to inform participants and to help set the context of wetlands and the five wetland types (bogs, fens, marshes, swamps and shallow water) in Yukon. The following is a summary from Scott Smith's presentation:

- Wetlands are generally found in valley bottoms throughout the Yukon.
- Permafrost both promotes and maintains wetlands, particularly in peatlands.
- Wetlands provide hydrologic functions including water storage, filtering and buffering.
- Wetlands provide plant and animal habitat that is generally not found elsewhere on the landscape.
- In terms of reclamation, it is important to avoid wherever possible the disturbance of wetlands, particularly peatlands, which once disturbed cannot be re-established over the short term.
- Where disturbance has occurred, landscape reclamation can promote a range of hydrologic conditions and biodiversity typically in shallow water, marsh and swamp wetland types.
- Biodiversity is largely a function of landform diversity. This diversity creates an opportunity for successful reclamation efforts.

In terms of wetlands occurrences, it is estimated that there is less than 5 % distribution across Yukon. In west-central Yukon, the total extent of wetlands covers anywhere between 4 % and 10 % of the landscape. Detailed mapping by McKenna and Bond in the Indian River valley indicates 8 % of the drainage is currently covered by undisturbed wetlands. In terms of landscape modification due to mining and road building in the Indian River drainage, it is estimated at just under 3 % in valley bottoms, where wetlands are located. Fens are the dominant wetland in the Klondike Plateau as shown by mapping by McKenna (2018).

4 CONSOLIDATED LIST OF SELECTED QUOTES AND SUMMARY COMMENTS

The intent of this section of the report is to give the reader a summary of Selected Quotes and Summary Comments that were delivered by the Parties throughout the Hearing process. It is important to note that the Selected Quotes and Summary Comments provide perspectives on the major issues and concerns that were raised. This section will provide the reader with a snapshot of the diverging perspectives that were presented throughout the Hearing process.

Readers Note:

It is important to understand that the Selected Quotes and Summary Comments contain information that was presented during the Virtual Hearing as well as written submissions by the Parties. These do not reflect opinions of the Board, nor has the Board sought to verify information presented.

4.1 SELECTED QUOTES

Yukon Conservation Society

SEBASTIAN JONES:

“Wetlands in the Yukon have no special status and no protection, despite the valuable role they play.”

“In recent years, bodies, such as YCS, and First Nations, such as Tr’ondëk Hwëch’in, have raised concerns about the wholesale loss of ancient wetlands in the Indian River Valley, one of the largest wetland complexes in Yukon Beringia.”

“YCS is an advocate for an ecosystem approach, with the goal of reclamation plans being the restoration of the original ecosystem, rather than the recreation of a particular wetland.”

Canadian Parks and Wilderness Society

RANDI NEWTON:

“Even with reclamation, even if not all of those unmined wetlands are mined, we’re still changing the function of these landscapes at a large scale, leaving a chunk of water disturbance across this landscape and changing how it functions in terms of water movement and storage, carbon storage, biodiversity, and of course, cultural values and how people use and relate to that landscape.”

“And when I say ‘restoring lost wetland benefits’, I don’t necessarily mean restoring a wetland to its original condition, which is often impossible to do, particularly in such a plan. I mean reclaim the land in a way that brings back benefits lost, and a large part of doing that is avoiding or minimizing a loss of these benefits in the first place.”

Government of Yukon

MR. JEFF BOND:

“Regularly, the Indian River is producing 50 percent of the placer gold within the Territory. It’s definitely the premier producing watershed in the Territory.”

MR. TODD POWELL:

“So, the principles at play here that EMR employs are to avoid mining in wetlands where possible; where not possible, to minimize the effects of that mining activity in those wetlands and to reclaim those impacts to wetlands post mining.”

MR. JOHN BAILEY:

“I want to start by just making it clear that the Government of Yukon recognizes that wetlands are an important part of a healthy and functioning environment, and they serve as a connection between the land, water and the air. They can be important places for sources of food, medicines and traditional pursuits; but they are also places where development might occur and economic wealth...”

“Going back probably about 40 years, work has been done to identify and study some of the important wetlands in the Yukon, and a lot of this through collaboration of both scientific and traditional knowledge keepers; and this has resulted in the identification of more than 50 important wetland complexes in the Territory, and a number of these have become special management areas or habitat protection areas, identified in some of the First Nation final agreements, and in many cases, were provided some sort of subsequent protection in law following up on that.”

“As a public government, YG has got a responsibility to take all the interests of Yukoners into consideration, and that’s no different when it comes to wetlands.”

“Government of Yukon has been pursuing and will continue to pursue how to best balance interests by working with First Nations, industry, regulators (like the Yukon Water Board) and other stakeholders.”

Tr’ondëk Hwëch’in

CITIZEN:

“Wetlands are the driver. They are connected to all other resources, water quality and habitat. Tradition economy and use of land is who we are. We won’t be who we are if we lose these qualities again.”

MS. KORMENDY:

“But the most important thing I think we have to fight hard for is this wetland. I’m not a person that knows everything. I always told those guys that, too. I’m just trying to help our earth.”

SPEAKERS:

“The water and the wetlands are so important. They’re, like, very essential in our world. Like, they support all of the tiniest organisms, you know, the microbes and stuff; and once those are out of balance, it throws everything else out of balance.”

“Like, you know, you don’t know when you’ve gone too far until you’ve gone too far, and you can’t just return that. You can’t replace that.”

“We’re not the only ones here, you know, and being caretakers – we’re not landowners, we’re caretakers – we’re to take care of the land, and it’s a great responsibility.”

MR. TAYLOR:

“We are reaching a tipping point beyond which there is no turning back.”

“The Indian River could be an example of how to do things better and identify things that shouldn’t be done or repeated in other areas of the wetlands. We need to learn from our mistakes. Most people who learn from their mistakes become better people. If we do not learn, our lives become full of mistakes without corrective action.”

“We need to stop issuing licences where there will be irreparable harm where wetlands can’t be restored and to work with us to make sure the right measures are in place, going forward.”

“What we are really talking about today is conserving and protecting our deeply-ingrained connection with the land and water. This is our spirituality, and this is who we are as Dänojà.”

Klondike Placer Miners' Association

MR. WILL FELLERS:

"Placer mining is more than a job; it is a way of life and that the regulation of placer mining on wetlands has "very real implications for us" and "our very way of life is at stake."

"Placer mining are the "family farms of the north" with all expenses covered from their own pockets."

"The KPMA would like to work with government on the KPMA existing reclamation practices and finalize guidelines for wetland reclamation that meet ecological requirements and are achievable and feasible for industry."

Ducks Unlimited Canada

MR. JAMIE KENYON:

"So, you might actually be further degrading surrounding peatlands without really knowing it; and so, that's where it gets difficult to measure the net change in benefits. So, while I agree that the passive reclamation and additional of marsh and shallow open water does provide some benefits, it's difficult to know whether it's providing necessarily a net benefit or whether we're still, you know, in a debit situation because of additional permafrost peatland areas that are affected outside as a result of that change".

First Nation of Na-Cho Nyak Dun

MS. HUMMEL:

"My great-grandmother grew up on the land. They would set up camps for a season, harvest what they needed at the time; and when they noticed the seasons changing, they'd pack up and move camp. They travelled from the Northwest Territories by foot and by dogsled over the Mackenzie Mountains in the wintertime. The wetlands helped them navigate."

MR. PETER:

"What my dad told me when I was very young the water, it's alive. It's a living thing. Everything out there is a living thing. They're spiritual. You have to respect everything you do. You do not disturb the wetlands. Leave it as it is. Take what you need, but don't disturb. Just leave it be."

Yukon Chamber of Mines

MR. CLARKSON:

"We could do a lot better job if we can give the miners instructions – enforceable instructions – and train the inspectors so that they can make sure the miner does his work, and it will improve the industry."

"If you go with a standard set of conditions, they're going to be easy to enforce. Enforcement is a big part of the picture. If the miners don't learn how to reclaim wetlands and the bad apples aren't forced to comply, then you leave."

"YG, First Nations and representatives of industry and other NGO's need to get together to review, amend and sanction a revised version of the KPMA's BMPs."

Vuntut Gwitchin Government

MR. NIJOOTLI:

"So, we need probably to do some research down there and do a database collection of the river system in terms of what's in there so we can have a healthy river. That would be, like, a good kind of project for the Yukon."

“The question is: How are you going to keep a ma and pa operation going and still have healthy river system? At the end of the end of the day that’s what it’s all about. How do you do the socio-economic environmental impacts to watershed system or a creek?”

“And I think that’s basically – how do we, like, keep the economy going for placer mining but still have it done in a viable way for the ecosystem, and do the mining at the same time?”

“Change is inevitable. So, how is that affecting wetlands and what that’s going to be for the future, that’s inevitable. That’s going to happen. So, how do we do it? We do it collectively and protect some of the original wetlands as is, and basically, the rest they can mine.”

Liard First Nation

MR. MILDON:

“The Kaska never ceded, surrendered or extinguished their original title or their associated rights, and that means rights to make decisions about the land, rights to the natural resources on the land and to carry out their traditional practises that continue to this day.”

Other Parties

MS. MCKENNA:

“All applications in wetlands should be paused until adequate information including that on significance status, watershed thresholds, wetland benefits, and heritage values is available.”

“We can not afford to continue to mine undisturbed wetlands until we know more about the wetland ecosystems and have collected enough information to fully assess the trade-offs we make when converting these wild and natural wetland ecosystems to man-made landscapes.”

Mayo Renewable Resources Council:

“The Mayo Renewable Resources Council recommends extreme caution in allowing any development in or around wetlands until wetland policy, mapping and classification, cumulative impact studies and disturbance restrictions and requirements are developed and placed in regulation/legislation.”

MR. MCDOUGALL:

“The Yukon is a big place and there is room for all here. I encourage all to pull back and view the Yukon as a whole, look for context, look for balance.”

MR. NEIL LOVELESS AND FAMILY:

“Placer mining has always been a vital part of the community of Dawson City as well as the greater Yukon. We are an industry that has endured the ups and downs alongside our communities and territory as a whole and we want this to continue into the future. However, in order to do so, we need a fair approach when it comes to dealing with wetlands that allows for sustainable mining and reasonably friendly reclamation practices to be adapted over time between industry and stakeholders.”

MR. DALE BULMER

“I feel that it is important you understand this about me because the changes you are proposing to the Water Licence application process by introducing the Wetland Plan Guidelines could put the company I work for out of business. “

Tara Christie

“We urge the Water Board to continue to issue placer licences, including in wetlands where CMI must approve wetland reclamation plans, and demand that the Yukon Government provide clear guidance on a clear policy related to placer mining in wetlands, that enables placer mining, particularly existing

businesses to continue to operate, supporting Yukon businesses and employing Yukoners in this lifestyle business that is a cornerstone of our economy and society.”

4.2 SUMMARY COMMENTS

The following is a compilation of comments that were made by the Parties. They have been included to provide a better understanding of the issues and solutions that were presented throughout the Hearing process. Some of the comments by the Parties have been modified (e.g., shortened) for ease of integration into the report and not all the comments made by the Parties have been included. The intent is to gain an overall understanding of the Parties’ perspectives .

The Summary Comments are grouped into the following perspectives:

- Environmental and Baseline Information.
- Wetland Reclamation.
- Wetland Management.
- Economic.
- Cultural and Social.
- Legal.

Readers Note:

It is important to understand that the Summary Comments contain information that was presented by the Parties throughout the Hearing process and does not reflect opinions of the Board, nor has the Board sought to verify information presented.

Environmental Perspectives and Baseline Information

- Baseline information should include pre-disturbance conditions and current conditions for historic placer mining sites.
- Wetland mapping that includes field verification is more accurate than predictive mapping.
- Baseline information should include mapping traditional land use and traditional knowledge for wetlands.
- Wetlands in the Indian River drainage have a maximum age of 6,000 years before present.
- If the conditions associated with the water, geology and landforms are changed the result can be impacts on the established ecological balance in wetlands.
- Wetlands function as the kidneys of the landscape by regulating water balance, carbon sequestration, food chain support and maintenance of fish and wildlife habitat.
- Fens have a high-water table at or near the surface with down gradient movement to receiving watersheds.
- Bogs also have high but stable water tables but not at the surface with the primary function being water storage.
- Due to the increased landscape diversity from placer work over the last 120 years, the Indian River drainage is known to have high moose densities, compared to surrounding areas, and significantly high populations of other animals, like lynx, rabbits and beavers.
- Mining in shallow open water, marsh and isolated bog wetlands should be avoided.
- Estimates for the Dawson Regional Land Use Planning area indicates there is approximately 11.7% (563,737 hectares) of wetlands including bogs, fens, swamps, and marshes plus another 1.1% (51,186 hectares) as open water which includes shallow open water wetlands.

- DUC estimated the Klondike Plateau ecoregion to have 183,663 hectares of bogs, fens, swamps, and marshes plus 37,475 hectares of shallow open water wetlands.
- It is estimated that approximately 62% of active placer mining claims contain or intersect with a wetland. This degree of overlap justifies concerns regarding impacts to wetlands from placer mining.
- Wetland mapping that has been carried out in the Indian River watershed shows that the impacts on peatlands near mining disturbances appear to be unaffected.
- All classes of wetlands provide the stabilization of water flows, filtering/ purification of water, storage of carbon and the provision of wildlife habitat.
- The Predictive Ecosystem Mapping carried out by Bond (2016) showed that the total land disturbance in the Indian River drainage basin is 0.29 % in an area that has 60 km² of wetland coverage.
- Territorial decision makers shouldn't approve licences until proponents provide several years of comprehensive baseline information.
- LFN also believes that the Board cannot make significantly and legally-sound decisions without comprehensive baseline information about the watersheds where development is proposed.

Wetland Reclamation Perspectives

- Reclamation plans should be ecosystem based and holistic by including effects outside of the immediate mined areas.
- The key to the reclamation of wetlands is to design rolling post mine topography with the emplacement of fine sediments to promote soil moisture capacity.
- The re-establishment of permafrost in tailings has been documented in post mining landscapes.
- The Progressive Reclamation Working Group is developing government-to-government reclamation recommendations.
- There are no reclamation plans that will sufficiently mitigate the environmental and socio-economic impacts and the rights contained in the TH agreement. These impacts can only be reduced by prohibiting mining on undisturbed wetlands.
- An estimate for wetland reclamation is \$ 153,000 per hectare or approximately \$ 500 M for the Indian River drainage based on current estimates of wetland disturbance.
- Comments made during the Virtual Hearing about the high costs associated with the reclamation of placer mined wetlands are incorrect when wetland reclamation costs are incorporated into a mining plan.
- The incorporation of FNNND's understanding of landscape connectivity and a holistic perspective of wetland management is paramount to establish ecologically appropriate thresholds of disturbance and socially acceptable standards for reclamation.
- The KPMA would like to work with government starting with the existing KPMA Reclamation Best Practices (BMPs).
- Reclamation plans should provide the hydrological equivalence of lost wetlands.
- Current reclamation practices cannot effectively replace bogs and fens.
- A policy of no-net loss of wetland function should be a component of reclamation planning.
- Enhancing passive natural reclamation will provide superior post mining wetlands using standard permit conditions that are based on best management practices.
- The position of the YCM is to enhance passive natural reclamation which will provide superior wetlands, using standardized permit conditions and based on BMPs.

- Industry has decades of field evidence that wetlands in placer mined areas are reclaiming passively into highly productive and diverse wildlife habitat. These wetlands also purify and regulate water flow and may do a better job than the original wetlands.
- The intent of “restoration” is that the habitat has to be identical to the natural conditions that existed prior to modification.
- The intent of “reclamation” is to return a site disturbed by mining or exploration to a condition where it will be able to re-establish a suitable, self sustaining and productive wetland environment which is not necessarily identical to the one disturbed. It is important to stress that the goal of wetland reclamation after placer activity is reclamation not restoration.
- Placer miners have been mining wetlands in the Indian River valley for almost 40 years and for over 100 years in other areas of the Klondike. Wetlands have been passively reclaiming themselves all this time.
- There is the opportunity to enhance passive natural reclamation of wetlands, to speed up the reclamation process and provide superior wetlands and uplands using standardized permit conditions based on modified Best Management Practices (BMPS).
- As reclamation usually results in a reduction of wetland area, offsetting should also be required.

Wetlands Management Perspectives

- At the present time, there is no environmental protection for wetlands.
- Wetlands management requires baseline information and cumulative effects assessment.
- The best way forward is to work together to protect wetlands.
- Management planning of wetlands that allows for some loss of wetlands requires land use planning and deep consultation to avoid crossing ecological and cultural thresholds.
- Wetlands management should also include a no-net loss of wetland functions benefits and reclamation should restore the original ecological function and provide for social and cultural values.
- An assessment of cumulative effects is required to predict reclamation outcomes and if this is not available, the Board needs to pause licensing decisions on mining in undisturbed wetlands until there is a suitable management framework through land use planning or consultation.
- A DFO style of modelling (Fish Habitat Design, Operation and Reclamation Workbook and Worksheets for Placer Mining) for wetlands is possible if disturbance thresholds are set and protection measures are implemented.
- The intent of the “Interim Approach” was to find balance between mining and protection and reclamation of wetlands in the Indian River drainage.
- The Interim Approach provides that 100 % of bogs must not be disturbed and 40 % of fens must be protected on a claim block basis.
- TH does not support the Interim Approach for placer mining in the Indian River drainage.
- The goal of YG’s Wetlands Policy is to develop a holistic approach to ensure that the benefits of Yukon’s wetlands are sustained.
- The Draft Wetlands Policy includes building knowledge to understand “wetlands of special importance” that warrant additional protection.
- The Draft Wetlands Policy will also commit to protection through achieving no loss of wetland benefits.
- The Draft Wetlands Policy will also manage human impacts on wetlands outside of those wetlands of special importance.
- The YG has 5 key considerations for managing wetlands: First Nations Final Agreements, Reconciliation, Stewardship, Economic considerations, and Legal Aspects.

- YG is planning to refine the Interim Approach in partnership with the TH Government.
- A Cumulative Effects Framework is required for wetlands management.
- Wetland conservation measures should be based on cumulative effects studies and land use planning.
- TH recommends that until there is a conclusive determination and understanding of whether a wetland complex can sustain further damage and that further activities in that wetland will not harm the functionality of that complex, the Board simply reject licence applications for mining activities in wetlands.
- Buffer zones should be included around wetland development.
- It is recommended that until there is an understanding of whether a wetland complex can sustain environmental function due to placer mining development the Board reject water licence applications for placer mining in wetlands.

Readers Note:

The Precautionary Approach was described by many of the Parties and is included below to show the range of perspectives that were provided throughout the Hearing process.

- The Precautionary Approach is recommended with a cumulative impacts study in the Indian River area to understand current wetland conditions to assist with the impacts of future developments.
- The Precautionary Approach should be used with no approvals for mining on wetlands until there is an understanding of current conditions and potential effects on wetland functions.
- The Precautionary Principle is meant to ensure that the public good is represented in all decisions made under scientific uncertainty. When there is a degree of scientific uncertainty about the risks and benefits of a proposed activity, policy decisions should be made in a way that errs on the side of caution with respect to the environment.
- Implementation of the Precautionary Principle by the Board would take the form of not issuing further placer licences in wetlands until the information and regulatory structures are adequate to create mining plans which assure that actions are not or will not cause environmental and socio-economic damage.
- The Precautionary Principle is meant to ensure that the public good is maintained when there is a degree of scientific uncertainty about the risks and benefits of a proposed activity. In this context policy decisions should be made in a way that errs on the side of caution with respect to the environment.
- There is a general lack of understanding of “tipping points” regarding cumulative effects for placer mining in wetlands which means that decisions will have to be made very carefully using a Precautionary Approach.
- FNNND does not oppose mining but there is a need to balance environmental protection with industrial development. Mining in FNNND’s Traditional Territory needs to be done in a careful and precautionary way.
- Implementation of the Precautionary Principle by the Board would take the form of not issuing further placer licences in wetlands until the information and regulatory structures are adequate to create mining plans which assure that actions are not or will not cause environmental and socio-economic damage.
- The Precautionary Approach according to the 1992 Rio Declaration is, “*Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.*” This is a different definition that has been used for this hearing.

- Board Wetland Guidelines should not be implemented without consultation with affected placer miners.
- Approximately 58.6 % of the Yukon is classified as a wetland. In comparison 0.56 % of Yukon is covered by placer claims and of that only a fraction is a producing mine.
- It is recommended that a risk-based approach be used at the earliest stage of the decision-making process (YESAA or earlier), informed by a YG Wetland Policy, to help achieve consistent, predictable, & transparent decision-making for wetlands management.
- Wetland mapping that has been carried out in the Indian River watershed shows that the impacts on peatlands near mining disturbances appear to be unaffected.
- A no-net-loss of wetland function or benefit is recommended as a foundational management principle.
- A conservative approach for the utilization of buffers would be to use 15 metres for wetlands under one hectare in size and 30 metres for wetlands greater than one hectare in size within a framework of the Precautionary Principle and Adaptive Management.
- An Adaptive Management framework that includes creating a plan with expected outcomes and implementation of the plan with monitoring and assessing whether goals were achieved would be beneficial for wetlands management.
- There is a need to work together to better protect and preserve the waters and wetlands in the traditional territory of the FNNND.
- Land use planning is a promise in Chapter 11 of FNNND's Final Agreement but to date there is no regional land use planning. Until public governments make good on promises for land use planning and ensure that our people are heard, development on our wetlands needs to be paused.
- The placer mining industry requires simple, affordable, effective and easily understood and enforceable guidelines.
- Mining in shallow open water, marsh and isolated bog wetlands should be avoided.
- It might be advantageous for First Nations upon request from the Board to provide a framework of engagement on wetlands.
- The Wetland Information Guidelines prepared by Palmer Group if implemented, could be extremely costly to implement and could result in a dramatic shrinkage of the placer mining industry.
- A simpler and more cost-effective approach, which actually enhances wetland reclamation was developed by the KPMA in 2015.
- Industry supports meeting with governments and stakeholders about Best Management Practices for placer mining in wetlands.
- It will be important to ensure that Crown consultation about future decisions on managing wetlands has been adequate.
- Placer mining in wetlands collides with fundamental aspects of the Kaska world, and it heightens LFN's elevated concern for the changes occurring across Yukon landscapes due to climate warming and loss of lands to development, both large and small.
- There are no initiatives underway to do any land use planning that are grounded in Kaska indigenous land use patterns and traditional knowledge.
- The Board must also understand how the Kaska traditionally use and manage watersheds before issuing licences.

Economic Perspectives

- The Indian River drainage has produced approximately 2.1 million oz of gold from 1897 to present day.

- Indian River placer production is approximately 36 % of total placer gold production in Yukon.
- Between 30 to 40 seasonal workers and 3 to 4 mine owners are TH citizens.
- Between \$ 600,000 to \$ 1.0 M is spent on an annual basis by the TH government responding to placer mining issues.
- YG royalties from placer mining in the Dawson area in 2017 was \$ 26,405 and in 2016 TH received \$ 69 in royalties.
- Compensation to industry should be considered if water licence applications are denied due to new regulatory requirements for wetlands.
- The placer mining industry injects an estimated \$ 118 million dollars into the Yukon economy, starting with the communities. Excluding government, placer mining contributes approximately 6.5 percent of the Territorial GDP.
- The nature of Yukon's placer mining industry does not allow for the raising of funding in a public company. This results in limited financial resources for the placer mining industry.
- If placer mining in wetlands stopped this could result in approximately a 60% reduction in the placer gold production which is equivalent to approximately \$148 to \$246 million (Cdn) annually to the Yukon's private sector economy. This would not include the costs of litigation by miners who could sue the YG and/or the Board for a loss of their income.
- Most placer miners are Yukon residents. Over 90% of mine owners and 68% of their employees are residents. Approximately 92% of their operating expenses are spent in Yukon with significant spin-off benefits to many other private sector businesses. Placer mining employs 400-600 people directly and additionally over 600 people in service industries. The placer industry has over 150 family-based operations with cumulative gross revenues exceeding \$140 million dollars annually.

Cultural & Social Perspectives

- Fifty percent of placer mines are co-owned or owned by women, which again speaks to the 90 % of placer mines that are family-run.
- Forty percent of miners live in the Yukon year-round, and upwards of 80 live and pay taxes in the Yukon for at least seven months of the year.
- The 2020 placer mining season had approximately 460 workers with over 90 % of the mines being family-run and managed.
- Favron Enterprises has always been a family operation that has operated for 43 years. This season, we employed 12 people which helped support 6 local families.
- TH have a cultural and traditional obligation to be stewards of their traditional territory.
- The Board must understand the traditional use of wetlands before issuing licences.
- First Nations have a cultural and traditional obligation to be stewards of their traditional territory.
- Wetlands provide important ecological services and support for cultural practices and traditional lifestyles including harvesting and hunting.
- The Indian River has been the breadbasket of the TH but now citizens are steering away from that area.
- Mining in the Indian River wetland complex has already surpassed the threshold of social acceptability.
- Historically the Indian River valley was frequently used and a highly valued area by the TH.
- There is a need to work together to better protect and preserve the waters and wetlands in the traditional territory of First Nations.
- FNNND's traditional territory and the waters within and upon it have been the core of their identity and way of life since time immemorial. The preservation and wellbeing of these waters is

our children's birthright and they must remain clean and healthy so that they can sustain our grandchildren and our grandchildren's grandchildren.

- There is a history of placer mining in Kaska Territory, and given this history there is grave concern that placer miners may return to their Traditional Territory.

Legal Perspectives

- The KPMA respectfully disagrees that regulating activities within wetlands falls squarely into the jurisdiction of the Board.
- In the view of KPMA, the questions that the Board has asked the Parties to address in this proceeding, as well as the Draft Wetland Guidelines, are beyond the jurisdiction of the Board under the *Waters Act*.
- KPMA requested confirmation that licences granted prior to the Board Wetland Guidelines (historically licenced operations) will be grandfathered.
- In this public hearing the Board determined it had jurisdiction over wetlands under the *Waters Act* which is an error in the Board's assessment of its jurisdiction that is open to a court challenge according to the KPMA.
- First Nations Final Agreements promise protection of the water and their way of life. These Agreements also promise that cultural and spiritual connection to traditional territory will not be severed.
- To be consistent with FNNND's Final Agreement, the overall objectives for wetlands management on a watershed scale should be no net loss of wetland function.
- The spirit and promise of First Nations Final Agreements must drive every decision made by the Yukon Water Board and by all the co-management bodies in Yukon.
- In making decisions on applications for placer mining in wetlands, the Board is acting on behalf of the Crown and has the duty and the authority to ensure that it carries out its responsibilities in a manner that is consistent with and upholds constitutionally protected Aboriginal and Treaty Rights.
- The Kaska have never ceded, surrendered, or extinguished their original title or their associated rights to make decisions about the land, rights to the natural resources on the land and to carry out their traditional practises.
- There are no reclamation plans that will sufficiently mitigate the environmental and socio-economic impacts and the rights contained in First Nations Final Agreements.
- The placer mining industry requires simple, affordable, effective and easily understood and enforceable guidelines.
- In making decisions on applications for placer mining in wetlands, the Board is acting on behalf of the Crown and has the duty and the authority to ensure that it carries out its responsibilities in a manner that is consistent with and upholds constitutionally protected Aboriginal and Treaty Rights.
- LFN's position is that reclamation must restore ecosystem functions to a condition that supports the ongoing and the meaningful exercise of Kaska rights.

5 HEARING THEMES

The Board developed a series of Hearing Themes to provide context for the major issues presented by the Parties and to summarize what the Board heard throughout the Hearing process.

Readers Note:

It is important to understand that the Hearing Themes are summaries of the information that was presented by the Parties throughout the Hearing process and does not reflect opinions of the Board, nor has the Board sought to verify the information presented.

5.1 THEME 1: POLICY CONSIDERATIONS

The Board heard that governments are involved in many policy processes associated with placer mining in wetlands. Some of these processes include regional land use planning, the Yukon Wetlands Policy and the Indian River Interim Approach. The Indian River Interim Approach has YG's goal of protecting 100% of bogs and 40% of fens from disturbance by placer mining.

The Board heard that clear reclamation goals for wetlands should be established so that appropriate monitoring goals and techniques can be utilized.

The Board heard that the balance of a healthy placer mining industry that provides local employment and financial support for Yukon based services, along with conservation measures to ensure that environmental and cultural thresholds are not exceeded, are policy related issues that require attention by all governments to provide guidance for the water licensing process and for the inspection and enforcement of licence conditions. This would require providing the placer mining industry with clearly enforceable conditions and active inspections to ensure that these conditions are met.

5.2 THEME 2: INDIGENOUS TREATIES AND RIGHTS

The Board heard that placer mining in wetlands directly affects First Nations' Aboriginal and Treaty rights, and Aboriginal title. The Board also heard from both First Nations with Final Agreements and those without that the First Nations are co-managers and joint decision makers with respect to activities that affect their territories.

The Board heard that YFNFAs recognize and protect a way of life that is based on an economic and spiritual relationship between First Nations and the land. Impacts of placer mining to wetlands can compromise stewardship, and spiritual and traditional uses, of the land. From First Nations with YFNFAs, the Board heard that fulfillment of YFNFA commitments, such as the completion of land use planning are required before the Board continues to issue water licences.

From First Nations that do not have Final Agreements, the Board heard that placer activities in their traditional territories should not be authorized without the First Nations' consent.

5.3 THEME 3: INFORMATION REQUIREMENTS FOR WATER LICENSING

The Board heard that the placer mining industry is looking for a standard template model for Wetland Guidelines and standard reclamation practices that can be used for all placer mining water licence applications. The Fish Habitat Design, Operation and Reclamation Workbook and Worksheets for Placer Mining and the KPMA Best Management Practices (BMPs) for reclamation were used as examples of the type of information that should be required for water licence applications. However, the Board also heard

that other Parties, such as TH, are looking for detailed information in water licence applications as well as planning for no net loss of wetland functions.

The Board heard that requiring the placer industry to collect and report detailed baseline information in support of water licence applications would be a significant shift in procedure with cost challenges which could affect the viability of the placer mining industry. There is also concern by industry that requiring the submission of additional technical information due to Draft *Wetland Information Guidelines* duplicates the requirements of the YESAA process, Fish Habitat Design Worksheets and water licensing application documents.

The Board heard that the systematic description and mapping of wetlands through YG programs is important information to assess the effects of placer mining on a watershed basis. Wetland mapping programs would provide an understanding of biophysical conditions for individual applications as well as implications on a watershed basis for the assessment of short term and long-term environmental effects of placer mining in wetlands.

5.4 THEME 4: WETLANDS RECLAMATION

The Board heard that progressively reclaiming placer mines as part of an approved mine plan is generally followed and in the case of wetlands, this is not “like for like” reclamation due to the difficulty of restoring landforms that have taken thousands of years to form. Most placer mines reclaim wetlands into an open water shallow pond and marsh system that if done properly, has some biodiversity attributes that are seen as positive by some.

The Board heard that reclamation plans should be ecosystem based to maintain pre-development conditions as much as possible and given that the overall effects on a watershed basis are not clear, a no net loss of wetlands function and offsetting should be considered in reclamation plans. The effects of replacing certain wetlands with open water shallow ponds is not seen as positive change by First Nations and others who have relied on established wetlands to maintain ecological integrity as well as traditional activities such as hunting, gathering, navigation and cultural needs.

The Board heard that developing watershed objectives for wetlands reclamation should be considered for decisions on individual placer water licence applications. The development of watershed reclamation objectives for placer mining in wetlands would require the assessment of cumulative effects that would require an analysis of each placer mining application with predictions of the effects over the duration of approved licences in comparison to other producing mines and the likelihood of future applications.

The Board heard that the approach of “passive reclamation” does not provide optimal reclamation conditions. The Board also heard that other jurisdictions have developed wetlands reclamation techniques that should be investigated and tested for their suitability and effectiveness in Yukon. In addition, the management and monitoring of reclamation programs with regulatory reporting is important to determine short term effectiveness and long-term benefits.

5.5 THEME 5: CONSERVATION AND DEVELOPMENT OF WETLANDS

The Board heard that the conservation and development of wetlands requires a system to assess the cumulative effects on a watershed basis for placer mining applications. A systematic method of assessing cumulative effects for existing and future projects requires developing approaches and techniques with the Parties. The Fish Habitat Design, Operation and Reclamation Workbook and Worksheets for Placer Mining has been cited as an approach that could work for wetlands disturbances from placer mining. The key aspect of this model is a check list and standard form approach that is attractive to industry. However, the Board also heard that wetlands management requires the assessment of several factors including,

landform classification and permafrost characteristics, distribution of wetland types, predicted hydrological and hydrogeological characteristics, ecosystem attributes, traditional use, extent of wetlands disturbances from past, present and potential future mine development and others.

The Board heard that the utilization of traditional knowledge for the management of wetlands is also important for assessing the effects of placer mining on a watershed basis. This is needed to avoid sensitive areas and to provide protection for culturally important activities. Adaptive management was described during the Hearing as a possible technique for monitoring the effectiveness of water licence conditions including reclamation plans.

The Board also heard that the “Precautionary Principle” and no net loss of wetlands function should be used for making decisions, but there is disagreement between the Parties on this concept that would require clarification in terms of extent, scope and applicability to water licence conditions.

5.6 THEME 6: FINANCIAL IMPLICATIONS

The Board heard that the majority of the placer mining operations are family run businesses with limited ability to raise capital resources for additional regulatory requirements such as the hiring of consultants and field baseline programs which requires instrumentation and equipment.

The Board heard that the cessation of placer mining in wetlands could result in a significant reduction of placer gold production. The ability of industry to accommodate increased financial burden is related to the size and scale of operations and smaller family operations do not have the ability to bear additional financial burdens. This would have a profound negative impact to Yukon’s economy including the employees and services vendors that rely on this industry for their livelihood.

The Board also heard that there are financial implications for First Nations governments when dealing with water licence applications and little return on revenue from royalty payments

6 SUMMARY OF REPRESENTATIONS

This section of the report summarizes presentations and written submissions by the Parties who participated throughout the Hearing process. Concise summaries from the Virtual Hearing presentations and transcripts are provided as well as summaries of the information provided in response to IRs and other information such as technical reports, letters and e-mails provided by the Parties.

Readers Note:

Throughout the Summary of Representations Section there is language taken directly from the Virtual Hearing Transcripts, presentations, and written interventions to ensure accuracy. Where appropriate paraphrasing is also used to summarize interventions by the Parties. Please note that these summaries do not reflect opinions of the Board, nor has the Board sought to verify the information presented.

6.1 YUKON CONSERVATION SOCIETY

Representation Summary

Sebastian Jones, a fish, wildlife and habitat analyst with the YCS presented the views of this organization. Mr. Jones summarized that YCS is one the oldest environmental organizations in Yukon that has a focus on ecosystem well-being with a recognition that human well-being is ultimately dependent on a fully functional and healthy ecosystem. YCS has been engaged with the issues around wetlands and placer mining for several years. Mr. Jones commented that most wetlands in the Yukon are still intact, however, one form of development that usually takes place in wetlands is placer mining.

Mr. Jones also noted that wetlands in the Yukon have no special status and no protection, despite the valuable role they play. In recent years, YCS, and First Nations, such as TH, have raised concerns about the wholesale loss of ancient wetlands in the Indian River Valley, one of the largest wetland complexes in Yukon Beringia.

Mr. Jones indicated that YG is currently working on a wetlands policy, which will set some boundaries around what activities can take place in wetlands and set aside some wetlands as being of special importance. He also acknowledged that the Board has made considerable effort towards requiring placer miners to produce work plans for avoiding wetlands or minimizing effects on wetlands.

Mr. Jones summarized that YCS is extremely concerned with the current state of affairs, where affected First Nations, mandated boards and committees and other stakeholders have little-to-no input on reclamation plans. He noted that the Board been declining to approve disturbing Indian River wetlands without a proven reclamation plan, but the Yukon Environmental and Socio-Economic Assessment Board (YESAB) has also been recommending against further disturbance, degradation and destruction of these wetlands, as have First Nations and conservation groups and DUC.

On behalf of YCS, Mr. Jones indicated that he was pleased to have this opportunity to suggest items for inclusion in Board guidelines for wetlands. He indicated that YCS sincerely hopes that this Virtual Hearing rapidly expedites the resumption of the proper role of the Board in considering and approving wetlands reclamation plans.

YCS expressed concerns with the Interim Wetland Approach for the Indian River and does not view this as a good example of policy and should not form the basis for Board Wetland Guidelines. YCS summarized that this approach assumes (without evidence) that up to 60 percent of a fen can be lost without affecting

the remaining portion and that the water table will not retreat. These Guidelines appear to assume that impacts to wetlands will stop at the edge of the mine cuts.

YCS also expressed concern that the current Guidelines do not consider broader effects on wetlands hydrology, and do not provide for the maintenance of permafrost or the flow of water over and through adjacent land. YCS concluded their presentation by commending the Board for considering the long-term health of Yukon Wetlands as well as the short-term economic interests and for convening the Virtual Hearing. YCS also commented, “they are firmly of the opinion that whenever the light of day is shone onto contentious issues such as this, whenever all the costs and benefits of decisions are laid out plainly for all to consider, the land, the water and the long-term health of its peoples benefit.”

Hearing Questions

WHAT INFORMATION SHOULD BE REQUIRED TO SUPPORT A WATER LICENCE APPLICATION RELATED TO PLACER MINING ACTIVITIES IN WETLAND AREAS?

Wetlands Reclamation Plans should include:

- Adequate security to perform the approved reclamation plan should something happen to the proponent.
- Reclamation should be progressive in nature.
- An ecosystem approach, where the goal of reclamation plans is the restoration of the original ecosystem.

The following are items that YCS considers should be included in Wetlands Reclamation Plans:

- Wetland Quantum:
 - Number of hectares of each wetland type in the licence area.
 - Extent of undisturbed and disturbed areas for each wetland type.
 - Calculation of amount of each wetland type that will be disturbed.
 - Calculation of amount of each wetland type that will remain once mining and reclamation is complete.
- Disturbance:
 - Describe the nature of the disturbance of all unmined wetlands and provide a rationale for why they should be considered previously disturbed.
 - Describe the nature of the disturbance for all wetlands proposed to be disturbed.
- Hydrology:
 - Describe the effects of disturbing wetlands on the hydrology of the area, including the impact on nearby wetlands that may not be inside the perimeter of the application area.
 - Describe how connectivity between wetlands will be maintained.
 - Describe how any changes to water table level; ground water or hyporheic flow will be restored. (*Note: The hyporheic zone is the stream bed area where there is mixing of shallow groundwater and surface water.*)
 - Describe anticipated changes to the ability of the undisturbed wetlands to filter water, regulate water flow, sustain water flow and sustain water quality.
- Climate impacts:
 - Calculate the amount of carbon stored in each wetland type in the area.
 - Calculate the carbon sequestration rate of each wetland type in the area.
 - Calculate the amount of carbon that will be released upon disturbance of the wetland, including carbon released from nearby wetlands that might be dewatered as a result of the changes to the hydrology.

- Calculate the carbon sequestration rate of any reclaimed wetlands.
- Calculate the date at which the carbon balance will be restored.
- Include any actions planned to offset any climate impacts.
- Reclamation:
 - Describe in detail how each type of wetland will be reclaimed including the class of each disturbed wetland that will be reclaimed.
 - The prediction for the water table post reclamation in comparison to pre- disturbance conditions.
 - The changes in biodiversity, post reclamation compared to pre disturbance.
 - How these changes will be achieved.
- Post Reclamation:
 - Describe how reclaimed wetlands will remain reclaimed, in other words, we need to know that after all the work and expense to restore functioning wetlands, they will not be disturbed again.
- Reclamation is required such that the applicant has goals for reclamation and that wetlands will continue to exist on the land base. Passive reclamation is a euphemism for walking away and letting natural processes reclaim what nature originally created over thousands of years.

Board Questions

BOARD MEMBER- MR. WARNSBY:

Thank you, Mr. Chair. Mr. Jones, a query: You spoke about the baseline and the need to look at prior disturbances in addition to current disturbances. I'm wondering when is the appropriate baseline for consideration of disturbances within a wetland complex, and how do we – as an evidence-based board – properly determine that evidence and determine how we can determine that baseline? What are some of the factors we should use in making that determination to help us get the full understanding of the temporal impacts of disturbances on the wetlands? Thanks.

RESPONSE: MR. JONES:

Yes, that's a surprisingly difficult question to answer, isn't it? In wetlands that are far away from any disturbance, you can just take a snapshot of the current conditions, and that will form the baseline, and it's pretty straightforward. But in a places such as the Indian River, where there have been decades of exploration before even the mining started, there is a pretty grey and fuzzy line between what is an undisturbed wetland and what is a disturbed wetland. So, the short answer to your question would be: Prior to any disturbance taking place, but we don't have a time machine. We can't go back and look at the conditions from 40 or 50 years ago. It's just not feasible. So, the best we can probably do is look at the conditions now. There are places where you can see that there's been exploration taking place and that the wetlands don't look quite the same as they were before. The key, I think, would be: Is it still functioning as the class of wetland that it was functioning as beforehand. That's my best answer. Thank you.

BOARD CHAIR: MR. MCDONALD:

Thank you. Are there other questions? Maybe I'll ask a quick question here. Given what you understand to be the state of mapping in the Indian River area and the background data that's been collected to date, can you comment on what you think of the adequacy of the current state of mapping and the information that's currently in place to be able to provide appropriate background?

RESPONSE: MR. JONES

Sure. I'm aware of three different sets of maps of wetlands in the Indian River, that is, the predictive mapping that Jeff Bond did that was referred to in Scott Smith's presentation. There's also Karen

McKenna's wetlands classification; and the Yukon Government has wetlands, too, on a database. The most accurate one in my opinion is Karen McKenna's wetlands mapping.

BOARD MEMBER: MS. LECKIE

Thank you so much for that, Sebastian. Your comment there about the reclamation plans need to include the three things: the financial guarantee, they need to be progressive and completed, and they need to be holistic. I think I might have missed the definition of 'holistic'. I think I went on to understand that, you know, you meant, like, looking at the climate impact and the disturbances, but what does 'holistic' mean to you?

RESPONSE: MR. JONES

One has to be brief in our presentation. We can't dive into these things as much as one could. By 'holistic', I mean that you can't plunk a reclamation plan down into the middle of a wetlands complex and expect it to be sufficient in and of itself. It has to be in the context of the surrounding lands. So, when a wetland is disturbed, and then, reclaimed, there will be effects that reverberate beyond the boundaries of the placer claims or beyond the boundaries of the mining cap, and these need to be taken into account. So, that's what I mean by 'holistic'. I hope that clarifies things a bit.

BOARD MEMBER: MS. LECKIE

It does, thank you. I was just wondering in the course of something that goes through our minds, as well, you have a specific application in. You're looking at that application, but then, wetlands don't stop at the border of the application, right? So, how, then, do you create guidelines that take into account the larger context, and I thought for a moment there you might have had the magic bullet.

RESPONSE: MR. JONES

I will work on that, how's that?

BOARD MEMBER: MS. LECKIE

Okay, thanks.

Closing Remarks

Mr. Jones provided the Closing Statement for YCS and provided a focus on wetland conservation and reclamation objectives. He summarized that the objective for wetlands reclamation should be that they function as they did before disturbance. If, it is impossible to reclaim peatlands, then they should probably not be disturbed. At the very least, the land should be left in a state, that promotes wetland reclamation to its original state, and not into a mix of ponds and uplands. YCS believes that the Yukon Water Board has the jurisdiction over wetlands. Wetlands are defined by water, and the Yukon Water Board deals with water. YCS also noted that since 2013, YESAB has been recommending that placer miners avoid Indian River wetlands. YCS finished their Closing Remarks by agreeing the best way forward is to work together with a way forward to protect wetlands.

Additional Intervention Information

December 14, 2020 Letter to the Chair, Yukon Water Board

Summary: This letter provided written comments around Context and Scale and when should placer mining projects not proceed. The Context component reviewed the risk-based model as a system that allows projects to proceed with more stringent mitigation as the risk increases. YCS advocated for using the Precautionary Principle where the environment is at risk and it is not known how to avoid the risk, the action should be avoided. YCS also raised the issue of the benefits of mining wetlands for all people including the TH. In terms of scale, YCS summarized Canada's commitment to conserving 25 % of its land by 2025 and 30 % by 2030. They also referred to scientific papers that conclude a minimum of 50 % of the

earth must be left in a natural state. YCS concludes that wetlands are of such great importance that they should be left undisturbed. YCS closed their letter by recommending, “that the Board take a generous view of how its mandate to protect waters fits into Canada’s present and future obligations to protect land and ensure that almost all wetlands be left undisturbed.”

Summary Responses to Information Requests

GENERAL QUESTIONS

1. What is the appropriate temporal and spatial scope for baseline wetland information required for an application for placer mining in wetlands?

Response: Baseline information should be collected prior to any disturbance at the initial staking stage. If this is not possible, baseline information should be collected prior to advanced exploration. The entire claim must be assessed as well as contiguous wetlands for hydrology and downstream effects.

2. Given the status of wetland mapping in Yukon:
 - a. What wetland mapping information should be required as part of an application for a water licence?

Response: Detailed and peer reviewed wetland mapping similar to McKenna’s work by a qualified and independent professional should be sufficient.

- b. Who should provide that information and when?

Response: This information should be available at the YESAB stage of an application.

3. What post-reclamation monitoring is required to verify that wetland reclamation techniques are effective? Who is responsible for verification?

Response: The Regulator should visit the site annually for at least 5 years until the wetland has been assessed as fully reclaimed.

4. What requirements in a licence or mining land use authorization would improve effectiveness of wetland reclamation and that reclamation objectives are achieved post-mining?

Response: Reclamation plans need to show how the reclamation will be completed before the end of the licence term. It is also prudent to require security to ensure that a proponent has adequate resources to perform the reclamation.

5. Because techniques of placer mining reclamation of wetlands transform bog and fen wetland types to marsh and shallow water bodies:

- a. How does this transformation on a claim-by-claim basis affect the watershed-scale wetland ecosystem?

Response: It was suggested that a similar approach be developed as the Fish Habitat Management System for Placer Mining (FHMSFPM) which was adopted around the Canadian Aquatic Biomonitoring Network or CABIN.

- b. Are shallow water bodies and marsh wetland types over-represented because of reclamation and what is the cumulative effect?

Response: The only type of wetlands left after placer mining are ponds as illustrated in the Klondike Valley near Dawson City. The cumulative effects will be changes in the abundance and distribution of wetland dependent species. A robust system of cumulative effects will require thresholds of disturbance for plants, birds and animals.

- c. How does the transformation affect wildlife?

Response: This depends on the species. The transformation of bogs into ponds, marshes and uplands could negatively affect Caribou as they require undisturbed moss versus moose who rely on early stage shrub growth and may do well.

6. Can the utilization, development and conservation of wetlands be achieved using a management approach similar to the DFO watershed authorization model?

Response: Yes, if it is carefully designed, adequately resourced, and properly implemented. Baseline conditions will need to be understood and adaptive management will require an increase in monitoring and performance assessments.

7. How does the cost of reclamation for a placer operation in non-wetland areas compare to the cost of reclamation of wetlands?

a. What is the economic impact of reducing mining in wetlands?

Response: The cost of reclamation on wetlands will be higher and the economic impact on placer mining will be negative. An assessment of ecosystem services of a wetland complex might demonstrate that the negative effects of the changes to the environment outweigh the economic benefit to the miner.

b. If security is required for a placer undertaking, what information is required to calculate it for reclamation of wetlands?

Response: The number of person and machine hours to design and implement a plan and the cost of post reclamation monitoring

8. Can the use of adaptive management plans mitigate adverse effects to wetlands from placer mining?

Response: Not really. Adaptive management does not mitigate effects that have already taken place but adequately resourced and applied adaptive management can prevent future damage.

9. Indigenous Knowledge (IK) was raised as a source of information to help understand landscape connectivity. Please provide information on how the Board could incorporate IK on an application-by-application basis and when IK should be provided.

Response: IK belongs to the holder of the knowledge and at times, their First Nation. Using IK will require consultation and working with the knowledge holder and should be sought at the start of the process when claims are staked.

6.2 CANADIAN PARKS & WILDERNESS SOCIETY

Representation Summary

Randi Newton, the Conservation Manager for the CPAWS presented their views at the Hearing. She described CPAWS as, “a conservation organization that works to protect land, water, wildlife for current and future generations by advocacy, engaging in public processes and working with First Nations and all levels of government, as well as other organizations.” CPAWS, Yukon does not typically intervene on individual water licence applications due to volume but felt it was important to present at the Virtual Hearing due to the potential impacts on wetlands on a landscape scale as a result of the large number of placer mining applications received by the Board.

Ms. Newton commented that most obvious example of impacts on wetlands is the mining activity in the Indian River watershed and noted that 100 percent of unmined wetlands in this watershed are covered by placer mining claims. The following are summary bullets made during the CPAWS presentation:

- Many of the peatlands impacted by placer mining will be converted to shallow, open water, marshes or even dryland habitat.

- Even with reclamation mining is changing the function of these landscapes at a large scale and changing how it functions in terms of water movement and storage, carbon storage, biodiversity, cultural values and how people use and relate to that landscape.
- There is concern that the transformation is occurring without baseline surveys to understand the impact on wetlands that are being mined.
- There is concern about the policy of approving project-by-project licences without the guidance of a land use plan.
- The hope for the Virtual Hearing is that it is a step towards building a policy and management framework that can consider cumulative effects from mining, a diverse set of values, honours the Umbrella Final Agreement (UFA) and aboriginal rights and take a “precautionary approach” prior to the establishment of thresholds that all the Parties can agree on.
- CPAWS recognized that the Board and YESAB have tried to take a precautionary approach in development in wetlands in the Indian River watershed in those unmined wetlands.
- There is a need for comprehensive information, an ability to evaluate cumulative effects, and predict reclamation outcomes.
- Management objectives that permit some loss of benefits should only be set through land use planning or deep consultation to avoid crossing ecological or cultural thresholds.
- The effects of placer mining should include ecological, social and cultural values of wetlands at both a project scale and a watershed scale.

Hearing Questions:

QUESTION 1. WHAT INFORMATION SHOULD BE REQUIRED TO SUPPORT A WATER LICENCE APPLICATION FOR PLACER MINING IN WETLANDS?

- There is the need for comprehensive baseline information to capture the complexity of wetland systems. Wetlands are connected hydrologically to the land and biological systems and are intertwined with social and cultural values. CPAWS also acknowledged that some baseline information is challenging or impossible to collect at a project scale.
- Wetlands are complex systems and comprehensive baseline information is required to capture that complexity to make good decisions. Wetlands are connected to each other by water flows above and below ground. They are also connected to biological systems and are intertwined with social and cultural values.
- Best efforts should be made to map traditional land use and summarize traditional knowledge to capture the importance if Indigenous peoples place on the land within and adjacent to a project area.
- The following are some examples of traditional activities and knowledge that should be included in water applications:
 - Traditional subsistence hunting grounds.
 - Traditional subsistence foraging grounds.
 - Areas of traditional gathering.
 - Areas of spiritual importance.
 - Areas of traditional settlements (seasonal or permanent).
- Traditional baseline information should detail the cultural significance that any Indigenous group places on the Project Area, past or present.
- Details of both the physical and spiritual aspects of an area should be identified.

QUESTION 2. WHAT SHOULD THE WETLAND CONSERVATION, DEVELOPMENT AND UTILIZATION OBJECTIVES BE ON A WATERSHED BASIS AND HOW CAN THEY BE BALANCED ON AN APPLICATION BASIS?

- There was acknowledgment that this is tough question for the Board as they are tasked with making decisions that provide optimum benefit.
- Access to baseline is very important and thinking must be on the long term. Scenario modelling which is used for land use planning should be considered to provide a framework to make decisions on an application-by-application basis.
- Many of the Boards decisions are ahead of completed land use plan and as a result it is suggested that conservation, development and use objectives align with the broader goals of land use planning.
- CPAWS believes that an approach of no-net loss of wetland benefits is the best approach and that ecological function and social and cultural values that may be lost can be restored. This is the approach that is being used for the Yukon Wetland Policy.
- For the Board to make this type of assessment, they require the appropriate type of information to evaluate and predict cumulative effects using a diverse set of values and the ability to predict reclamation outcomes. If this information is not available, the Board needs the ability to pause decisions on mining in undisturbed wetlands until a suitable management framework is in place through land use planning or consultation.
- CPAWS also recommended that a proper wetland inventory be in place to ensure that ecological or cultural thresholds are not crossed.

QUESTION 3 – WHAT WETLAND RECLAMATION OBJECTIVES SHOULD BE CONSIDERED DURING THE WATER LICENSING PROCESS?

- The objective of no-net loss of wetlands should apply to reclamation. This does not necessarily mean restoring a wetland to its original condition, which is often impossible to do.
- Reclamation of land should bring back benefits that have been lost and avoiding or minimizing a loss of these benefits in the first place.
- In cases where it is not going to be possible to restore benefits in any reasonable timeframe, any wetland disturbance should either be avoided unless there's a management framework that everybody can agree upon such as a land use plan or a management threshold. It is possible that some watersheds, such as the Indian River watershed, have already approached that threshold of acceptability.
- There also need to be clear targets for reclamation end points to determine that a site is reclaimed.
- Reclamation is also risky because there is an issue of cumulative effects and the timeframe needed to monitor success of reclamation well beyond project timelines.
- There needs to be a comprehensive wetland inventory and monitoring program with clear responsibilities to evaluate the effectiveness of mitigation and reclamation at the project scale and the watershed scale.
- It is recognized that parts of these recommendations might extend beyond the immediate authority of the Board, but it is a critical piece for informed decision-making by the Board, and also, to hold people in organizations accountable to meet objectives and goals that will come out of this Virtual Hearing and the Wetlands Policy.
- In addition, publicly reporting on wetland impacts and reclamation success is important.
- Reclamation objectives must be supported by comprehensive monitoring program and assigning responsibility.

- Reclamation should answer key questions:
 - How has the landscape and wetland system changed?
 - Did mitigations and licence terms work as we thought they would?
 - Did reclamation work as we thought it would?
 - Have we maintained or restored the values that we thought we would?
- Assign responsibility for monitoring and reporting at a project scale (proponent) and at watershed scale (government).
- Establish clear responsibility for reclamation success (e.g., financial security or reclamation fee).
- Plan in place if mitigations or reclamation not working as expected.

Board Questions

BOARD MEMBER: MR. WARNSBY

Thank you for your presentation, Ms. Newton. Just a query: When I was listening to you, you were speaking about a lot of this extension of authority by the commissioner in council, and obviously, as you'll be aware, that's not necessarily an authority that will a guarantee for the Board. So, I would perhaps just like to ask you if that isn't a forthcoming option, how can the Board better evaluate on a case-by-case basis on single applications, considering all this has to do with watersheds, if the authority you referenced is not actually forthcoming to the Board? Thank you.

RESPONSE: MS. NEWTON:

Thank you for that question. Yes, in this presentation, I think I chose to present what would be the optimal option where the Board has the best information to make these types of decisions. Understanding that that may not happen, I think the Board might have to determine if it has enough information to issue water licences for placer mining activity in unmined wetlands. I do think out of this hearing, the information presented will help to improve the guidelines that the Board has drafted and lead to better consideration of applications on a case-by-case basis; but ultimately, I think if the Board is trying to make optimal decisions, that's difficult to do without having a good understanding of the values that are going to be impacted.

Closing Remarks

Ms. Randi Newton provided the closing remarks for CPAWS Yukon. She thanked the Board for the opportunity to provide closing remarks and thanked all the Parties for their presentations. She summarized that placer mining is transforming landscapes, including their functions and benefits, without the baseline information to know what is being changed and without an understanding of ecological thresholds or the thresholds have changed that people find acceptable. Ms. Newton also summarized that there should be a no net loss of benefits as an objective, that the Precautionary Principle be followed and that licensing decisions be paused until land use planning provides a framework to make decisions in alignment with Final Agreements and aboriginal rights.

Ms. Newton also clarified that traditional knowledge is critically important for decisions by the Water Board along with other information such as hydrological and ecological information at a watershed scale. Ms. Newton commented that the Board should not wait for the Wetlands Policy to made decisions. The Wetland Policy is going to be a high-level, enabling framework that will not be legislative. and likely years away for a complete implementation plan.

Ms. Newton also summarized that the Board can start working on a Wetland Policy now through the following Guidelines for a Mitigation Hierarchy:

- Cumulative loss kept below ecological thresholds for the watershed.
- All projects should seek to minimize the loss of benefits.

- Loss permissible in some circumstances.
- Risk increases and probability of success decreases in each successive step of the hierarchy.
- Mitigation higher for wetlands in heavily impacted watersheds.
- Reclamation required for all non-permanent losses.

Ms. Newton summarized ‘Adaptive Management’ is a systematic approach for approving resource management by learning from outcomes. Adaptive management is going to be needed to achieve the objectives the Water Board adopts for wetland conservation. Adaptive management involves exploring alternatives to meet objectives, predicting the outcomes of alternatives, based on the current state of knowledge, implementing an alternative, monitoring to learn about the impacts of actions, and then, using the results to update knowledge and adjust management actions. It is a systematic, and rigorous process. Adaptive management requires a long-term commitment for agency funding, and a strong institutional framework. This approach will help to clarify the information that is required to evaluate a water licence application.

Clarity on information required for applications is required including thresholds for the requested information, guidance on data collection methods, and if this can be done by the applicant or must be done by a qualified professional. This clarity will help link projects to an adaptive management approach once land use planning or deep consultation has provided the framework.

Ms. Newton also summarized that the footprint and impact of placer mining on wetlands is an issue for First Nations including TH and the FNNND. She urged the Board to pause the processing of applications until decisions can be made with a full understanding of the impacts on wetlands.

Summary Responses to Information Requests

GENERAL QUESTIONS:

1. What is the appropriate temporal and spatial scope for baseline wetland information required for an application for placer mining in wetlands?

Response: Wetland decisions are best guided by watershed-specific management frameworks including disturbance thresholds. Spatial baseline is related to the information being provided such as hydrology for all areas that are directly connected to the wetland. Temporal baseline should be prior to disturbance.

2. Given the status of wetland mapping in Yukon:
 - a. What wetland mapping information should be required as part of an application for a water licence?

Response: Wetland mapping should be comprehensive to evaluate the cumulative contribution of placer mines on the ecological and socio-cultural values associated with wetlands. It was also recommended that indicators of ecological and socio-cultural health be developed through land use planning. The indicators should have thresholds and baseline mapping should be designed to ensure project impacts can be assessed. Information examples include hydrological connections, wildlife and fish habitat, vegetation and traditional use and cultural values.

- b. Who should provide that information and when?

Response: Mapping information should be provided at the YESAB stage of assessment. Placer miners are not well positioned to conduct mapping at a watershed scale. YG will likely have to undertake this mapping. Proponents should be responsible for mapping at the property scale and guidelines should clarify when this must be conducted by a Qualified Professional.

3. What post-reclamation monitoring is required to verify that wetland reclamation techniques are effective? Who is responsible for verification?

Response: Monitoring should be designed to measure if projects are meeting reclamation objectives and milestones. Results should be assessed by qualified experts that are reported to regulators and be publicly available.

4. What requirements in a licence or mining land use authorization would improve effectiveness of wetland reclamation and that reclamation objectives are achieved post-mining?

Response: Wetland reclamation plans should align with wetland reclamation standards and objectives. Adequate security is required with progressive reclamation and review of plans to determine if updates are required. It was recommended that regulatory agencies and First Nations meet regularly (e.g., every 5 years) to review a wetland reclamation management framework.

5. Because techniques of placer mining reclamation of wetlands transforms bog and fen wetland types to marsh and shallow water bodies:

- a. How does this transformation on a claim-by-claim basis affect the watershed-scale wetland ecosystem?

Response: Transformation on a claim-by-claim basis has led to a 2.8 % land disturbance in the Indian River drainage which exceeds the 1 % disturbance threshold set for Intensive Management Areas for land use planning in the Peel Watershed.

- b. Are shallow water bodies and marsh wetland types over-represented because of reclamation and what is the cumulative effect?

Response: As placer mining proceeds, shallow water bodies and marsh wetlands become over-represented. Peatland restoration is not feasible for placer miners. This can result in changes in water flows, increased risk of flooding, sedimentation in water course, release of carbon and loss of carbon sequestration and risk of trophic cascades.

- c. How does the transformation affect wildlife?

Response: The effects on wildlife will vary on a regional basis. Caribou will be affected in areas of disturbed habitat.

6. Can the utilization, development and conservation of wetlands be achieved using a management approach similar to the DFO watershed authorization model?

Response: An approach similar to the DFO watershed authorization model could be part of wetland management after watershed disturbance thresholds are set and wetland protection implemented.

7. How does the cost of reclamation for a placer operation in non-wetland areas compare to the cost of reclamation of wetlands?

- a. What is the economic impact of reducing mining in wetlands?

Response: Reducing mining in wetlands will reduce the amount of gold that is produced. However, reducing mining in wetlands could have a positive economic impact considering the costs to government and First Nations to respond to issues, opportunity costs and ecological and social costs.

- b. If security is required for a placer undertaking, what information is required to calculate it for reclamation of wetlands?

Response: Security must be tied to effort such as person hours, equipment, materials and others that are required to meet reclamation objectives.

8. Can the use of adaptive management plans mitigate adverse effects to wetlands from placer mining?

Response: Adaptive management requires measurable objectives that are set through land use planning or other similar processes. Adaptive management involves exploring alternative ways of meeting management objectives and predicting outcomes based on knowledge, implementing alternatives, monitoring, and using results to update knowledge and adjust management actions. Adaptive

management will require coordination between YESAB, YG and the Water Board. Adaptive management will be a useful tool once land use planning has established wetland objectives.

9. Indigenous Knowledge (IK) was raised as a source of information to help understand landscape connectivity. Please provide information on how the Board could incorporate IK on an application-by-application basis and when IK should be provided.

Response: The Water Board and Government must honour Indigenous Knowledge, final agreements, and Aboriginal rights by acting in partnership through co-development of policy and land use planning.

6.3 YUKON GOVERNMENT

Representation Summary

YG had following list of presentations for the Virtual Hearing:

1. Introductions and Context– Mr. John Bailey, Deputy Minister, Environment.
2. The Geology of Placer Deposits and Wetlands in the Indian River Valley- Mr. Jeff Bond, Manager Surficial Geology, Yukon Geological Survey.
3. Indian River Interim Approach- Mr. Todd Powell, Director Mineral Resources and Mr. Nathan Millar, Director Strategic Alliances, Energy Mines and Resources.
4. Yukon Wetlands Policy- Mr. Tyler Kuhn, Senior Biologist, Environment.
5. Yukon Government Representation to the Board - Mr. John Bailey, Deputy Minister, Environment.

Mr. John Bailey, Deputy Minister, Environment thanked the Board for holding the Public Interest Hearing on placer mining in wetlands. Mr. Bailey further indicated this Virtual Hearing was an important step for all parties to provide representation and share perspectives, concerns and information and to listen to one another.

Mr. Bailey summarized that YG supports the development of guidance materials to inform proponents on what is required to support a Water Licence application. He further indicated that YG has provided comments on the Board's Draft Wetlands Information Guidelines and affirmed their commitment to continue working collaboratively with the Board on this initiative.

THE GEOLOGY OF PLACER DEPOSITS AND WETLANDS IN THE INDIAN RIVER VALLEY. MR. JEFF BOND, MANAGER SURFICIAL GEOLOGY, YUKON GEOLOGICAL SURVEY.

Mr. Jeff Bond introduced himself as the Head of the Surficial Geology Unit with the Yukon Geological Survey. Mr. Bond indicated that the Geological Survey spends a considerable amount of time working with placer miners, and in particular the Indian River Valley. Mr. Bond outlined that his presentation would be building on the presentation by Scott Smith and will provide some details about the geology of the valley bottom fluvial deposits that underpin the wetlands in the Indian River area and other wetlands in the Klondike Plateau.

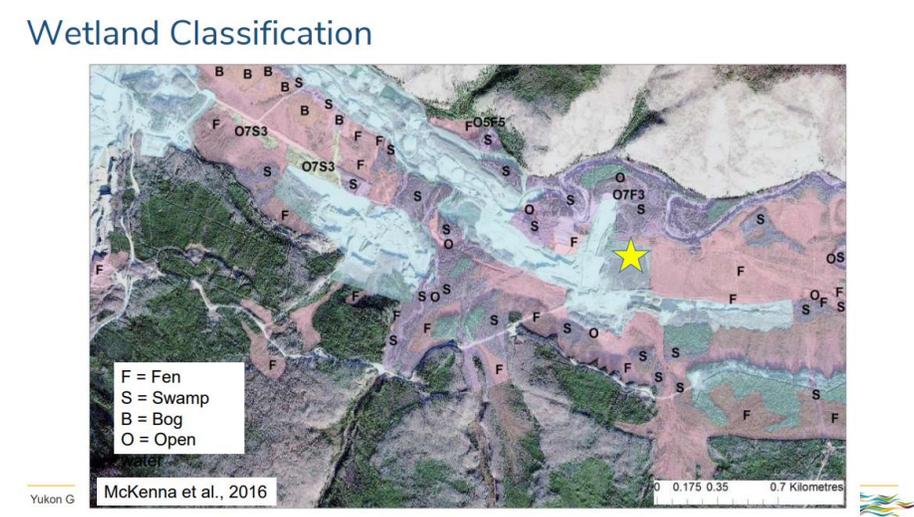
The purpose Mr. Bond's presentation was to help develop mining strategies to assist with reclamation techniques. He summarized that an understanding of the surficial geology in relation to wetlands is important and provides a better chance of achieving reclamation success. This is related to the third Hearing question.

The following are summary points from Mr. Bond's presentation:

- Wetlands in the Klondike Plateau (Dawson to Fairbanks):
 - Total area of wetlands = 5131 sq km.

- 5% of total landscape.
- 29% in Yukon portion.
- Indian R. wetlands are 0.05% of total.
- Total land disturbance = 274 sq km (0.27%).
- Placer Mining in the Indian River Watershed:
 - Approximately 2.1 million oz produced from 1897-present.
 - Modern value is \$3.7 billion.
 - 25 active operations.
 - 250 directly employed in 2019.
 - Producing 50% of Yukon's placer gold.
 - 232,000 oz reported in last 10 years.
 - Valued at \$408 million.
- The upper reaches of the Indian River drainage including tributaries like Australia Creek and Dominion Creek are wide, mature valleys. There are also low terraces on the margins. These upper reaches are dominated by fen-type wetlands and shallow, open-water wetlands close to the river.
- The middle section of the Indian River Valley is where the bulk of the placer mining is occurring. There is a similar landscape in this area where there is a high bench on the south side of the valley. The river tends to hug the north side of the valley, and a fen-dominant wetland occupies the bulk of the floodplain or the lower valley slopes.
- The lower regions of the Indian River Valley is where the river is incised into the surrounding bedrock and into old floodplain deposits. There are confined meanders with bedrock highs, and the landscape is much more drained. There are wetlands but they tend to be more restricted and proximal to the river.
- The Little Flake Mine study site (see yellow star on Slide below) is located just upstream from Eureka Creek and downstream from Dominion and Australia Creek at the confluence of the Indian River Valley. The wetland classification mapping that was completed in this particular area by McKenna (2016) shows a predominately fen landscape.

Wetland Classification



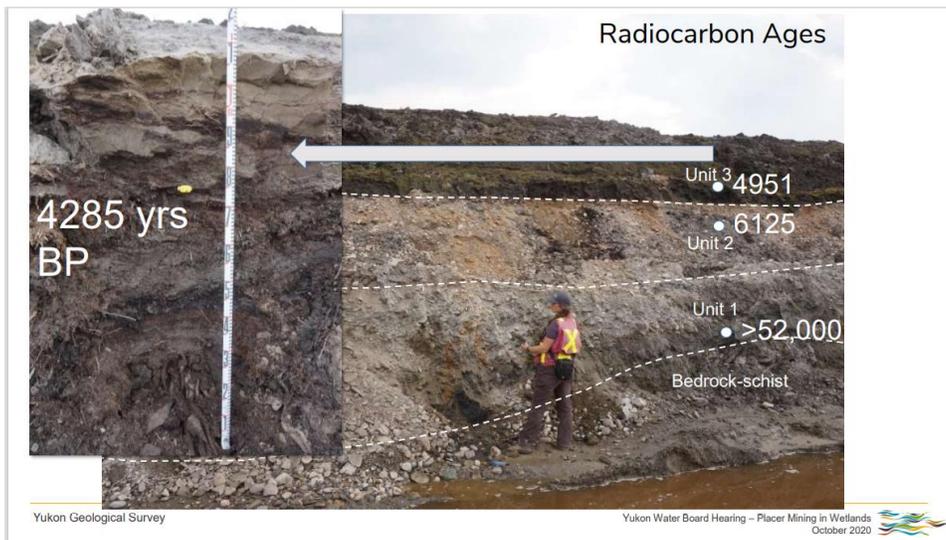
- The stratigraphy at the Little Flake Mine site is as follows (see Slide below):
 - Total section thickness is approximately five meters thick.
 - Unit 1 at the base of the section is a coarse gravel. This is the placer gravel deposit that is mined at this site.

- Unit 2 is finer-grain gravel which is much better sorted, iron-stained and does not contain as much gold as Unit 1.
- Unit 3 is interbedded silt and the peat layers.
- Overlying Unit 3 is approximately 60 centimeters of recent alluvium that forms the modern-day fen deposit.

Stratigraphy



- The Little Flake Mine study also included radiocarbon dating to understand the evolution of the upper silty material and organics and to get a sense of the age of the wetlands and placer deposits.
- The oldest gravelly material in the valley bottom near the bedrock contact is beyond the range of carbon dating which is greater than 52,000 years old before present. Unit 2 has carbon dates of 6,100 years old, 5,000 years old and 4,285 years before present. At the top of the section exposure there is organic material that dates to about 1,872 years old before present (see Slide below).



- Approximately 6,000 years ago peat started to accumulate with a shift in the hydrological balance and the soil moisture conditions.
- After 6,000 years ago, the Indian River was much more restricted to the north side of the valley with the deposition of silt and organic material and ultimately, wetlands.
- Climate models for 6,000 years ago for the northern hemisphere show a cooling trend.

- This corresponds to the deposition of silt that is interbedded with peat and permafrost development.
- This works shows that there were no wetlands in the geological record of the Indian River Valley prior to 6,000 years ago.
- The deposition of silt layers increases the soil moisture and facilitates the building of permafrost and ultimately peat accumulation. The slide below summarizes formation of wetlands in the Indian River valley.

The Slide below summarizes the geological observations for wetlands in the Indian River area.

Wetland Geology

- No wetlands recorded before ~6000 yrs BP (at this site)
- A change to a cooler and wetter climate (~6000 years ago) caused siltation onto the floodplain
- Silt layer increases soil moisture, facilitated permafrost and peat accumulation.
- Evidence of peat accumulation on 15 cm of silt (flat site).

Yukon Geological Survey

Yukon Water Board Hearing – Placer Mining in Wetlands
October 2020 

Hearing Questions:

QUESTION 3. WHAT WETLAND RECLAMATION OBJECTIVES SHOULD BE CONSIDERED DURING THE WATER LICENSING PROCESS?

- Understanding the geological conditions are important to help develop mining strategies and reclamation techniques.
- To provide favourable conditions to re-establish wetland soils in a post-mining environment the following should be considered:
 - Gently sloping to rolling surfaces, flat areas, and depressions.
 - Layers of silt and organics from material segregation during the mining process.
 - Establishment of connectivity to hillside hydrology. The time required for this is uncertain.
 - The establishment of permafrost is also a factor. There is evidence of re-establishing permafrost in the Sulphur Creek Valley where permafrost is redeveloping within mine tailings from the late 1950s. The proper restricting of the landscape should result in the regeneration of permafrost.
 - Building high-value shallow open water wetlands requires shallow depressions from settling ponds.
- Maximize soil-moisture hold capacity in reclaimed areas through top-coating with fines.
- Maximize potential for wet soils through landscaping but recognize that positive-relief landforms also result and offer soil diversity.
- Maximize hydrological connectivity of site to the valley sides (particularly north-facing slope).
- Recognize that with placer mining, wetland-type will likely change from fen dominant to marsh and shallow-open water dominant wetlands.

INDIAN RIVER INTERIM APPROACH. MR. TODD POWELL, DIRECTOR MINERAL RESOURCE NATHAN MILLAR, DIRECTOR STRATEGIC ALLIANCES, ENERGY MINES AND RESOURCES.

Mr. Todd Powell is the Director, Mineral Resources Branch, Energy, Mines and Resources, YG. His presentation was a summary of the Interim Approach to placer mining in wetland areas for the Indian River including the origins, goals, and implementation. The 'Interim Approach' was described as a short-term way to address the concerns that are specific to the Indian River and to address the balance of interests that overlap in this area with the variety of interests at play.

The following points are taken from the presentation for the Interim Approach to Placer Mining in the Indian River Area:

- The origin of the Interim Approach is from a Memorandum of Understanding between YG and TH in 2017. The memorandum was to make a policy and guidelines for the protection and reclamation of those wetlands found in the Indian River.
- There is a need to minimize the effects of placer mining activities in wetland areas and find a balance between wetland conservation and development.
- Effective January 15, 2020, the Interim Approach has been implemented by the Decision Body (Energy, Mines & Resources) and was referred to the Board for licensing.
- The licensing delegation for the placer mining authorizations to the Board from Energy, Mines & Resources is for efficiency reasons that dates to 2003. The Board adds terms and conditions to either the authorization and/or the water licence.
- New licences in the Indian River area are subject to several conditions.
- Decisions documents now include options to avoid mining in wetland areas altogether.
- This also includes area of wetlands in the Indian River that must remain undisturbed per claim block:
 - 100 percent of bogs must be avoided.
 - 40 percent of those fens must remain undisturbed.
- If wetland disturbance does occur or is planning to occur, then a reclamation plan for those wetlands must be submitted to the Chief of Mining Lands and be approved before that activity can take place, even though a water licence is in place.
- An approval is required for a reclamation plan even after the completion of a water licence before mining through those wetland areas.
- The Interim Approach to Placer Mining in the Indian River Area will continue to evolve with the development of a wetlands policy and guidelines for naturally occurring wetlands.
- Why is the focus on bogs and fens?
 - The discussions between YG, TH and many other parties pointed toward those peatland areas as the most difficult to reclaim.
 - Bogs, in the Indian River, are formed by permafrost and have different characteristics.
 - They are not particularly diverse but are rarer and more difficult to reclaim.
 - Fens are more extensive and diverse but are also difficult to reclaim.
 - The characteristics of bogs and fens provided the focus areas for preserving these wetlands in the Interim Approach for the Indian River area.
- A wetland reclamation plan must be developed for approval prior to any mining in wetlands identified within a claim block.
- Energy, Mines & Resources produced a 2016 wetlands map of the Indian River as an important resource that can be used for future reclamation activities.

- The “Ruby Creek Guidelines” also provides reclamation guidance in terms of how things must be done but where and when to form a wetland reclamation plan.
- Once a decision has been made to mine in the wetland as per the water licence conditions, it is required that the plan be sent to the regulator (Energy, Mines & Resources) with a verification map of their site at the start of their licence. This is required as many placer mining sites have been active for a long time. An accurate map of the site at the start of licence is required such that a wetland reclamation plan can be based on planned activities at the beginning of the mine operation. The mine plan sets out those areas that are not wetland areas and adhere to regular reclamation requirements.
- The mine reclamation plan must show those areas which will not be mined and show that the threshold of 40 percent of fens and 100 percent of the bogs remaining undisturbed and how those other areas are going to be reclaimed.
- In summary, if a miner chooses to mine in a wetland area, then a reclamation plan approval is required first.
- Once a reclamation plan has been submitted, EMR determines if the plan meets water licence requirements and does it follow reclamation guidance and are there sufficient details.
- The delegation between Yukon Water Board from YG moves back and forth.
- The Yukon Water Board is responsible for the Licensing and the Chief of Mining Lands is responsible for approving the mine plan with consultation as well.
- Energy, Mines & Resources has provided a commitment to consult with TH on placer mining plans before they are approved.

Nathan Millar is the Director, Strategic Alliances Branch with the Department of Energy, Mines and Resources, YG. Mr. Millar summarized the next steps for the revision of the Interim Policy and how to move towards a final policy.

- The 2017 memorandum of understanding between TH and YG sets out how our governments intend to work together on the development of a policy and guidelines for naturally occurring wetlands affected by placer mining in the Indian River watershed.
- Mr. Powell described the Interim Approach that YG implemented in January of this year; and it is acknowledged that TH has communicated to us that they do not support the Interim Approach.
- The YG continues to be committed to this process of working with TH under the Memorandum of Understanding; and although this work has been on a recent hiatus, YG looks forward to advancing these government-to-government discussions.
- Recent discussions have identified the need for a wetlands study, and YG is committed to providing funding for such a study.
- Initial discussions were focused on two components. The first was a reclamation component in terms of how wetland reclamation can be done well and improved upon. The second component is around wetland protection. The YG’s view is that this study will inform the development of a final policy, a long-term approach for the protection and reclamation of wetlands.
- There are also several other initiatives and developments that could inform revision and updates to the Interim Approach and to the development of a final policy for protection and reclamation of wetlands in the Indian River. This includes the development of a Yukon Wetlands Policy and the development of a Land Use Plan for the Dawson Region.
- The feedback and experience about how the Interim Approach is working will also inform the development of a final policy.
- The wetlands study is currently in the scoping phase, and although there are no timelines for its completion, YG is committed to advancing this work in a timely fashion.

- The main message to the Yukon Water Board and to our partners is that YG remains committed to updating and to revising the Interim Approach, and believes it is the best way to do this is through our ongoing discussions with the TH and stakeholders such as the placer mining industry.

YUKON WETLANDS POLICY. MR. TYLER KUHN, SENIOR BIOLOGIST, ENVIRONMENT

Mr. Tyler Kuhn is the Senior Habitat Biologist with YG, and a Co-Chair of the Internal Working Group for the development of the Wetlands Policy. The following are summary points taken from the Virtual Hearing presentation and Transcript.

- The Wetlands Policy is still in development and will evolve over the next few months.
- There is still quite a bit of work to do on this policy, particularly around clarity in how the policy will be implemented.
- YG is looking forward to being able to work with the Board on the Wetlands Policy including guidance information and licensing to ensure there is no confusion or duplication of process.
- The 2014 Yukon Water Strategy made a commitment to develop a Yukon Wetlands Policy which has been the guidance to this point.
- The Water Strategy also refers to developing the Wetland Policy in a collaborative manner which has become one of the key components of how YG is developing this policy.
- In 2018, there was pre-engagement work, reaching out to some key partners and stakeholders to talk to them about their hopes and fears were of developing a Wetlands Policy.
- YG hosted four roundtable meetings through 2018 and 2019 as a collaborative approach with the development of the Wetlands Policy. A smaller drafting group has also participated in this project.
- The Wetlands Policy work was paused during the summer of 2019, and work was started again during August 2020. The goal is to complete an updated draft policy late this year or early in 2021 for public review.

The Slide below summarizes “Pathway” that will be used to finalize the Wetlands Policy.



Pathway to completing the policy

| | |
|-------------------------------|---|
| August - September, 2020 | <ul style="list-style-type: none"> • Discussions with roundtable partners • Technical review of the draft |
| Fall 2020 – early winter 2021 | <ul style="list-style-type: none"> • Consider feedback and revise the draft policy • Public review of the revised draft policy through engageyukon.ca |
| Winter 2021 | <ul style="list-style-type: none"> • Share what we heard during public and technical reviews • Consider feedback and revise draft policy, if necessary. • Host a roundtable meeting, if possible |
| Spring 2021 | <ul style="list-style-type: none"> • Government to government consultation |
| Summer 2021 | <ul style="list-style-type: none"> • Policy approval |

Government of Yukon 4

- The goal of the Wetlands Policy is to ensure the benefits of Yukon’s wetlands are sustained for all.
- The Wetlands Policy is intended to apply to those areas where YG has decision-making authority.
- The Wetland Policy is designed to guide YG’s actions and decisions.
- Indigenous partners have identified three important principles to provide guidance on the direction of the policy and the actions that are taken in implementing this policy. This includes a holistic approach that considers wetlands as a part of an interconnected system. The other aspect

of this is to respect the land, as well as the knowledge of all Yukoners, when making decisions, which is important to underpin the policy itself.

- In addition to the above, the concept of reciprocity was raised in terms of giving back to the land when we take something away from the land. This requires work to understand how indigenous representatives interpret reciprocity.

Indigenous context

Policy identifies three Indigenous principles which should be considered

- **Holism**
- **Respect**
- **Reciprocity**



Government of Yukon

7

- The Wetlands Policy will include important functions such as flood control, drought resilience, water quality, support for aquatic life and maintaining habitat for aquatic species.
- There are three main components of the Wetlands Policy:
 - The first pillar of the policy is building knowledge around wetlands in the northern context. This includes promoting research on northern wetlands, the role of permafrost, the role of climate change and building public awareness.
 - The second pillar of this policy speaks the uniqueness of wetlands based on their characteristics and 'Wetlands of Special Importance' that warrant additional protection.
 - The Wetlands Policy does not identify new areas of Wetlands of Special Importance. However, the Policy outlines a process for identifying and nominating potential Wetlands of Special Importance, evaluating those nominations, and then providing a means to provide protection in advance of any formal land use planning or legal protection.
 - The Policy also has a commitment to protection through achieving no loss of wetland benefits. This means that while there are activities that could take place within an identified wetland of special importance, they need to demonstrate that those activities are not going to result in the loss of any wetland benefits and that they are essentially avoiding any impacts on the wetlands.
 - The last piece of the policy is managing human impacts on wetlands outside of those wetlands of special importance.

Protection of Wetlands of Special Importance

- Outlines process for identifying Wetlands of Special Importance
- Commits to achieving no loss of wetland benefits within these areas
- Not intended to be a legislative tool (e.g., a withdrawal order)
- Activities that can demonstrate no loss can occur in these areas



Government of Yukon

10

- The Wetlands Policy has a series of steps:
 - The principal approach is: Avoid if you can; and where you can't avoid, then minimize impacts, followed by reclaiming impacted wetlands; and then, there are certain circumstances where offsetting of residual impacts may be appropriate or required as well.

Managing human impacts



Government of Yukon

- Commits to mitigation hierarchy:
 - avoid impacting wetlands
 - minimize unavoidable impacts
 - reclaim impacted wetlands
 - in specific circumstances, offset residual wetland impacts
- All projects must submit 'wetland impacts mitigation plans' or equivalent

11

- The other aspect is the need for a plan that outlines how you will manage wetlands within your activities. The intention is to ensure that where activities are impacting the wetland, mitigation measures are addressed during environmental assessment and licensing and other regulatory processes.



Guiding Principles for evaluating the mitigation hierarchy

- All projects should seek to minimize the loss of wetland benefits.
- Loss of wetland benefits is permissible in some circumstances.
- Cumulative wetland loss will be kept well below the ecological thresholds for the watershed.
- Risk increases and probability of success decreases in each successive step of the mitigation hierarchy.
- Mitigation requirements will be higher for wetlands in heavily impacted watersheds
- Reclamation will be required for all non-permanent wetland impacts.
- Where permanent wetland losses result from a specific activity, a higher priority will be placed on avoidance and minimization. Offsetting wetland losses may be required.
- Certain wetlands cannot be effectively reclaimed within a reasonable timeframe.

12

- The Wetlands Policy allows for some loss of wetland benefits except for Wetlands of Special Importance. The Policy does provide a series of guiding principles that will help evaluate when it is appropriate for that loss to happen.



Key themes

- Level of commitment to wetland protection
- Alignment between policy content and Indigenous principles
- Additional discussion of climate change and wetland interconnectedness
- Need for additional clarity on meaning of several policy components
- Need for implementation guidance
- Clarity on how mitigation hierarchy will be used/evaluated

Government of Yukon

16

- The Wetlands Policy is intended to reflect the best information and will need to evolve as more information is gained and must be adaptive through evaluation and review to remain current.
- In terms of feedback on draft version of the Policy from First Nations, federal government, boards and councils and industry environmental organizations, a key theme that stands out is the “level of protection” that is provided within the policy.
- There are a range of views including more protection of wetlands to more of a balance and not going too far down the road of protection.
- Another area of feedback from First Nations is around the alignment between the current policy and Indigenous Principles.
- Another area of feedback is around the role of wetlands and climate change.
- The intent of the policy is to provide high-level direction as clearly as possible.

Yukon Government Representation. Mr. John Bailey, Deputy Minister, Environment.

Mr. Bailey provided closing remarks to tie together previous presentations. The following are summary points taken from the Virtual Hearing Transcript.

- YG recognizes that wetlands are an important part of a healthy and functioning environment, and they serve as a connection between the land, water and the air. They can be important places for sources of food, medicines and traditional pursuits; but they are also where development might occur with economic wealth.
- Work has been done for about 40 years to identify and study some of the important wetlands in the Yukon through collaboration of both scientific and traditional knowledge keepers. This has resulted in the identification of more than 50 important wetland complexes in the Territory. A number of these have become Special Management Areas or Habitat Protection Areas and some are identified in First Nation Final Agreements.
- As a public government, the YG has the responsibility to take all the interests of Yukoners into consideration. The Government recognizes there are broad values and interests that Yukoners have when it comes to wetlands, and the approach is to assess those various interests and to try to effectively manage potential impacts.
- The approach that has been taken by the YG is informed by five key considerations:
 - The first one is First Nation Final Agreements. These are constitutionally protected agreements that form the foundation for much of the Yukon's modern-day approach to how we manage natural resources, and they will continue to be at the core of future considerations.
 - The second one is Reconciliation. The YG is heavily committed to reconciliation, and this means that continual listening and working with First Nation governments and citizens to examine and improve policies and laws that contribute to reconciliation. An example is the January 2017 Mining Memorandum of Understanding that was signed between the YG, CYFN and the 11 self-governing First Nations.
 - The third is environmental stewardship. The Government is committed to building a prosperous Yukon with strong environmental stewardship.
 - The fourth consideration is how to grow the economy and maintain good jobs for Yukoners. YG recognizes the importance of having a sustainable and active minerals sector as an important driver of the economy, but the commitment to environmental sustainability must be maintained. The Government is working to ensure Yukon operators and businesses have the support and resources to function within these new and emerging parameters that may affect their work.
 - The fifth consideration are legal aspects. YG is guided by Federal and Yukon statutes and regulations, and this includes honouring dispositions and rights that have been transferred and working with the owners of those rights.
- The policy for stewardship is a process to sustain the benefits of wetlands to the environment and to people. The commitment to managing human impacts on wetlands will focus on providing a regime that reflects the current state of knowledge of wetlands in the Territory but will remain adaptive to new information.
- The regime for wetlands management should provide clear and consistent guidance that sets out the requirements for projects that impact wetlands. The Government wants to be able to establish the tools and standards that will help assessors and regulators evaluate the impacts of projects and determine how best to mitigate them that works within the existing assessment and regulatory processes so that we can avoid unnecessary duplication.

- In the Indian River Valley, placer mining has been occurring in the tributaries for about 120 years. Since the onset of rising gold prices about 15 years ago, the pace and the scope of these activities have accelerated in the Indian River. In 2013, through the environmental assessment process, there were concerns about placer mining in the Indian River and emerged as a critical, complex and complicated issue. One of the challenges that came to light during some of these discussions was the knowledge on the extent and the type of wetlands in the Indian River Valley was very limited.
- YG has been working on the wetlands issue for decades in collaboration with its First Nations partners and stakeholders, but the pace of the urgency of this work has changed because of the concerns that have arisen in the Indian River Valley.
- The response has been multi-pronged trying to address some information gaps, sharing information, managing the impacts, and integrating with other initiatives to try to build a comprehensive and robust understanding and approach to how we manage the impacts on wetlands.
- One thing that is common to all the elements of the Government's approach is working in partnership and through engagement with First Nations and interested stakeholders, including industry.
- In 2016 and 2017, YG engaged a contractor to help develop detailed maps of wetlands in the Indian River Valley. This work led to a revised understanding of wetlands, and this mapping is now used in the environmental assessment process.
- In 2017, YG engaged a contractor to carry out a study to characterize the water in the Indian River watershed. This work led to an increased understanding of the hydrology and water quality in the wetlands and highlighted the need for more data and monitoring to take place.
- Since 2017, YG has been developing an approach to determine if open water wetlands have been impacted by development.
- In 2019, YG completed a targeted wetland inventory of the Beaver River or subregional planning area and have been monitoring the health of wetlands in this area.
- Through the ecological landscape classification program, YG is mapping wetlands to support regional land use planning. To date, ecological mapping for the North Yukon, the Peel and Dawson planning regions have been completed.
- In 2017 and 2018, there have been wetlands workshops to bring together YG, First Nations, industry, Yukon Environmental and Socio-economic Assessment Board, consultants, and academics. These workshops were coordinated to try to discuss science, mapping, geology and hydrological flows; and identify nuances in the reclamation of wetlands. This was an important step in increasing our knowledge and moving the conversation forward.
- The aim of the Interim Approach was to manage the impacts of placer mining in the Indian River Valley which came into effect on the January 15, 2020. The Government is planning to refine this approach through work with the TH Government and other governments. There is a study that is currently underway, to further refine this approach to do a better job of managing these wetland areas.
- There is another initiative called the Progressive Reclamation Working Group. The aim of this group is to provide a government-to-government process to focus on developing recommendations related to reclamation requirements, including progressive reclamation and the possible use of security for placer mining. Their work will include reaching out to stakeholders and regulators to seek input. We anticipate that this will provide governments with recommendations on how to improve reclamation practices, including the reclamation in wetland areas.

- The work with TH will continue to further refine wetlands reclamation guidance and the management of impacts, including the protection of wetlands.
- The Government has also been providing support to DUC for a detailed wetland inventory of the Dawson land use planning region. YG also continues to work on developing a framework for the management of cumulative effects.
- The Yukon Wetlands Policy is a high-level framework that commits to improving knowledge with an understanding to protect Wetlands of Special Importance.
- The development of the Dawson Regional Land Use Plan is currently underway, and in the development of the draft plan. It is anticipated the final plan will provide guidance in relation to conservation and land uses, including both wetlands and placer mining. This will be at a regional scale and watershed or landscape scale.
- At a more specific level, the Interim Approach to placer mining in the Indian River area provides specific guidance at the claim block scale. It is designed to provide specific guidance to an operator in relation to their licence conditions that are required.
- The Interim Approach provides a useful structure, and the Yukon Water Board can use in its capacity as regulator under the *Waters Act* and as Chief Mining Land Use for Class 4 Placer Authorizations.
- YG looks forward to continuing to work with the Board to create the clarity of decision-making that is desired by all parties and to continue to improve the alignment of assessment and regulatory processes to best serve the interests of all Yukoners.

Board Questions

BOARD MEMBER: MS. LECKIE

Thanks so much one. Gosh, you know, I started out with one small question for Jeff, and it turned into a bigger question. So, I'm still going to start with my small question to Jeff, maybe with a preamble to say:

In our world, what's great when we're in the process of writing a water licence or when we're trying to answer number 3, like: What wetland reclamation objectives should be considered during the water licensing process; finding things that are enforceable and quantifiable and understandable are important.

And the underlying complications today have been about basically, this no loss of benefits or the opposite, to ensure that benefits are sustained. So, in listening to Sebastian this morning, he was talking about carbon sequestering that peat bogs have. And then, I listened to you talk about how peatlands are formed and what their role is, and I wonder: Do we know the benefit of a peat bog, let's say, in carbon sequestering or peatland if we change it to another type of wetland, which is likely be in that swamp, shallow water grouping? I'm going to guess we lose that carbon sequestering ability and we maybe gain some aquatic-type life ability. Is it maybe that simple?

RESPONSE: MR. BAILEY

I'm certainly not a carbon sequestration expert in wetland environments, but there may be one here on the panel who wants to speak up, I'm not sure. But I think you can still harness sequestration in a post-mine environment.

You know, not everything is going to be a shallow, open-water wetland. You could very well swamps and marshes, I think. Perhaps they're not going to have the same peat content perhaps, but you know, you do have to take a long-term view on reclamation, as well.

You're not going to be immediately in the business of carbon sequestration everywhere on sort of a reclaimed site; but I think a great science project would be to sort of look at: Okay, what might this place look like in 200 years, you know? What might it look like in 100 years or 500, right? Like, how is it going to evolve? And you can kind of gain some knowledge that way about sort of the best way to leave it. So, I

don't think we have the answer at this point in terms of carbon entirely, but, yes, I think you're going to see a change; but I think you've just maybe identified a great sort of research topic.

BOARD MEMBER: MS. LECKIE

Where my question is going is that you talked about the benefits of wetlands flooding drought, clarifying drinking water, that there are a bunch of benefits that have been presumably identified. Is there a correlation between the benefits that have been identified in the functions of these different wetlands that we might see in a reclamation plan? Like, I'm looking for something quantifiable.

So, we're saying: Okay, here's your reclamation objective. This is what needs to be considered. Are there functions of each of the benefits that can be evaluated to go into something like a recommendation or a sentence in your water licence that says: You shall have a reclamation plan that has 'x' components; because right now, it has 'x' components; but saying it has 'x' components is not the same as showing how the wetland benefits will be sustained in some quantifiable manner I don't think.

RESPONSE: MR. KUHN

Yes, I think that's one of the challenges and questions that needs to be answered here, and so, maybe briefly to first the question of: Are wetlands benefits correlated with wetland functions? Yes, the short answer there is yes, that the characteristics of the wetlands and the functions that happen within wetlands are what creates the benefits or the ecosystem services that we benefit from, and you can measure some of these.

It can be very hard to measure these, but there are approaches to take to quantify either functions or benefits, and they can take quite a bit of work, certainly looking at the Alberta policy as an example that has done that.

The information that goes into the background of assessing a wetland and determining how much impact you will have if you disturb one hectare of this type of wetland versus reclaiming another wetland, like, there's a whole system that goes on in the background on the Alberta policy; and I think that's a piece that – basically, here we haven't built that.

From, like, the broader policy perspective, we don't have that tool yet for the Yukon. We can build off ones that exist, but that's a piece that's going to come over time as we understand things better. So, it's just not quite available yet for the Yukon, but we can get there. So, it doesn't really give you something to work with now, but it is an achievable task.

BOARD MEMBER: MS. LECKIE

Okay, thanks, Tyler. I have a bunch of other small things here, but I think that all manifested into my larger one. Thank you, Piers, I'm complete.

BOARD MEMBER: MR. BOWEN

I have two questions related. We've heard on a number of occasions today the importance of wetland mapping and inventory and the efforts undertaken to date. On an application by application basis that the Board deals with, we often notice or come across mapping gaps. And I note in the draft policy that the Government commits to supporting a Territory-wide inventory but that it will take time.

So, in the interim, then, I'd be interested in your thoughts on whose responsibility it is, then – government or industry - to do this mapping on a site-specific basis?

RESPONSE: MR. POWELL

Thanks, Jon, that's a good question about conducting inventory and how to go about it. I think if we look at the Indian River example here where a number of industrial players are busy on the landscape, EMR took a pause to do that detailed inventory work in order to support that wetland - in this case – approach

around that. I think there are components within each of an applicant's perspectives that they probably need to get in there and do some of that mapping work.

We've asked them to do that in this interim approach by having these as-built plans for verification so that we can make those comparisons and have something to clearly draw upon; and of course, there's that high-level work that points out important regions that Tyler's work through the large policy will probably have a government responsibility associated – and this is just a guesstimation on my part – to go and do that higher-level work, So, I think it's a combination of responsibilities, and it probably has a very scale-dependent aspects to where those responsibilities lie.

BOARD MEMBER: MR. BOWEN

Okay, thank you, Todd. A related question, then, is we've spoken earlier today on the dilemma and the challenge the Board faces in deliberating applications in consideration of a watershed basis when we deal just application by application. So, my question, then to Yukon Government, is: Do you have any thoughts or advice on how we may better assess and predict the environmental effects.

RESPONSE: MR. POWELL

I do not have a fully-formed answer, but we can maybe speak about it and build it as we hear. Jon, you asked about how to predict the effects on a wetland of an activity like placer mining; and of course, in the context of water. So, I think for the Board's interest, for flow rates, water quality, maintaining of the function of those aspects of the watershed in some of the parts there add up to a system that exists today versus what it could be if it's impacted by these kind of things.

So, in trying to figure out how to predict those effects, obviously, I think it's the scale of the circumstance. Some of that work probably comes down to: What is the likely scale of the circumstance? Is it a small scale, or do we have the benefit of an effects report to show us that perhaps there's quite a bit of resource there that's going to look to be exploited and put into the scale of that predictable effect; and putting that into a context of: What are the impacts of those functions, so, as Anne rightly put it 'those benefits'. What is the ability to maintain those benefits? What is the trading of benefits – if we were to put it that way – between those economic values produced from mining, the ecological benefits that are removed for a period, and then, put on a trajectory back and forth, some level of those benefits through reclamation?

So, that's a very long way to say that I think it's a description of scale impact, a comparison of benefits and other interests that come into play there. I think the Indian River watershed is exactly that. It's what we're going forward right now, to find the balance of what those would look like in order to do good licensing under the circumstances. So, as I said earlier in my presentation, we have a lot of learning by doing underway right now and capturing some of that learning and putting it into an adaptive plan to move ourselves forward. It's going to be one of these outcomes from this interim approach and future revisions to our policies when dealing with important areas that have a lot of competing interests.

RESPONSE: MR. KUHN

This is Tyler. I'll just jump in again if I can. I think another aspect of this that goes to the scaled pace that Todd was talking about is that in terms of particularly what's happening in the future, it may actually be very difficult on a project-by-project level and that getting at the answer to this is likely going to need to be something that's done at a broader watershed or land use planning scale or something like that.

It's done as a separate activity that provides that guidance and ensures pieces of implementation of the overarching policy or interim approach for something like additional work on a cumulative effects framework, which addresses wetlands for those aspects that can look at a bigger region and put all the pieces together as a way to predict into the future or at least make an educated guess as to what the future might hold.

So, you know, I think there's work that needs to be done at that level to support the question that happens at a project-by-project level that is just worth recognizing.

RESPONSE: MR. MILLAR

I'll just maybe add one final point around... We do have systems in the Yukon that do attempt to do that. One of them is the fish habitat management system for placer mining; but I think the key question is: What are the indicators? What are the things that you're trying to look at on a watershed-by-watershed level; and in the case of that system, the objectives are related to water quality, aquatic health and the economics of the system. So, there are frameworks that exist for looking at some of these questions, Jon, on a watershed basis, and I think it does come back to what are the questions you're trying to answer.

BOARD MEMBER: MR. WARNSBY

Thank you, everyone. I'm going to ask a bit of a question, and I appreciate this may be one that Yukon Government may wish to put some thought into and come back to in either written submissions or closing comments; but we've heard a lot about, you know, projects ongoing with Yukon Government and a lot about what is happening and what is being developed, but I would like a little bit of comment and a little bit of understanding about you think about Yukon Government as a – you know, recognizing that there is a role of public government. But if you would just answer within the scope of Yukon Government's authority the three questions that were posed in the Notice of Hearing, say, one-to-two paragraph answers to those things for the Water Board to consider in applications, how would those one-to-two paragraph answers look for us to consider as an interim approach, of course, recognizing all the excellent ongoing work that Yukon Government discussed today? Thank you.

RESPONSE: MR. BAILEY

Yes, I'll actually maybe field that question from Bruce. It's good to see you, Bruce. I think that's something that we did try to work through those responses you're looking for through the course of the presentations, and what I suggest is that we can consolidate that into something a bit more specific for our closing remarks on Thursday, I believe, or tomorrow, whatever day we're closing; and we can just make sure that that's crystalized at that time, thanks.

Board Member: Ms. Heffner

Okay, I just had a question about the interim approach in terms of the 40 percent avoidance of fens and a hundred percent of bogs and ensuring, also, the importance of definitions around implementation. In terms of avoidance, we see in other sectors, like forestry, what that might look like in terms of specific buffers, and I'm just wondering, any thoughts on that in terms of what would constitute avoidance.

RESPONSE: MR. BAILEY

I can answer that question. Thanks, Susan, so avoidance from the perspective, I think, of mining planning is that dips and mining cuts as a mining infrastructure cannot affect that wetland. In other words, we're not going to trommel it. We're not going to dig it up. That's the ideal circumstance.

We include that as an option for a miner, because the mining process in placer is interested in not digging up anything that they don't have to dig up. Of course, that's just extra expense for no value, plus then, now they have to reclaim in, so, an additional expense on top of that. So, the avoidance option is to allow them to follow the paystreak – so to speak – where the good gravels are where the gold lies – and that gives them their planning opportunity to look at the circumstance and make some decisions about whether or not there is any value to disturbing that wetland to do any mining, cut through the wetland or having to trommel it in any way; or to make a decision to follow the good gravel – so to speak – where they lie in other places.

And so, when it comes to how do we characterize avoidance, it's in that they're not using the area. They're not impacting the area through the trammelling of it, the digging it out in terms of infrastructure across it.

When it comes to buffering that, if I could suggest that in buffering, you're talking about trying to add additional opportunity for the wetland around its function, and I think what we're asking for in that avoidance perspective is to avoid the direct impacts that include those things, like mining through these wetland areas.

So, I think that's a partial answer to your question. Do you want to refine it, or do you have any additional questions around it?

BOARD MEMBER: MS. HEFFNER

No, that's great, thanks, and I'm cognizant of the time. So, thank you.

Closing Remarks

Mr. John Bailey, Deputy Minister of Environment provided the Closing Remarks on behalf of YG. Mr. Bailey indicated that it is clear wetlands are environmentally and culturally important to Yukoners. Mr. Bailey also commented on the importance of placer mining, and its role on the Yukon economy and the efforts that are being in the industry towards socially and environmentally responsible development and site reclamation.

Mr. Bailey's Closing Remarks provided a response to the Board questions for the Hearing. The following summary is taken directly from the Virtual Hearing Transcript.

Question 1. What information should be required to support a water licence application for placer mining in wetlands?

The Yukon Government provided feedback on January 29, 2020, to the Board on the Draft Wetland Plan Guidelines. Mr. Bailey summarized that ideally a regulator would prefer to have all the necessary information before making decisions about applications. However, rarely there is complete information to consider when making decisions. This is particularly the nature of the case when dealing with issues like wetlands in northern environments, where our knowledge base is not complete, but it's expanding very rapidly. The Yukon Government is of the view that information requirements should be harmonized and aligned through the assessment and regulatory processes. The Yukon Government noted in that the Draft Yukon Wetlands Policy requires a wetlands impact mitigation plan for all projects and activities that could impact on a wetland.

Question 2. What should the wetland conservation, development and utilization objectives be on a watershed basis and how can they be balanced on an application basis?

The Yukon Government believes the best time and place for establishing broad regional or watershed targets is through the land use planning discussions. In the absence of a final land use plan, the Yukon-wide wetlands stewardship policy and its implementation guidance could provide direction on this question through the identification of Wetlands of Special Importance, as well as through the application of the mitigation hierarchy that's currently in the draft plan.

The Government of the Yukon's view is that the Interim Approach balances wetland conservation and development and the utilization objectives for the Indian River watershed. The Government also remains committed to updating and revising the Interim Approach through ongoing discussions with partners, in particular Tr'ondëk Hwëch'in, and other stakeholders in the placer industry and others.

Question 3. What wetland reclamation objectives should be considered during the water licensing process?

Mr. Bailey summarized that wetland reclamation objectives will vary from place-to-place and watershed-to-watershed. He used the Indian River watershed as an example, where the current policy of the Interim Approach establishes that hard-to-reclaim wetlands, bogs and fens be provided partial protection from disturbance. In addition, a reclamation plan is required for all wetlands that are disturbed. In this context YG has provided guidance on how to develop a reclamation plan through the reclamation guide for the Ruby Creek and Indian River East Block placer mines, also known as 'Northern Exposures to Project' or YESAB File 2015-0120.

Mr. Bailey further summarized that the Yukon Wetlands Policy is expected to provide guidance about the use of the mitigation hierarchy, that is, avoid, minimize, or reclaim areas where wetlands have been impacted. The current draft policy sets out that reclamation is required for all non-permanent wetland impacts; and that there is not always a requirement to reclaim wetlands to their original class (e.g., like-for-like) with the loss of wetland benefits being permissible in some circumstances. This may mean that as reclamation occurs, additional impacts may be permissible, so long as cumulative effects remain below a certain level.

Mr. Bailey also summarized that there were views expressed all placer mining activities in wetlands should stop while research, planning and study are completed. In some cases, there were references to specific sections of the *Waters Act*, specifically Subsection 32(1) and Subsection 32(2). In this first subsection, it allows the Commissioner in Executive Council to make an order to reserve lands from disposition for a specified period or otherwise, for the protection of any waters. The second subsection allows the Commissioner in Executive Council to make an order to direct the Yukon Water Board not to issue any licences for a period of time.

Mr. Bailey was clear that YG does not intend to issue any orders prohibiting placer mining in wetlands, or to issue any orders halting or freezing current or future applications related to placer mining in wetlands. YG is of the view that the Board has a statutory responsibility to continue deliberations on applications before it.

As a public government, YG has a responsibility to try to take the interests of all Yukoners into account. It is acknowledged the broad set of values and interests that Yukoners have when it comes to wetlands, but the Government will continue to actively pursue how to best balance interests in wetlands by working with First Nations, industry, regulators like the Yukon Water Board, and other stakeholders.

Summary Responses to Information Requests

DIRECT QUESTIONS:

1. Does Yukon Government have a schedule for convening land use planning commissions in the areas where mining is happening in wetlands?

Response: There is no specific schedule for convening regional land use planning commissions. Commissions will be convened when an affected First Nation approaches YG to request initiation of regional planning.

2. Does Yukon Government have a schedule for undertaking mapping for wetlands that will allow us to understand pre-mining wetland regimes better than we do now?

Response: Mapping of wetlands can occur at several scales each of which requires a different approach and will produce a different wetlands map each with a level of detail, accuracy and application. Broad scale mapping is considered in the draft territory wide wetlands policy. Detailed mapping will be used at scale appropriate for assessment and regulatory decisions. YG is planning future detailed wetland mapping that will be prioritized based on industrial interest and the presence of high wetland values. Some mapping will begin in 2021 and 2022. The Government is also developing standards for wetland mapping.

3. Given the interim approach that calls for protection of 40% of fens and 100% of bogs:

a. Are these percentages thresholds for the Indian River area only?

Response: These percentage thresholds are for Class 4 Placer Projects in the Indian River area and only applies for projects for which an Evaluation Report was completed by YESAB after January 15, 2020.

b. What evidence are the percentages based on and how were they developed?

Response: Percentage thresholds were established for fens and bogs due to their difficulty to reclaim to their original state. The Government's Interim Approach attempts to strike a balance between conservation and development in the Indian River area. YG is committed to revisiting the Indian River approach including the protection thresholds for fens and bogs as more is learned about wetlands and reclamation in northern environments. The Government will also conduct an interim review of each placer operation that is subject to this approach after 5 years of operation. The 5-year review will include consultation with an affected First Nation and could result in adjustments to the terms and conditions of Class 4 authorizations.

4. Please provide evidence that the interim approach is protective of un-mined, residual bog and fen wetlands after application of the interim approach on a claim by-claim basis.

Response: The Interim Approach came into effect January 15, 202 and since then there has only been a single wetland protection and reclamation plan. Proponents have been directed to rely on the *Wetlands Reclamation Guide for the Ruby Creek and Indian River East Block Placer Mine (2015-0150)*, the Northern Exposures Guide until a revised guide is developed. The Interim Approach should provide confidence that protection will be achieved. Submitted plans that are reviewed and approved will ensure that the remaining wetlands continue to function.

5. How are reclaimed and un-mined wetlands considered in the Interim Approach after the completion of a mining on a claim? How are the residual, un-mined fen and bog wetland types protected under the Interim Approach?

Response: The protection for wetlands in the Interim Approach is meant to be lasting. Transfer of claims to new ownership will include continued protection of identified wetlands. The implementation date of January 15, 2020, for the Interim Approach will remain as the baseline for undisturbed wetlands. The Interim Approach identifies protection thresholds for fens and bogs. Monitoring and inspections of wetland protection and reclamation throughout the licence will be necessary to ensure compliance.

a. What is the planning horizon for the Interim Approach?

Response: The 2017 Memorandum of Understanding between TH and the YG sets out how governments will work together. At the present time TH does not support the Interim Approach however YG continues to support working together under the Memorandum of Understanding. A wetland study is currently being planned. The completion of a territory wide Wetlands Policy and the completion of the Dawson Region land use plan could inform revisions to the Interim Approach. Timelines for revisions are not set in stone and revisions will be considered when it makes sense based on new information.

b. What information should the Board require in its Information Guidelines to support achieving the Interim Policy and who should provide it?

Response: The Northern Exposure Guide provides guidance to operators for wetland protection and reclamation. It provides reclamation objectives, methods and approaches, key information requirements and requires mapping information and a monitoring plan.

6. Does Yukon Government maintain a record of protected wetland areas under the current policy, how is that record maintained and who maintains it?

Response: YG has only received one plan and the 2016/17 wetland inventory is the only existing catalogue of wetlands to support the Interim Policy.

GENERAL QUESTIONS:

1. What is the appropriate temporal and spatial scope for baseline wetland information required for an application for placer mining in wetlands?

Response: YG does not have territory wide guidance on the collection of baseline information for wetland assessment. The wetland work completed in 2016/17 is considered to be sufficient for the Interim Approach.

2. Given the status of wetland mapping in Yukon:
 - a. What wetland mapping information should be required as part of an application for a water licence?

Response: Maps which detail proposed project activities and their overlap with specific mapped wetland classes should be sufficient for reviewing a water licence application. Mapping should be at a detail and accuracy sufficient to evaluate project footprint and impacts such as disturbance to or loss of wetland class by area within each claim block.

- b. Who should provide that information and when?

Response: YG is responsible for setting mapping standards and defining the appropriate level of information required. The project proponent would be expected to be responsible for conducting the mapping. Regional wetland inventory is within the Wetlands Policy which will be the responsibility of YG. Regional land use plans provide an approximation of wetlands distribution but do not provide adequate information for evaluating applications at a project level.

3. What post-reclamation monitoring is required to verify that wetland reclamation techniques are effective? Who is responsible for verification?

Response: The project proponent has the responsibility for reporting on reclamation activities. YG has the responsibility to gather reported information, ensure adequacy, evaluate compliance and report on this information. YG will also have a role in coordinating post-reclamation studies.

4. What requirements in a licence or mining land use authorization would improve effectiveness of wetland reclamation and that reclamation objectives are achieved post-mining?

Response: An annual reclamation report provided by the proponent as a condition of their licence or reclamation plan may be effective for ensuring reclamation objectives will be met post mining.

5. Because techniques of placer mining reclamation of wetlands transforms bog and fen wetland types to marsh and shallow water bodies:

- a. How does this transformation on a claim-by-claim basis affect the watershed-scale wetland ecosystem?

Response: Further work is required to understand the impacts on wetlands, particularly around the impact and effectiveness of wetland reclamation. The post mining landscape is more topographically diverse, and water saturated soils tend to be concentrated to low lying areas as marshes or shallow open water rather than widespread in valley bottoms as in fens. In most mining areas upper slope fens will not be impacted whereas some lower slope fens will be transformed into water-concentrated wetlands. These changes will result in changes to biodiversity and wildlife habitat. Initial work indicates that degraded permafrost can be regenerated within 50-100 years post mining. Further work is required to determine the overall effects on hydrology of impacted regions and the affect from released carbon on disturbed peatlands.

- b. Are shallow water bodies and marsh wetland types over-represented because of reclamation and what is the cumulative effect?

Response: Within the Indian River current passive and active reclamation tends to increase the abundance of shallow water and marsh wetland types. In other regions of Yukon, these classes of wetlands may be present in higher proportions on pre-disturbed landscapes.

c. How does the transformation affect wildlife?

Response: The shift to shallow water and marsh type wetlands will result in a loss of habitat for some wetland adapted species as well as shift for habitat favourability for waterfowl and moose.

6. Can the utilization, development and conservation of wetlands be achieved using a management approach similar to the DFO watershed authorization model?

Response: To apply the DFO Watershed Authorization Model is possible but there are challenges including the time required, the modelling requirements, verification procedures, costs, and the determination of valued ecosystem components for wetlands management. YG is developing a wetland health monitoring tool.

7. How does the cost of reclamation for a placer operation in non-wetland areas compare to the cost of reclamation of wetlands?

a. What is the economic impact of reducing mining in wetlands?

Response: In 2020, an estimated 50 % of placer production was from wetland areas mostly within the Klondike Plateau. This is approximately \$ 82 million of gold production. The economic value of intact wetlands providing ecosystem services has been found to be significant in other jurisdictions.

b. If security is required for a placer undertaking, what information is required to calculate it for reclamation of wetlands?

Response: YG's approach to requiring and determining security is driven by legislation and evaluated on a case-by-case basis. The Chief of Placer Land Use may require security where there is significant adverse environmental effects. Past performance of the operator may be considered and the amount of security must be commensurate to the cost of reclamation. YG has developed a security calculator based on activities, their metrics and standard costing to generate a reclamation cost estimate. The calculator is not publicly available. The Progressive Reclamation Working Group is a sub-working group established under the Mining MOU Working Group with a mandate to make recommendations about reclamation and security for placer mining and quartz exploration. There will be consultation with stakeholder and regulators to seek input.

8. Can the use of adaptive management plans mitigate adverse effects to wetlands from placer mining?

Response: Adaptive management in the placer context is a challenge in terms of funding capacity, commitment for long time periods, gaps around knowledge of resource relationships, and management impacts, mitigation options and management objectives. Adaptive management would require significant resources, up front research and policy development. Caution should be applied considering Adaptive Management as a management tool.

9. Indigenous Knowledge (IK) was raised as a source of information to help understand landscape connectivity. Please provide information on how the Board could incorporate IK on an application-by-application basis and when IK should be provided.

Response: YG encourages the Board to work collaboratively with Yukon First Nations to explore mechanisms that would allow them to respect and reflect Indigenous ways of knowing, doing and being within its decision-making process.

6.4 TR'ONDĚK HWĚCH'IN

Representation Summary

Mr. Bill Slater introduced himself as representing the Tr'onděk Hwěch'in (TH) for the Virtual Hearing and prior to beginning of the presentations, he recognized the traditional territories of the Kwanlin Dūn First Nation and the Ta'an Kwāch'ān Council and thanked them for their hospitality. Mr. Slater also thanked the Board for convening the Virtual Hearing and providing an opportunity for TH to speak. The TH presentation had several speakers to provide evidence about ecological, spiritual and cultural value of wetlands and provide some recommendations for the Board's consideration.

The following was the order of presentations:

1. Opening Statement.
2. Introduction and Overview.
3. Tr'onděk Hwěch'in Perspectives on Importance of Wetlands.
4. Technical Presentations.
5. Treaty and Indigenous Rights.
6. Recommendations.

Mr. Slater was the guide for the series of presentations which began with a few words of introduction from TH Chief Roberta Joseph. Chief Joseph was re-elected during the summer of 2020 for her third term as Chief of the TH. Before becoming Chief, she was employed in the Fish and Wildlife Branch of TH; and during that time, she also served on the council as Deputy Chief and councillor for two terms.

CHIEF ROBERTA JOSEPH

Chief Joseph virtually welcomed the Parties to TH traditional territory on behalf of the TH council and citizens. Chief Joseph expressed great appreciation to the Board for holding a Virtual Hearing in the public interest on the important topic of placer mining in wetlands.

Chief Joseph provided an overview of the First Nation's views about mining activities in wetlands. The following bullets are summarized from the Virtual Hearing transcript.

- The TH have a cultural and traditional obligation to be stewards of our traditional territory as an integrated whole.
- Wetlands are a critical part of this land and its ecosystem.
- The following quote is from a TH citizen, which sums up their views on wetlands and their place in their traditional territory: *"Wetlands are the driver. They are connected to all other resources, water quality and habitat. Tradition economy and use of land is who we are. We won't be who we are if we lose these qualities again."*
- Wetlands are very important to TH, our culture, our citizens and our rights in the TH Final Agreement.
- Wetlands provide important ecological services and functions, such as maintaining water quality and quantity, providing habitat for fish and wildlife, waterfowl, and sequestering carbon.
- Wetlands also support cultural practises, such as harvesting berries and hunting.
- The TH Final Agreement includes specific rights to quantity, quality and rate of flow of water which is outlined in Chapter 14.
- The harvesting of fish and wildlife, along with habitat protection, is outlined in Chapter 16.
- The use and peaceful enjoyment of settlement land is in Chapter 5 and Chapter 18.
- The Indian River Valley includes four TH settlement land parcels, which were selected for a variety of reasons, such as traditional pursuits, cabins, traditional hunting, fishing, and wood camps. Not

only are they used for the enjoyment by TH families today, but for the use and enjoyment by future generations.

- The parties to the TH Final Agreement also intended to recognize and protect a way of life that is based on an economic and spiritual relationship between TH and the land.
- Mining and other developments in wetlands can and have a direct impact – or has impacted our final agreement rights already.
- These impacts can also compromise our land use stewardship obligations and our spiritual and economic relationship with the land.
- TH citizens and Government are very concerned about the cumulative impacts that mining has had on wetlands in our traditional territory because some wetland types, such as fens and bogs, cannot be reclaimed.
- TH citizens have seen previously healthy wetlands where hunting and fishing would occur converted to gravel and tailings ponds.
- The Indian River area has been TH’s breadbasket for centuries, generation after generation. However, we now know our citizens have been steering away from that area.
- TH is concerned that with more mining in wetlands, there will be fewer and fewer places to go to hunt, fish and be out on the land.
- Our traditional activities are the way we pass on culture, traditional laws and stories of our heritage. If our citizens can no longer be out on the land, teaching our way of life to our children and to our grandchildren, we will lose our culture, traditions, and treaty rights.
- Traditional foods, such as wild meats and fish, keep our people strong. Without this, we lose our identity and do not feel healthy.
- When we eat from the land, we feel connected to it. We feel revitalized and grounded in our spirituality.
- What is the life force? Water is a life force. Water is spirit. Water is connected to our ceremonies, songs, and stories, and ensures the survival of the animals.
- This spirit has been made into a source of capital, as wetlands are being ripped up for monetary values.
- Since 2013, TH has repeatedly highlighted the importance of wetlands and concerns about mining in discussions with YG, YESAB and the Board.
- In 2016, YESAB, concluded that mining projects should no longer take place in undisturbed wetlands. TH supports the scientifically found conclusion of YESAB.
- Despite this, YG has continued to make decisions to allow mining projects in wetlands if the proponent provides a reclamation plan.
- TH has serious concerns about YG’s decisions for the following reasons:
 - First, TH agrees with YESAB that ecological functions of disturbed wetlands cannot be reclaimed, replicated, and they are forever lost. Disturbance from mining affects the ecological functions of wetlands.
 - Second, the conversion of wetlands results in changes to hydrology, topography, native plant cover and overburden material; and once lost cannot be restored or replaced. Any reclamation plan that allows conversion will not address the impacts mining has on ecology or our rights under the TH final agreements.
 - Third, mining activities, regardless of any reclamation efforts, will affect the ability to use and enjoy any nearby settlement land, as well as the ability to pursue cultural activities in the area and maintain our connection to the land.

- As noted by YESAB, it is likely that mining in the Indian River wetland complex has already surpassed the thresholds of social acceptability and that if mining continues in the area, the socio-cultural value of the land will continue to deteriorate as long as wetlands continue to be disturbed.
- The view of TH is that no reclamation plans sufficiently mitigate the environmental and socio-economic effects of a project or impacts on our rights under the TH final agreements. These effects can only be reduced by prohibiting mining on any undisturbed wetlands.
- In January 2017, TH signed a Memorandum of Understanding with the YG to collaboratively develop policy and guidelines for the protection and reclamation of all naturally occurring wetlands affected by the placer mining in the Indian River watershed. To date, TH has not reached an agreement with YG on such a policy or guidelines.
- TH strongly objects to the Interim Policy on mining in the Indian River wetlands that YG implemented this year.
- TH has emphasized the importance of wetlands as part of the Dawson Regional Land Use planning process.
- In the absence of an approved land use plan, further mining of wetlands undermines the land use planning process that is central to TH's final agreements and the bargain we struck with Canada and YG.
- It has been 22 years since the completion of the TH final agreement.
- This Virtual Hearing is a result of TH's intervention with regards to a water licence application for a placer project in wetlands and the request for a Public Interest Hearing on this important issue. The objective of Chapter 14 of Yukon First Nations' Final Agreement is to maintain the water of the Yukon in a natural condition, while providing for a sustainable use. To us, this includes any industrial development such as mining is sustainable by protecting water and wetlands, so that traditional uses can continue.
- As a government, TH understands the importance of balancing various interests, including the economy and the environment. TH supports sustainable development in our Traditional Territory. However, TH does not support further mining in our precious wetlands.
- TH is frustrated that mining continues without a comprehensive understanding about the wetlands and their function or appropriate measures in place to provide effective protection and reclamation of wetlands. Such mining is not sustainable and does not maintain water or the land in a natural condition.
- TH is of the view that until appropriate measures are in place to ensure wetlands are protected and reclaimed, there should be no further mining in wetlands in TH's traditional territory.
- Such measures may include reservations and guidelines for protection through the land use planning process for the Dawson Region. These measures must be developed in collaboration with Yukon First Nations.
- In the meantime, TH requires the Water Board to step in and stop further damage until those measures are in place. TH needs the Board to stop issuing licences where there will be irreparable harm where wetlands cannot be restored and to work with us to make sure the right measures are put in place, going forward.

TR'ONDĚK HWĚCH'IN PERSPECTIVES ON IMPORTANCE OF WETLANDS

ELDERS AND CITIZENS

Mr. Slater summarized that the second component of the presentation provides oral testimony from elders and citizens about what wetlands mean to TH including why they are so important and the relationship between the land and the water and the people and the culture. This testimony was presented as an audio

recording. To ensure that the important points raised by TH citizens is accurate the following is taken directly from the Virtual Hearing transcript with no summarization or interpretation.

SPEAKER

We are honoured today to share the voices of some of our Tr'ondëk Hwëch'in Citizens for this important hearing on placer mining in our wetlands. We are caretakers of the land. Our ancestors taught the importance of this, and we carry this forward.

When we negotiated our final agreements, we did so with the understanding that we would share together the responsibility of taking care of the land for future generations. Today, the areas in and around wetlands have not been properly cared for. We are not opposed to mining, but it must be done respectfully. We have five citizens speaking for us today. Many more shared similar concerns.

Our speakers today are Elder Peggy Kormendy, who hunted, fished and trapped in this region for many years; James Roberts, who is a natural resource officer with Tr'ondëk Hwëch'in Government; Fran Morberg-Green, a herbalist and interpreter at Dänojà Zho Cultural Centre, Elder Steve Titus, Elder Sylvia Farr.

Masi cho for this, and we look forward to working together for a brighter future for all generations.

MS. KORMENDY

When we go back to the different governments, the Federal Government and the Yukon Government, whatever, we had our First Nation government a long time before they called themselves 'First Nations'.

If you go back to these old people, they'll tell you the same story. They were looking after the earth, their water, and that's the way it should be. It doesn't matter what colour we are, we're still human beings on this earth; and the way things are going now, what will it be like for the future of our young kids, our grandkids? What kind of life are they going to have?

And I started thinking about the wetlands. The beaver is a really important animal on this earth, because he makes ponds. The birds, all the animals, come and drink this water, because it's safe. Human beings could drink that water at that time; but now when we think about it, should I drink that water?

And then, you have man-made ponds. Just talking about placer claims, you have man-made ponds. What does it look like? Some of them look grey, and some of them look black, and you just have gravel, nothing growing.

When we talk about wetlands, the moose, they eat that stuff in the bottom of the wetlands. How long does it take to grow for that moose to eat to get his vitamins off of this pond? And it's really important. It's too late now, but for what we've got left, I think we have to be strong. Everyone has to be strong, because it's not just Native people talking.

The community has to get together and say, "This is what we want for our kids," because it's not going to be your life, and it's not going to be mine, but that's what we're talking about.

The Federal Government, they've got their Bible, and we have our own from day one how Native people live on this land. It's just like their law and my law. My law is different. I'm trying to speak from my heart. For what I see, all these changes as I've been on this earth, and it's not doing good. It's no good, no good for everyone.

The Indian River used to be a beautiful country. Not only me trapped there. We have a lot of Native people trapped there. There's still a lot of beaver, they're trying to make their home.

Now what have we got? Gravel. Like, we have different little roads where the oldtimers built their houses and stuff like that, where they were happy, everybody was happy; and at that time, there was no placer claim or mining claim on the Indian River.

I forget what year it started, but for me and my husband, we go trapping for beaver, or we float down the Indian River; and at that time, there were a lot of beavers. You go back there now, what a change for me. All you see is gravel and black mud.

And this oldtimer, we're trying to name the building down here, he used to have a cabin there. Now you don't see the cabin. He used to live there; and these little tools or whatever I found outside his house, what he made out of there to sew or to whatever he has to do with those tools. For me, I think to myself, "What a beautiful place. Now look at what we've got."

When we talk about Mother Earth, it's strong. We get everything from Mother Earth, and people have to think about that. You get spruce trees to make your home. We have berries. We have animals. If you look at what happened to the salmon, I don't blame no one. There's something wrong there, too, but nobody say anything. "Oh, the salmon is low or whatever," but there's a lot of questions out there, you know, and maybe the other side will have a different way of trying to protect his mine, and I'm trying to protect. It has to come to the end, good or bad. You see a certain place where it's dry, a little dry.

If you go up the Dempster, what happened there, too? You see a different area where it used to be wetlands. How come that thing dried up? But the most important thing I think we have to fight hard for is this wetland. I'm not a person that knows everything. I always told those guys that, too. I'm just trying to help our earth. Youth, too, it's going to be their land. It's not going to be ours, and I think that's important to everyone. It doesn't matter what colour we are. If you pinch you, you're going to say 'ow', but I like to put my two cents' worth in, you know; maybe one cent or two cents or whatever it's going to cost.

MR. TITUS

The Indian River wetlands, I went up there when I was 15 years old. At the mouth of the Indian River, about 600 or some odd yards from the mouth, there's a little lake on the left-hand side, and I go hunting there all the time, and we usually bring moose out of there. I was taken there by Peter Jonas. I used to hunt with that elder all the time, and he showed me all his favourite spots that everybody uses.

And salmon used to go up that Indian River, but it was clear and clean. They'd go up a certain distance and spawn. Fifty years later, there's no spawning there. There's no clean water there. A lot of it has been mined out over the last 50, 60 years. That valley can't sustain everything, you know.

It can't sustain mining forever. The land will die, you know. Reclamation is good in some ways, and somethings you can't reclaim. As far as the land goes, if the land is going to dry up and die, then there will be no animals. So, everything changes. The animals don't go there anymore. They go somewhere else.

You've got to protect them wetlands, because you have all types of ducks and swans and cranes that use that area for feeding and resting as they move north or after going from north-to-south, they will head south; and if you don't have that there anymore, they'll go somewhere else, and that affects your food harvest, eh.

As soon as you destroy an area and there's no feed for the animals, that changes their migration pattern. I'm talking about caribou. The same with moose, eh. A lot of people figure moose don't migrate. They migrate, and they move around. If they go to an area where there is no food, they're going to remember that, and they'll keep going, and they go to the next valley; and if that's the same, they go to the next valley, and pretty soon, they're out of the country. You know, they don't come back.

What I expect out of the Water Board is to be more involved than just okaying a water licence, you know. They have to have a review panel within their Water Board; and from the licence, okay, you've got a 10-year licence. They give them a 10-year licence. Well, after the first year, you get all the feedback from the CMI or NROs, and they read that. And okay, so many violations have happened. Take a look at this guy's water licence. Now, if he doesn't improve, then cancel it right now. Because if it doesn't improve the second year, it's never going to improve, you know. The Water Board has to say, "Okay, we have to do a review on all the licences we give out." I don't even care if it's a hundred thousand licences you give out. If you gave

them out, you do a review on them; and the thing is, only the Water Board can decide their course. The Water Board can pull a licence, eh, and the thing is, I think they're very reluctant to do that; but if you have all the evidence, plus complaints, take a look at it, pull this water licence.

That's what I'd like to see them do and start being responsible for giving out my grandfather's land and dirtying the water and making animals leave. You know, take some responsibility. Any government agency can give out anything, but you've got to stand up and say, 'Okay, we're responsible for that, and we must act on all these complaints.' All the waterways in Canada are protected by the Federal Government, eh. They belong to the Federal Government, which, in reality, belongs to the people. It doesn't belong to the government. It belongs to the people. Just make sure these agencies do their job. You know,, you've got to stand up and say, "Heh, enough's enough." It's time to slow down and you can put a stop to everything until everybody figures out what's going on and how the effects are happening, because you'll see it. You'll see the effects.

SPEAKER

The land has so much to offer to us, enough to take care of everybody. I don't think that the land should be pushed to the point where you visibly see impacts, because once that happens, then you've destabilized it already, and it's just like the body. When you make the body sick with a disease or illness, it's better to prevent that than it is to push it to the point where the illness shows up because you haven't been listening or tuning in, and then, it's much more difficult to reverse that.

The water and the wetlands are so important. They're, like, very essential in our world. Like, they support all of the tiniest organisms, you know, the microbes and stuff; and once those are out of balance, it throws everything else out of balance. Knocking any animal's system out, like, someone might take out a wetland someplace, and it didn't have as much of an impact as they thought; and then, they take another one out, and that's too much.

Like, you know, you don't know when you've gone too far until you've gone too far, and you can't just return that. You can't replace that. A wetland is a very concentrated area of life, and giving life to so many from microbes to moose to birds to fish to everything we can think of and can't think of. Yes, and all these things are essential. There are things that we don't know about the world that we live in to respect and honour every other lifeform.

We're not the only ones here, you know, and being caretakers – we're not landowners, we're caretakers – we're to take care of the land, and it's a great responsibility. And so, when I see things happening, like, if people are over-fishing in areas or they're just hacking trees down, you know, chopping the tops off of them on the side of the highway, and then, they're, just, like running over them, you know, there's just such a lack of respect for every living being. You know, thinking the tree is just a lifeless thing when it gives too much to so many. It's alive, and it's communicating. You know, science knows this, that it's much more than it seems. I just think that we don't look at a person holistically. You look at them as parts. We disregard things that we don't understand. We shut off, we don't have answers, and it's not fully understood; yet, there are systems that exist that are holistic but excluded from helping.

I know that gold has a medicinal property. I know there's so much gold on the planet that is being hoarded, like, wealth of it is being hoarded. And like, you have gold around, you know, but you still need more and more and more. Like, it's creating an imbalance, and nature is always going to balance itself out. Even with us, as humans, like, the imbalance is going to have to correct itself, and it's going to do it, whether we like it or not. So, whether they like it or not, they're going to be balanced.

SPEAKER

I think all the wetlands are equally important for the environment, and they help purify the water and the air, and they're good for the animals, of course. I'm not against mining if they only do it right, not wrecking all the creeks and putting back things, that they shouldn't just leave just one big rock pile, things like that,

replant the forest, replant the trees that they take out and stuff like that. Most mining, the only things that usually grow back is mostly willows and a few aspen trees and that. We need spruce tree and birch trees, a mix of trees to have purified air.

Some usually use chemicals to recover their gold that they put into the creeks and rivers with their wastewater, and they've got to do their ponds safer so it won't break and leach into the river and streams. A lot of mines, too, they leave old equipment behind and a lot of garbage sometimes. It seems like they just take all the money, and then, just leave all the garbage, which is not good. They should have it, like, when they have a mine, they inspect the area for cleanup in case of effluent, and then, that way, if they just take off, we don't end up paying for everything ourselves. It's their responsibility.

If you watch Goldrush, you can see how much land they take out. I'm not sure if they put it all back together when they go. They say they do, but, you know, we'll never know. They might just slough everything, the garbage through their mill and bury it with dirt. That's how they get rid of it. They should have somebody there, checking it when they're putting it back together to make sure that they do the right job.

So, I don't like mining too much, because they do ruin a lot of wetland. They use the wetland in their mining, and then, they can't put back the water that they use. Most of the time, it's got salt and everything inside it, probably chemicals, oils, taken from equipment and stuff that they run. The creek runs into the pond, and it's got its own flow-through through the roots and all the moss and stuff. By the time it comes out the other side from those ponds, it's cleaner. It's way cleaner, like the filters you can buy in the store for your water. Nothing works better than nature to fix it. So, wetlands, like peatmoss and moss, when they dig it out and that, it releases it. It's like the Amazon rainforest. It's almost gone. And it used to take – I think it's half of the world's carbon dioxide out of the air. And if we lose all of that, then, our air pollution will get worse and worse and worse.

SPEAKER

Back in the old days, they used a wooden sluice box and shovels, picks; and you see those pictures, and you look, they were working hard, and they were looking out for the environment, the wetlands. You didn't see big equipment. Then when this goldrush came in and they're bringing in all this equipment and everything like that, that's fine, but they kind of ruined the areas. If they mine in the area, it's just like Mardy Knutson, he cleans up and tries to put it back; and if that area is out of gold, then he doesn't just leave it. He puts an effort towards it.

I don't have nothing against mining, but it's the wetland that we need to care for, take care of. We need more information put out there so that people can I understand that this is very important, and if there are so many people asking for this wetland, they should not it, like, you know, not just say 'yes, no, yes, no,' and wait for something to happen. Let's just start doing it now so it's, like, 20/20. We need to really clean up all this for our next generations. It's all kids, all people. We're not going to be here to keep going. We need to have it going now so that they can keep it up, you know, not just say, 'Yeah, we're going to do it.' We need to do it now, not the generation in 2030, you know.

Mr. Slater thanked the elders and citizens for sharing their views and the important roles of wetlands and the effects of mining. He also thanked the TH team, especially Ms. Chris Clark, for their work in compiling the input for the Board's consideration.

MR. DARREN TAYLOR

The next TH presentation provided some perspectives about wetlands and mining from the Natural Resources Department of the TH Government. Mr. Darren Taylor is the Director of the Natural Resources Department, a role he's held since 2007. He began working for his First Nation in 1990 to support the land claims process, and he subsequently served a nine-year term as Chief from 1998-to-2007.

To ensure that Mr. Taylor's comments are captured accurately, the following is taken directly from the Virtual Hearing Transcript with no summarization or interpretation.

MR. TAYLOR

Hello, and thank you, Mr. Chair, and Board members. I'll just start with my presentation. The day is fast upon us when Yukon Indian people will disappear, when we'll be no more. We're losing our learning environment. Our traditional knowledge is dying from loss of the environment and the habitat that supports it. Land conversion is upon us.

The Indian River Valley that exists today is much different from the broad, sweeping wetland habitat it used to be. With the increase in activity levels and lack of reclamation and destroyed habitat, I don't feel as comfortable with harvesting down there anymore. I don't even want to drive down there for leisure. It's too depressing. I find it depressing, because I see a loss from all the change, including the loss of my ability to have a successful harvest.

Miners challenge me if I go and hunt or camp on the land. I don't want to go down there and get into arguments with miners every time I want to harvest. I want to be go out and harvest in my traditional territory wherever I choose and not get frowned upon and asked 'What am I doing here?'

The Indian River Valley is no longer an area I want to take my children or their children. I wouldn't want to bring them there and scare them away from hunting because of it being too difficult. I have heard from our young people that when they walk around the tailing piles, they experience a profound sense of loss.

Our children are already losing the taste of salmon, and now, they, too, are losing other traditional teachings on the land. Through the erasing of the land and water and our ties to that land and water, we are losing ourselves and our children from the land. Our very children are disappearing from the land.

Harvest always dies when our relationship with the land is disrupted. We rely on being out on the land to teach our children. So, damaging the land and our ability to hunt results in the erasing of indigenous knowledge.

If there are no longer elders on the land, telling the children and the grandchildren the best hunting spots and passing on our way of life, we will no longer be on the land, and we will lose our culture.

I can recall when I was younger, me and my brothers would go out with my father. We would take full opportunity of this family time. We would go out and harvest chinook salmon, moose and caribou and collect firewood. We would exchange stories and traditional knowledge. For me, this was the important thing. And now I pass on this knowledge and traditional practises to my children and grandchildren.

To me, this means passing on food security, healthy living, oral history and family traditions; to me, sharing stories about the use areas throughout the traditional territory, where we go berry picking and harvesting of Chinook salmon, caribou and moose, showing where on the rivers we have old camps before they are washed away, sharing where my parents are from, 12 Mile and 8 Mile.

It is important to pass this knowledge on to my children and grandchildren. They need to know these things. If not, there are no family or cultural ties to the land. Without this ability, our identity as aboriginal descendants no longer exists. I don't want my grandchildren growing up not knowing who they are and where their family is from.

The land provides, and we obviously rely on it. We can no longer exploit these resources. We need to use these resources wisely. If we don't, and continue to pillage for a profit, this will all eventually end. Although local operators do their best to reclaim, this is not the reality of the situation.

Most operators are no longer local. They never spend a winter here. They come up for the mining season, and then, they're gone. They are taking advantage of what is available to them without any regard for effects on local area residents and intact environments for harvesters. They do not have a vested interest in the traditional territory or leave the land and water intact.

Again, like many other citizens, I'm not against development or mining. However, it needs to be done in a better way, in a modern and realistic way. The pre-entry wild west doesn't work today. We are reaching a tipping point beyond which there is no turning back.

The Dawson area is more at risk than anywhere in the Territory, and even Canada. Despite having an agreement, I would say our rights, titles and interests are more at risk now than ever before.

I see a lot of talking and little action to protect and reclaim wetlands. As a result, I see death by a thousand cuts or a thousand projects. I'm becoming cynical, because I don't see much of a future.

I have lost trust in both governments and individuals. I don't see modern governments taking into consideration how our actions today affect our surrounding environment and how they may have impacts on our future animal populations and their habitats.

We are coming to the Water Board because of the constant overturning of YESAB recommendations to Yukon, because this shows the constant struggle we're up against in having our treaty rights recognized and upheld.

If we continue to destroy the land and water without regard, we will replicate what has happened in the Indian River throughout our traditional territory, and what will we be left with?

The Indian River could be an example of how to do things better and identify things that shouldn't be done or repeated in other areas of the wetlands. We need to learn from our mistakes. Most people who learn from their mistakes become better people. If we do not learn, our lives become full of mistakes without corrective action.

We then become dysfunctional and selfish, a person who does not think of the needs of others or the land. We need the Water Board and governments to fulfill their obligations to First Nations.

Governments need to do something to prove that they have our interests in hand and in heart. They are not looking at the value or impact to environment, including wetlands, and what that can provide for the economic base of the future.

I would like to see a recognition of the final agreements. I would like to see the protection of our aboriginal rights, titles and interests.

We need effective measures to protect our wetlands and to reclaim them to the natural state that they are mined. We need new legislation, guidelines and policies; and in the meantime, we need the Water Board to step in and stop further damage until those measures are in place. We need to stop issuing licences where there will be irreparable harm where wetlands can't be restored and to work with us to make sure the right measures are in place, going forward.

Today, we are talking about conserving and protecting wetlands as an integral part of the land that we rely upon for our identity and survival. What we are really talking about today is conserving and protecting our deeply-ingrained connection with the land and water. This is our spirituality, and this is who we are as Dänojà. Thank you.

TECHNICAL PRESENTATIONS

DR. LEE FOOT

Mr. Slater introduced Dr. Lee Foote as the next presenter that would cover the functions of wetlands and how wetlands can be affected by disturbance and the feasibility and cost of wetland reclamation. Dr. Foote is a wetland ecologist and a professor emeritus at the University of Alberta, where he has conducted wetland reclamation and wildlife work. He has been involved with Yukon wetland issues for over three years.

Dr. Foot thanked the Water Board for allowing this presentation and he acknowledged that previous speakers have done a great job and covered similar ground including Jeff Bond and Scott Smith on wetlands. The following are summary points from the presentation at the Virtual Hearing.

- There are three descriptors that make a wetland: shallow water, saturated soils and water-adapted plants.
- An analogy of levers was used on managing these wetlands.
 - Levers provide a certain amount of leverage that gives management control for reclamation or for the disturbance. They can be pushed either way.
- Wetlands are identified by:
 - 1. Shallow water at or above the ground surface.
 - 2. Saturated soils typically high in humus & organic matter.
 - 3. Water-adapted plants with wet roots & seed delivery.
- Water is the top driver (or lever) and what separates a wetland or aquatic habitat from terrestrial habitat.
- The geology is another lever that considers factors such as the chemistry, organic content, and nutrient content.
- The final component (or lever) is the landform which plays a vital role in mining including the slope and the arrangement and the depth of these various features of the landscape.
- The upper reaches of the Indian River are characterized by clearer water with no mining upstream and an intact area. Landforms are typically flat with shallow and meandering streams (see Slide below).

Example of Indian River original conditions



Water from catchment in steady, predictable timing and amounts

Geology- organic soils, woody debris, low sediment flows, no sediment exposed

Land Form-flat, slow flow, meandering stream channel, vegetated throughout, no stones at surface, few shallow ponds

Now, what happens when we pull management or mining levers?

Tr'ondëk'iwëch'in Presentation - Wetland Science and Reclamation

5

- “Pulling” the water lever results in river diversion, blockages through, sediment-accumulation, with more regional effects such as road erosion and flooding in Dawson City area. This is not necessarily caused by loss of wetlands, but the effects of large wetland loss in the catchment areas can result in more extreme and erratic stream flow conditions.
- The geology lever results in movement of mud with a change in the colour of the river changes downstream from sediment offloading. When organic matter is stored and dried, this material loses up to a third of its volume with carbon that is lost to the atmosphere.
- The landform lever is vital. For example, deep water habitats and high hummocks sometimes three and four meters high or five meters high are totally anomalous. These do not occur in the pre-mined Indian River system.

The Slide below illustrates the above points.

Un-mined riverside. River-grass beds- forest blend across wetland zones.



Mined, abrupt change from river-mud bank- willow shrub. Steep rock piles, deep channels,

Wetland blending zone is lost.



Biological Changes in Indian River

- Vegetation removal & extensive bare soil and rock ¹
- Breaks up continuous habitat and movement corridors ²
- Fish passage interruption ³
- Groundwater zone alteration ⁴
- Habitat loss, large part of landscape in spoil & deep pits ⁵
- Prone to exotic & invasive species establishment ⁶

1 – Tabacchi et al. (1998) Freshw. Biol. 40:497-516; 2- Naiman et al.(1993) Ecol. Appl. 3(2)209-212; 3- 4- Stanford & Ward (1988) Nature 333(1):64-66; 5- Imagery; 6- Foote 2001 PhD thesis, Utah State Univ

T'ondék Hwéč'in Presentation - Wetland Science and Reclamation

11

- Peat is not just a jumble of organic matter and dead stems. It is a carefully arranged layering, very different at the bottom than it is at the top, and the 'Humpty-Dumpty' analogy applies here. You can put the peat back on a site but rearranging the stems and the fine granules in the same order with the same permeability is not possible.
- Even if peat can be replaced, the permafrost will not be established in a meaningful time period.
- There are some risks associated with removing peat including destabilizing the downstream, interrupting water flows and smothering wetlands with sediment loading.



Black peat soil filled with plant roots and leaves.

The world's greatest carbon storage.

Dried, it decomposes into atmospheric gas (CO2).

- In terms of reclamation the Slide below shows an estimate of \$153,000 per hectare for reclamation costs associated with one hectare of soil, one metre deep, moved and replaced, and then planted.

Reclamation cost estimate to plan, handle soils, fill, contour and plant 1 hectare wetland

| Equipment & Salary | \$/Hr | Cu M/hr Handling rate | Hrs to fill 1 ha, 1 m deep (10,000 cu M) | Item Price |
|--|-------|-----------------------|--|------------------|
| D8 Dozer | \$310 | 100 | 100 | 31,000 |
| Hitachi 450 excavator | \$400 | 100 | 100 | 40,000 |
| Belly Dump/tractor | \$190 | 50 | 200 | 38,000 |
| 4 hrs Mob/Demob (tot) each machine | | | | 3,600 |
| Operator salary 100hr @\$40/hr | | x 3 machines above | | 12,000 |
| Fuel @ \$ 7.00/hr per machine x 3 machines x 100 hrs | | | | 2,100 |
| Engineering salary \$1000/day for 4 days including two site visits | | | | 4,000 |
| Biologists salary for handling YTG paperwork and site demos | | | | 3,000 |
| 10,000 plants installed on 1-meter spacing @ \$1.50 per plant | | | | 15,000 |
| 7200 gal water truck irrigation @\$200 hr x 3 times per summer | | | | 3,600 |
| Water truck operator salary for 3 summer trips/yr | | | | 700 |
| | | | Total | \$153,000 |

- In terms of an estimate of reclamation on disturbed mine sites in the Indian River, using Karen McKenna's data of 3,300 hectares of mined wetland in the Indian River drainage, the reclamation estimate is approximately \$ 500 million dollars as shown in the Slide below.
- There are also cultural, aesthetic losses and peat diversion atmospheric emissions with mining on wetlands which are all very difficult to monetize.

Peatland Reclamation Cost Estimates

Northern Alberta reclamation rates varied from \$10,000/ha (marsh to marsh, no soil movement) to \$750,000/ha (re-contour, water source, revegetating for peatland development and research). Peatlands development failed though.

Karen McKenna's data indicates 3296 hectares of wetland mined in the Indian River drainage.

At **\$150,000 per hectare** the reclamation costs would be approximately **\$500 million**, with no guarantee of success.

At the extremes:

If reclamation costs were \$10,000/ha, current IR reclamation price tag would be **\$33 million**

If reclamation costs were \$750,000/ha, current IR reclamation price tag would be **\$2.5 billion**

DR. CHERI WESTBROOK

Mr. Slater introduced Dr. Cheri Westbrook as the next TH presenter. Dr. Westbrook is a professor in the Department of Geography and Planning and the Global Institute for Water Security at the University of Saskatchewan. She has 15 years of experience leading research projects that are examining the eco-hydrology of wetlands in cold regions, including in the Rocky Mountains and Southern Patagonia and the Northwest Territories. She has published more than 40 scientific articles on wetlands and has been engaged in wetland projects in Yukon for the past three years.

Dr. Westbrook described wetlands not as a single type of ecosystem but a wide variety of ecosystems, as distinguished from other landforms by three factors: their hydrology, soils and vegetation. She further described wetlands as the most biologically diverse of all ecosystems. The one characteristic in common among all wetlands is that at least periodically, the soils are saturated or inundated, meaning they occur where surface and/or groundwater or permafrost creates flooded, ponded or waterlogged conditions. In Canada, the National Wetland working group defined a wetland for both scientific and regulatory purposes as *'land that is saturated with water long enough to promote wetlands or aquatic processes and indicated by poorly-drained soil, hydrophytic vegetation and various kinds of biological activities, which are adapted to a wet environment'*.

The following are summary bullets extracted from Dr. Westbrook's presentation and the Virtual Hearing transcript.

- The Wetlands classification does not include environmental, social, cultural or economic importance of wetlands. It is a hierarchical system that includes wetland class, wetland form and type.
- There are five classes, based on different developmental characteristics and environments.
- Forms are based on surface water and underlying mineral flow characteristics, and types are based on plant communities.
- The five classes are grouped into families. There are organic wetlands with carbon-rich soil, which we heard earlier are referred to as 'peatlands' and mineral wetlands.
- Bogs and fens are peatlands.
- Marshes and open water, meaning areas with less than two meters deep of water, are considered mineral wetlands.
- Swamps are between being peatlands and mineral wetlands, depending on the soil conditions.

Wetlands: A term used to embrace a wide variety of ecosystems

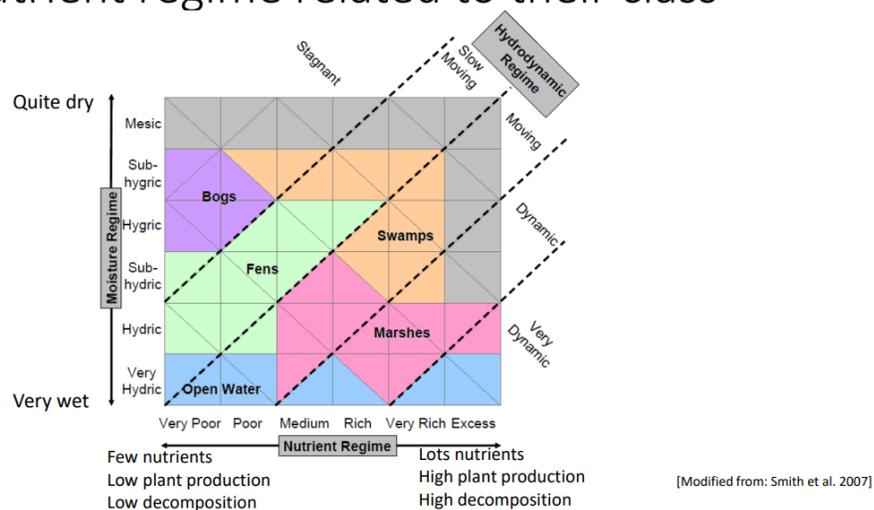
Wetlands are not just one vegetation type (e.g. conifer forest) or one hydrologic regime (e.g. ponded water).

- **Hydrologically** wetlands can be inundated or saturated by wide-ranging factors
- **Soils** can be organic (peat), fine-grained mineral or cobble
- **Chemically** can vary from saline to fresh, and nutrient poor to nutrient rich

The one characteristic in common among all wetlands is at least periodically the soils are saturated or inundated

- Wetlands are complex and have wide-ranging water and nutrient regimes which depends very much on their class.
- The Slide below shows that peatlands are near the top of the diagram in purple and in green, with a little bit in orange. They are characterized by water tables that are near but not usually at the land surface, slowly flowing water through them, low nutrient content and low plant production.
- These are the characteristics that create a low oxygen environment, in which organic plant materials are able to only slowly decompose, and so, they develop the peat. Those are the soils with the high organic carbon content.

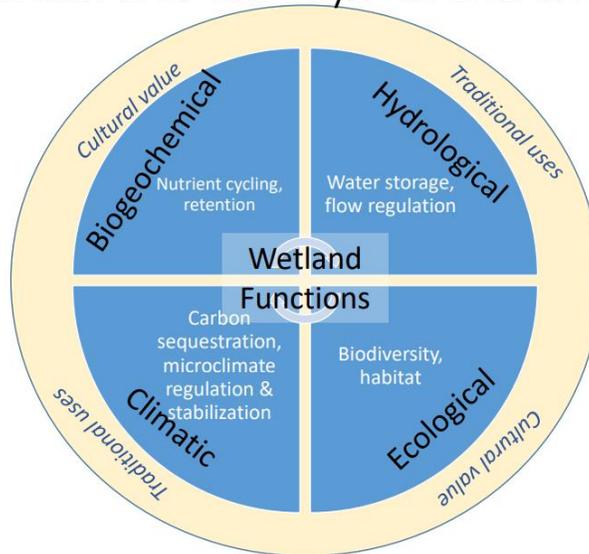
Wetlands have wide-ranging water and nutrient regime related to their class



- ‘Wetland Functions’ are defined as natural, physical, chemical and biological processes that are associated with wetlands independent of their benefit to humans.
- Examples of functions include hydrologic transfer, water storage, biogeochemical transformation, carbon sequestration, energy and water transfer between the atmosphere and land surface, soil stabilization, food chain support and habitat for fish and wildlife.
- As wetlands regulate the flow of energy and matter, they are referred to as ‘the kidneys’ of landscape (see Slide below).

- Wetlands in the Indian River Valley were recently mapped and classified in late McKenna (2017). This work shows that peatlands are the dominant wetland type in the undisturbed area, with fens being the most dominant of them.
- The Indian River is in the discontinuous permafrost zone, but of course, permafrost can be locally extensive within the zone, and many of the wetlands in Indian River are permafrost affected.

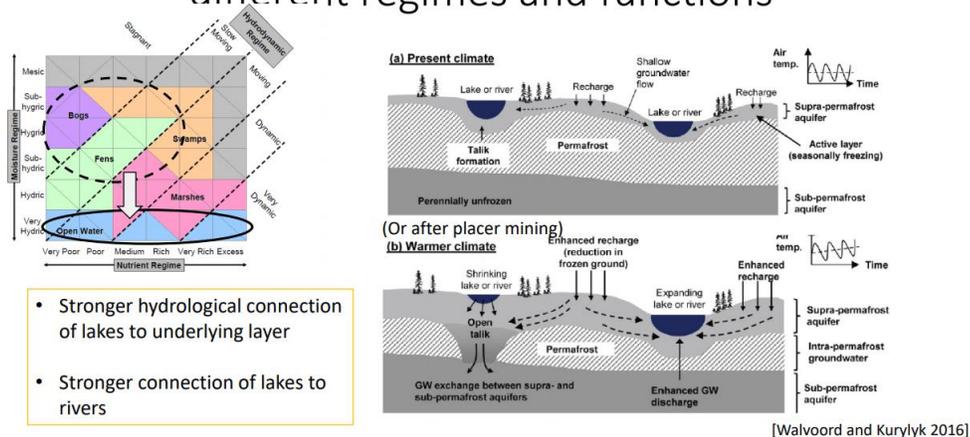
Wetlands: the 'kidneys' of the landscape



- Peat plateaus, including their small, isolated bogs, have deeper snow pack than other parts of the landscape and produce melt water that drains through the fen active layer, which is the seasonally thawed soil; which drains to channel fens and connected bogs.
- Channel fens have high water tables, and water entering them that is slowly conveyed downstream to the watershed outlet, often through the soils, not over the land surface. This means that water conveyance is the primary hydrological function of these types of wetlands.
- Bogs, in comparison, have reasonably high and stable water tables but not right at the land surface. Water entering bogs is removed primarily through evapotranspiration, through plants and partially through groundwater recharge. The primary function of bogs is water storage.
- Placer deposits are located in wetlands, mostly peatlands, in the Indian River Valley and elsewhere in the Yukon.
- Avoidance of impacts to wetlands, while desirable, is difficult, and mitigation measures are typically needed.
- Mitigation measures should be designed so that replacement wetlands provide the hydrological and ecological equivalency of the lost wetlands.
- The problem is that current reclamation practices do not effectively replace bogs and fens.
- The eco-hydrological processes that lead to continued peat accumulation over time is extremely difficult to replicate.
- Peatlands also develop over long timescales, much longer than would be considered for reclamation planning.
- The current reclamation practice being used in the Indian River Valley and elsewhere is the development of open water areas. Some of these open water areas are wetlands, meaning they have less than two meters depth of water; but some of them are deeper than that and are just open water bodies.

- There are also some marshes in the Indian River which have been spontaneously developed through beaver activities.
- Open water wetlands are not naturally abundant landscape features in the Indian River Valley. What is generally known from studies elsewhere in the north is that water collects in them from surface runoff, stream inflows or seasonal thawing of the active layer.
- Open water bodies added to the landscape following placer mining function somewhat like open water wetlands do under climate warming conditions. Permafrost is thawed beneath these open water bodies, which facilitate the vertical exchange of water with the groundwater system.
- There can also be increased recharge and enhanced groundwater discharge through activated, near-surface aquifers that can lead to lake expansion and increased conveyance of water through a river channel.
- The Slide below summarizes the hydrological and hydrogeological conditions described in the above points.

Peatlands and open water wetlands have different regimes and functions



- Currently, placer mining projects are assessed on an application-by-application basis. The loss of one wetland or a few in a watershed may not be noticeable or detectable, especially if the wetlands are small or not located along major flow routes.
- The problem is that the tipping point in an ecosystem can cause abrupt shifts in an ecosystem state from one to another or in actual ecosystem collapse is not known.
- Some key questions:
 - Is ecosystem functional loss the tipping point or is it a function of how much wetland area is lost or changed?
 - Is it related to how much wetland function is lost?
 - Are loss of wetlands in critical landscape positions?
 - Is fragmentation a key metric?
- It is recommended that the Precautionary Approach be used as well as a cumulative impacts study in the Indian River area to understand current wetland conditions in comparison to an undisturbed system such that future development impacts can be properly evaluated by the Board.
- What is happening in the Indian River Valley and at other placer mining locations in the Yukon is large-scale ecosystem alteration. Peatlands, mostly bogs and fens, are being lost during placer mining. They are being replaced by systems that have a mixture of open water wetlands and other open water bodies.

MR. RANDY SUNDEMAN

Mr. Slater introduced the next technical presentation from Mr. Randy Sunderman. Mr. Sunderman has degrees in biology and economics and is the principal with Solutions Consulting in Kamloops. Mr. Sunderman has provided socio-economic expertise to numerous land resource management planning processes, timber supply reviews, tourism opportunity processes and has been involved in several environmental development economic assessments in the Yukon in the last eight years.

Mr. Sunderman introduced himself and spoke to the socio-economic and environmental multiple account analysis of the placer mining in the Yukon in the and in the Indian river area. The following is summary points are taken from his presentation and the Virtual Hearing Transcript.

- THengaged a consultant to study the socio-economic impacts of the placer mining in their traditional territory and the Yukon.
- The focus of this work was on the Indian River watershed and wetlands.
- The report was organized into a “multiple accounts analysis” methodology, which includes several accounts.
- Multiple accounts analysis methodology is designed to provide a background, description and assessment of the socio-economic and environmental values.
- Multiple accounts analysis framework has been used over the past 25 years in land use planning and major projects throughout British Columbia.
- The following are the Accounts used for the socio-economic analysis for the gold production in the Indian River watershed.

Economic Account

| Indicator Category | Indian River Watershed | Yukon |
|-------------------------------------|---|--|
| Volume and Value of Gold Production | <ul style="list-style-type: none"> Avg of 30,542 crude oz annually (1978-2019) including tributaries Represents approx. 36% of Yukon total over period <ul style="list-style-type: none"> With 10% from Indian River main stem 26% from Indian River tributaries | <ul style="list-style-type: none"> 74,400 crude oz (2017) \$96.5 M (2017) 165,600 crude oz (highest production 1989) |
| Claims | <ul style="list-style-type: none"> Placer claims 6,109 (approx. 22%) (2020) 27 (Class 1); 4 (Class 3); 117 (Class 4) | <ul style="list-style-type: none"> Placer claims 28,152 (2020) |
| Employment | <ul style="list-style-type: none"> 250 direct workers (2018) Some dependence on reality TV programming among several firms. | <ul style="list-style-type: none"> 650 direct workers (2015) 64% are workers Yukon residents (2015) \$17.4 M direct employment Income (2015) 63 spin-off workers (2015) \$2.9 M in spin-off employment income (2015) |
| Gross Domestic Product | <ul style="list-style-type: none"> Mining represented 6.9% of \$2.51 Billion GDP for Yukon in 2017 Yukon Placer Mining GDP effects is estimated at \$40.4 M (2015) Placer mining was approximately 37% of total mining and quarrying GDP activity in 2015. | |

Tr'ondëk Hwëch'in Presentation: Yukon Placer Mining Socio-economic and Environmental MAA

3

Government Finance Account - Revenue

| | Dawson Mining District | Yukon |
|----------------------------------|--|---|
| Royalties | <ul style="list-style-type: none"> \$23,405 (88% of total) (2017) | <ul style="list-style-type: none"> \$26,405.38 Total (2017) Based on royalty of \$0.375 per oz. |
| Financial securities | | <ul style="list-style-type: none"> Small portion of total mining <ul style="list-style-type: none"> One Class 1 placer mine paying \$4,263 (2020) No securities held for Class 2, 3 or 4 placer mines |
| Placer Fees | | <ul style="list-style-type: none"> \$353,000 (2017) |
| Water Board and Land Use Permits | <ul style="list-style-type: none"> \$21,488 (2019) in TH Traditional Territory | <ul style="list-style-type: none"> Potentially \$43,000 (2019) |
| Map & Chart Sales | <ul style="list-style-type: none"> Potentially \$2,000 (2017) | <ul style="list-style-type: none"> \$4,000 (2017) |
| Fines and Penalties | <ul style="list-style-type: none"> Unknown | <ul style="list-style-type: none"> \$199,500 (2017) |
| Heritage Resources | | <ul style="list-style-type: none"> No record fees |
| Taxation | <ul style="list-style-type: none"> For Gold and Silver Ore Mining using Statistics Canada Input-Output Model would yield taxes of \$9,400 in direct and \$1.1 M in total production taxes to all levels of government in 2017. Placer mining industry would be portion of this. | |
| Magnitude | <ul style="list-style-type: none"> Placer mining industry revenue would be portion of \$1.7 M total above | |

Tr'ondëk Hwëch'in Presentation: Yukon Placer Mining Socio-economic and Environmental MAA

4

Government Finance - Expenditures

| Indicator | Dawson Mining District | Yukon |
|--------------------------------------|---|--|
| Yukon Mineral Exploration Program | | <ul style="list-style-type: none"> • \$440,000 for 15 -21 projects (2017) • \$2.5 M committed for 2020 |
| Fuel Tax Rebate | | <ul style="list-style-type: none"> • Estimated at \$553,725 |
| Annual Grants to Mining Associations | <ul style="list-style-type: none"> • \$120,000 Klondike Placer Mining Association (2017) • \$150,000 Yukon Chamber of Mines (2017) | |
| Government Services to Placer Mining | <ul style="list-style-type: none"> • Mineral resources “expenditures” for 2017 came to \$4,093,000 and the “Operating and Maintenance” allocation to \$6,272,000 • Allocating 24% to placer mining yields \$2,487,600 (2017) | |
| YESAB – federal expenditures | <ul style="list-style-type: none"> • 69 placer mining applications representing 34.5% • Placer share of budget would be just under \$2.0 M (2017) | |
| Magnitude | <ul style="list-style-type: none"> • Placer mining expenses would include \$4.5 M plus portion of \$1.2 M above (2017) | |
| Other Special Projects | <ul style="list-style-type: none"> • Special projects total \$16.3 M over multiple years: <ul style="list-style-type: none"> • Strategic Investment Northern Economic Development - \$8.2 M (2009-14) • CanNor grant to YGS - \$2.5 M (2016-18) • Centre for Northern Innovation and Mining grant of \$5.6 M (2013-17) • Yukon Resource Gateway construction – Federal Government providing \$247.3 M and Yukon Government providing \$112.8 M (over eight-year period) • Unknown share of this funding benefiting placer mining | |

Tr'ondëk Hwëch'in Presentation: Yukon Placer Mining Socio-economic and Environmental MAA

5

Social and Community Account

| | Dawson City and Area |
|------------------|---|
| Total Population | <ul style="list-style-type: none"> • 2,365 (2019) |
| Businesses | <ul style="list-style-type: none"> • 228 total businesses • Yukon Chamber of Mines directory identified 7 members in directory • Dawson Business Retention Expansion 2017 survey identified 14 growing businesses • 2 attributed strong and 4 moderate growth as result of mining • However, not clear if associated with placer mining. |
| Labour Force | <ul style="list-style-type: none"> • Total estimated labour force is approximately 1,385 • Mining and quarrying (including placer mining) has an estimated labour force of 130 or 9.4% of total • Mining also supports employment in other labour categories |

Tr'ondëk Hwëch'in Presentation: Yukon Placer Mining Socio-economic and Environmental MAA

6

Environmental Account

- **Indian River wetlands and Impacts:**
 - **Ecological values** are typically high compared with other ecosystems.
 - **Downstream repercussions** and negative affects.
 - Subject to **adverse impacts from placer** operations
 - Examination and research prompted **expert concern** over the conditions that currently exist.

Environmental Account

- **Reclamation Issues:**
 - Unsuccessful reclamation from placer mining across all terrains (Dr. Foote)
 - Estimated cost of Indian River wetland reclamation at **\$150,000** per hectare.
- **Placer Mining Disturbance:**
 - In the Dawson Planning Region directly linked to 120.70 km², 54% of all human disturbance.
- The Indian River watershed has the **highest proportion of surface disturbance** of all the watersheds in the Dawson planning region.

Environmental Account

- Fish Habitat and Placer Mining:
 - Effects to fish habitat increase **direct footprint** downstream, with suspended sediment resulting from placer mining operations has shown serious sublethal effects on fish including:
 - decreased feeding efficiency
 - reduced growth rates
 - spatial displacement
 - reduced habitat area
 - and increased susceptibility to other environmental stressors

Tr'ondëk Hwëch'in Presentation: Yukon Placer Mining Socio-economic and Environmental MAA

9

Indigenous Account

| | Tr'ondëk Hwëch'in (TH) |
|--|--|
| Legacy of Placer Mining | <ul style="list-style-type: none"> • The history of colonialism, subjugation, racism, and disease had a corrosive impact on the life-sustaining culture and land of the people. • Impact when food sources were harvested in unsustainable numbers, lands and waters were damaged by resource extraction activities that affected large areas. |
| Indigenous Perspective of the Indian River Watershed | <ul style="list-style-type: none"> • Historically, the Indian River valley was frequently used and highly valued area. • Use continued following contact. • Four TH settlement land parcels highlights the significance of area then and for future generations. • Now use the valley less because of placer mining impact. |

Tr'ondëk Hwëch'in Presentation: Yukon Placer Mining Socio-economic and Environmental MAA

10

Indigenous Account

| | Tr'ondëk Hwëch'in (TH) |
|---------------------------------------|---|
| Indigenous Perspective on Disturbance | <ul style="list-style-type: none"> Roads in the TH Traditional Territory have had widespread impacts on both wildlife and ecosystems and on constitutionally-protected subsistence harvesting rights. Placer mining activities have impacted ability to harvest in areas Conflicts often deters citizens from entering or passing through areas of active mining. |
| Socio-economic Impacts of Mining | <ul style="list-style-type: none"> Gold rush was an acute stress that carries on for the TH, into the present day. Sharp contrast between the traditional TH stewardship and placer mining land use. Increased substance abuse and family violence are directly linked mining. The financial costs born directly by TH today. |

Indigenous Account

| | Tr'ondëk Hwëch'in (TH) |
|----------------------|---|
| Economic Development | <ul style="list-style-type: none"> Between 30 to 40 seasonal workers and at least three to four mine owners are Tr'ondëk Hwëch'in citizens. However, noticeable opportunity costs associated with: <ul style="list-style-type: none"> Agri-food production – considerable local agriculture potential Non-timber forest products – wood fuel, locally made crafts, clothing, mushrooms, birch sap, berries, speciality foods, traditional medicines Tourism – Yukon market is primarily wilderness destination Traditional Harvesting – food security |
| Governance | <ul style="list-style-type: none"> Overall royalty is small, TH share a fraction (i.e., \$69 in 2016). Estimated at \$600,000 to \$1 million annually is spent by TH responding to placer mining issues, rather than developing mechanisms to care for an provide access to Settlement Land. Participation in land management decisions is part of traditional stewardship obligations. Since 2013, TH has repeatedly highlighted the importance of wetlands and concerns about placer mining. |

Summary of Slides

- Average annual placer gold production in the Indian River Watershed is 30,542 crude ounces which is approximately 36 % of the Yukon total production.

- Approximately 6,109 placer claims in the Indian River Watershed which is 21 % of total placer claims in Yukon.
- 250 direct workers in the Indian River Watershed.
- Mining represented 6.9 % of Yukon's GDP with placer mining being 37 % of this activity.
- Government royalties from placer mining in the Dawson Mining District in 2017 was \$ 23,405.
- Direct labour force in the Dawson area for mining and quarrying (including placer) is estimated at 130 or 9.4 % of total in Yukon.
- Estimated reclamation costs of wetlands are \$ 150,000/ha.
- Indian River watershed has the highest proportion of surface disturbance of all watersheds in the Dawson planning region.
- Historically the Indian River valley was frequently used and a highly valued area.
- Placer mining activities have impacted ability of TH citizens to harvest.
- Between 30 to 40 seasonal workers and at least 3 to 4 miners are TH citizens.
- TH has a small share in royalties from placer mining (\$ 69 in 2016).
- Estimated \$ 600,000 to \$ 1.0 million spent each year by TH government responding to placer mining issues.
- Since 2013 TH has repeatedly highlighted the importance of wetlands and concerns about placer mining.

MR. BILL SLATER

The next presenter was Mr. Bill Slater. He spoke about the Board's Draft Wetland Information Guidelines and the three specific questions that the Board raised in the Hearing notice.

Mr. Slater summarized that during the Virtual Hearing, the series of TH presentations have included TH elders and citizens, staff and experts about the ecological and cultural value of wetlands and what can happen when you disturb wetlands through mining activities. The practicality and costs of reclamation and the positive and negative impacts of placer mining have also been discussed. Chief Joseph provided some context about how TH has raised concerns in the past and began raising concerns in 2013 about the effects of mining in wetlands.

Prior to responding to the Board questions, Mr. Slater summarized some important caveats. TH's point of view is that there should be no consideration of applications that include placer mining in wetlands, regardless of what information requirements required by the Board. Before the consideration of applications, there is a need for more information about the past and current status and extent of wetlands and about effects of disturbing wetlands or converting wetlands. It is also important to put in place protection measures where they are needed, to define appropriate disturbance thresholds and to understand how to reclaim wetlands and their functions.

For the purposes of this report, it was decided to include the slides from Mr. Slater's presentation for an accurate reporting of the TH response to the Board's Questions at the Virtual Hearing.

Hearing Questions

QUESTION 1. WHAT INFORMATION SHOULD BE REQUIRED TO SUPPORT A WATER LICENCE APPLICATION FOR PLACER MINING IN WETLANDS?

Question 1

What information is required to support a water licence application related to mining activities in wetlands?

- Caveats to response
 - Mining in wetlands should not be allowed until there is a better understanding of:
 - Past and current wetland extent and status
 - Cumulative effects of mining in wetlands
 - And establishment of:
 - Disturbance thresholds
 - Protection measures
 - Mining in wetlands (e.g., bogs, fens) should not be allowed until practicality and feasibility for reclamation of wetland function has been demonstrated



October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

5

Question 1: Application content for proposed mining in wetlands

1. Detailed description of existing and historic conditions, supported by monitoring and research results:
 - Traditional use and cultural values
 - Soil characteristics
 - Hydrology
 - Water quality
 - Terrain and topography
 - Vegetation
 - Wildlife and habitat
 - Fish and habitat
 - Wetlands and their classifications
 - Project area and reference area(s)
 - Etc.



October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

6

Question 1: Application content for proposed mining in wetlands

- 2. Detailed description of mining plan
 - Locations and sizes of land disturbances and activities
 - Earthworks
 - Sequences and timing
 - Quantities of material
 - Material handling, movement and storage
 - Access and other ancillary activities
 - Overlap with, and effects on, any wetlands or other sensitive areas
 - Etc.



October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

7

Question 1: Application content for proposed mining in wetlands

- 3. Detailed reclamation plan
 - Reclamation goal and objectives – considering input from FNs and other relevant parties
 - End land uses
 - Reclamation activities to achieve objectives
 - Reclamation schedule, including progressive reclamation
 - Wetland compensation/reclamation plan demonstrating no net loss of wetland function over life of project
 - Compensation plan for balancing short-term loss of wetland function during mining
 - Reclamation plan to restore wetland function at end of mining
 - Independent estimate of reclamation liability – providing estimate for 3rd party to conduct reclamation activities at point of peak liability for project.



October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

8

Question 1: Application content for proposed mining in wetlands

4. Consistency with protection measures (e.g., legal designations), land use plans, results of cumulative effects studies:
- Suitability of proposed mining activities
 - Disturbance thresholds
 - Other ecological or socio/cultural thresholds
 - Watershed cumulative impacts
 - Location relative to conservation/protection areas



October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

9

Question 1: Application content for proposed mining in wetlands

5. Proposed monitoring and adaptive management
- Environmental conditions
 - Project activities
 - Reclamation activities
 - Reclamation performance
 - Response plans
 - During mining, reclamation and post-reclamation



October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

10

Summary of Slides

- Mining in wetlands should not be allowed unless there is a better understanding of wetland status, cumulative effects of mining and establishment of disturbance thresholds and protection measures.
- Application content should include detailed descriptions required of existing and historic conditions such as traditional use and cultural values, soil characteristics, hydrology, water quality, terrain and topography, vegetation, wildlife and habitat, fish and habitat, wetlands classification and project area, supported by monitoring and research.
- Application content should also include a detailed description of the mining plan and a detailed reclamation plan.
- Applications should be consistent with protection measures such as land use plans and cumulative effects studies.
- Applications should also include proposed monitoring and adaptive management.

QUESTION 2. WHAT SHOULD THE WETLAND CONSERVATION, DEVELOPMENT AND UTILIZATION OBJECTIVES BE ON A WATERSHED BASIS AND HOW CAN THEY BE BALANCED ON AN APPLICATION BASIS?

Question 2

What should the wetland conservation, development and utilization objectives be for a watershed and how can they be balanced on an application by application basis?



Two-part question

- What are the objectives for watersheds?
- How do we balance the watershed objectives when considering individual applications?

October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

11

Question 2 – Part 1

Wetland conservation, development and utilization objectives?



- TH Conservation Priorities for Dawson Regional Land Use Planning Commission - Some wetlands should be protected and off-limits for industrial development.

October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

12

Question 2 – Part 1

Wetland conservation, development and utilization objectives?



- Disturbance thresholds
 - Limits of total disturbance for each kind of wetland on watershed basis
 - Set through cumulative effects studies, land use planning
 - Based on understanding of historical (pre-mining) extent of wetlands – i.e., not current extent in areas of substantial existing disturbance
 - Precautionary approach – limits must be zero until we understand the current conditions and potential effects of disturbance on wetland function
 - Include buffer zones around wetlands

October 27, 2020

Tl'ondék Hwéché'in Presentation - Views about Board Questions

13

Question 2 – Part 1

Wetland conservation, development and utilization objectives?



- Maintenance (i.e., no net loss) of wetland function at watershed level
- Conservation of wetlands for which function cannot be practically restored

October 27, 2020

Tl'ondék Hwéché'in Presentation - Views about Board Questions

14

Question 2 – Part 2

Management of individual applications?



- No further permitting for mining in wetlands in a watershed until:
 - Detailed inventory and characterization of wetlands and other ecological values
 - Completion of cumulative effects study
 - Policy on placer mining in wetlands developed/agreed to by YG and FNs
 - Establishment of wetland protection measures and disturbance thresholds

October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

15

Question 2 – Part 2

Management of individual applications?



- Apply watershed based disturbance thresholds – projects that lead to exceedance of thresholds will not be permitted until other areas of the watershed are fully restored
- Temporal and geographic spacing of permitted projects
- Constraints on types of activities that are allowed in wetlands – only disturb wetlands if absolutely necessary

October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions

16

Summary of Slides

- Planning initiatives, supported by cumulative effects studies only appropriate place to set watershed objectives.
- The Dawson Regional Land Use Planning Commission is one important planning initiative. TH has identified conservation priorities for the region, including priority wetlands that should be protected and off limits from industrial development.
- Prior to any disturbance of wetlands, appropriate thresholds are required that define the level of acceptable disturbance. Thresholds need to consider the historic extent of wetlands or it will fail to address the cumulative effects that have already occurred.
- A Precautionary Approach is required due to the inadequate understanding about the status of wetlands and the important potential effects of disturbance.
- A no net loss of function at the watershed level is required when developing watershed objectives.
- Addressing watershed objectives through individual applications requires watershed management objectives and regimes through planning processes with the appropriate management regime. At that point, the Board will be able to apply appropriate disturbance thresholds and implement other objectives, for example, no net loss.

- This might mean that there will have to be temporal and geographic spacing of projects and requirements for successful reclamation in some areas before other areas are open for mining. There may also be constraints on the types of activities that could lead to disturbance of wetlands.

QUESTION 3. WHAT WETLAND RECLAMATION OBJECTIVES SHOULD BE CONSIDERED DURING THE WATER LICENSING PROCESS?

Question 3

What wetland reclamation objectives should be considered during the water licensing process?



October 27, 2020

- If mining activities disturb a wetland or its function ...
- Tr'ondëk Hwëch'in Placer-Specific Wetland Reclamation Guidelines
- Reclamation Goal: *"The goal of placer-specific wetland reclamation is to preserve wetland functions by mimicking the natural site"*

Tr'ondëk Hwëch'in Presentation - Views about Board Questions



17

Question 3

What wetland reclamation objectives should be considered during the water licensing process?

- Priority objective: to restore wetlands and their function by replacing wetlands with same classes of wetlands
- Post-reclamation landscape with wetland (quantity and quality) and wetland function (ecological and socio-cultural) consistent with pre-project conditions
- Self-sustaining ecosystems in physically and chemically stable environment
- Eliminate public liability for reclamation – security bonding for full costs of reclamation
- Progressive reclamation – reclamation of mine components/disturbances within an established time period (e.g., 1-2 years) of inactivity
- Reclamation schedule – completion of reclamation within an established time period after end of gold recovery (e.g., 1 year)
- Performance monitoring and response – confirm performance of reclamation activities and address shortfalls:
 - Are reclamation objectives achieved?
 - If not, what actions will be taken?
 - Compliance and enforcement

October 27, 2020

Tr'ondëk Hwëch'in Presentation - Views about Board Questions



18

Summary of Slides

- For new projects, reclamation objectives would only come into play once the planning processes are complete and areas where mining may and may not disturb wetlands.
- TH has drafted Wetland Reclamation Guidelines that identify broad reclamation goals to preserve wetland functions by mimicking the natural site.
- The priority for reclamation where disturbance would be allowed is to restore wetlands and their function by replacing wetlands with the same class of wetland. If this is not possible the restoration of wetland functions is required.

- Security bonding, based on fully costed reclamation liabilities is required for proponents to make project feasibility decisions.
- This will also help manage reclamation liability risk for public governments and ultimately, ensure more effective reclamation of mining disturbances in TH's traditional territory and the rest of the Yukon.
- Performance monitoring by proponents is important to understand whether the reclamation has been successful and must continue in the post-reclamation period until successful long-term performance has been confirmed.

TREATY AND INDIGENOUS RIGHTS

Mr. Slater introduced Mr. Micah Clark from Aldridge & Rosling law firm to provide some general recommendations for the Board. Mr. Clark summarized that the current regulatory situation for placer mining in wetlands is untenable. The following are points summarized from Mr. Clark's comments in the Virtual Hearing Transcript.

- YG's presentation was focused on things that may be done and plans that may be developed and policies that may be developed in the future but this Public Interest Hearing is happening now in the current climate.
- The current situation is YESAB, the body that is created under TH's Final Agreements has looked at the socio-economic risk of projects, has consistently over the years looked at mining in wetlands and has determined on the basis of traditional knowledge and scientific information and has recommended repeatedly that mining in undisturbed wetlands should not occur. They have made this recommendation repeatedly, and they found that placer mining in wetlands can lead to irreversible loss.
- YG has repeatedly varied that recommendation in its Decision Documents to say that "perhaps mining can occur, but first, the miner has to develop a wetlands reclamation plan that's approved by the Chief of Placer and Mining Land Use."
- So, YESAB has concluded on a scientifically supportable basis that mining should not occur in undisturbed wetlands, and YG then varying that to say that "perhaps they can".
- To the TH this is an untenable situation that should be addressed through this Public Interest Hearing because miners then get their licences from this Board.
- This Board, the body with licensing authority under TH's final agreement and with authority under the *Waters Act* to regulate the use of waters in this Territory to make sure the objectives of Chapter 14 in the YFNFA are met, does not have oversight or power of approval over wetland reclamation plans which includes water and that is untenable.
- The current situation is that projects in wetlands are being approved on an application-by-application basis, despite not knowing the cumulative impact to wetlands complexes that have already occurred and how much further damage can that wetland complex take.
- This Public Interest Hearing does provide an opportunity for a pause to step off this treadmill of approving projects on a licence application basis and to step back and say, 'What's the situation'.
- In TH's view, it's entirely appropriate for the Board to do that. The Board has licensing authority under Chapter 14 of their Final Agreement to maintain the water of the Yukon in a natural condition, while providing for its sustainable use.
- Placer mining in certain wetlands classifications changes the natural condition, and is not sustainable.
- TH recommended that unless and until there's a conclusive determination and understanding of whether a wetland complex can sustain further damage and that further activities in that wetland

will not harm the functionality of that complex, the Board simply reject licence applications for mining activities in wetlands.

- The Board has the power to reject licences, and that was referred to in Ms. Pollock’s presentation. TH negotiated in section 14.8.7 of its Final Agreement, that says: “In deciding whether to issue a licence, a decision of the Board shall be not conflict with a Decision Document.” TH asks the Board to exercise that in the absence of information that we have on wetlands complexes.
- The Board can also make a recommendation to the Commissioner in Executive Council under Section 18 of the *Waters Act* that they exercise their power under Section 32 to direct the Board not to issue further licences for a specified amount of time to enable comprehensive evaluation and planning to be carried out for wetlands complexes.
- TH also understands that YG has recently refused that recommendation, but TH raises it again because this time, things have changed.

Board Questions

BOARD MEMBER: MR. WARNSBY.

Thank you, a very comprehensive presentation, so only one little clarification that I’d like: Does TH have any particular guidance as to what the term ‘irreparable harm’ would mean? I know it’s a bit of a vague term, but just a little bit of guidance that the Board can consider, thank you.

RESPONSE: DR. FOOTE

If one considers wetlands valuable, then the loss of wetlands becomes an irreparable harm, financially, culturally, ecologically. I think that’s the way I would transfer that from a social good to an ecological good.

BOARD MEMBER: CHAIR, MR. MCDONALD

Okay, well, thank you very much for that. With that, we will deliberate and consider other questions that we may have coming out of this hearing, and we can either put them to Tr’ondëk representatives during the hearing, or we potentially can do this for answering questions after the hearing.

Closing Remarks

Mr. Micah Clark, legal counsel to TH provided closing remarks. On behalf of TH, he expressed gratitude to the Board for holding this Public Interest Hearing and to other Yukon First Nations and other organizations that have presented over these last few days. He also recognized the work that went on behind the scenes by Mr. Light and Ms. Pollock and by others to prepare for this hearing. TH recognized the thoughtfulness of the questions posed by the Board, and the attention that each Board member gave to the testimonies in the Hearing.

Mr. Clark summarized that TH’s view is that placer mining in wetlands must be addressed by concrete actions. Mr. Clark provided a quote from YESAB that summarizes proponents must not mine in undisturbed wetlands:

“The Indian River Valley wetlands are of high ecological and socio-cultural importance. They’re vulnerable to change. They cannot be effectively replaced, given the complexity of restoring wetlands. It is likely that mining in the Indian River wetland complex has already surpassed the threshold of social acceptability. The ecological value of wetlands is also unlikely to be effectively restored to its original function, once disturbed. Changes to the ecosystem are not well understood and have not yet been effectively barometered.”

He summarized that YESAB has been making this type of recommendation since the February 2016 evaluation report for the Northern Exposures’ project. YG has varied this recommendation continually since that time. This means that mining projects in the Indian River wetlands and throughout Yukon keep getting licenced which has created the need for concrete action.

He indicated there was general agreement among the presenters that there is simply not enough known about wetlands. There was general agreement that some wetlands need to be protected, and thresholds are needed for disturbance on a watershed basis and not just a claim-by-claim or block-by-block basis.

He summarized there was agreement that planning is needed to identify areas to be protected and areas that should be open to industry through a wetland policy, regional or sub-regional land use planning and watershed planning or a cumulative effects study. YG's presentation referred to work in this regard but conceded it would be a long time coming.

Mr. Clark described there is a tipping point for wetlands where destruction or substantial conversion will cause an ecosystem collapse and cultural alienation. He described TH's position that the Board should adopt the Precautionary Approach for all wetlands in Yukon. He summarized that until there are effective measures in place to protect and reclaim wetlands and the Board has the information it needs to conclusively determine that further activities will not irreversibly harm the functionality of a wetland complex, the Board must reject licence applications for activities in wetlands.

He further summarized that rejecting licences is not a fettering of discretion, nor is it contrary to administrative law principles. The Board can and must still hear and decide licensing applications, but it should reject those applications unless there is a conclusive determination that further activities will not irreversibly harm the functionality of a wetland complex.

In terms of wetland reclamation objectives, he also described there was substantial agreement from what was heard at the Virtual Hearing that full peatland restoration is not possible. He also referred to Mr. Darren Taylor, TH citizen who spoke passionately about the impossibility of hunting among gravel piles and in ponds and the fact that dramatic changes to the landscape made him not even want to return to Indian River anymore.

He also summarized that the Board heard direct evidence that mining conversion of wetland impacts the use by TH citizens; and interferes with the exercise of their treaty rights to hunt and fish and enjoy other spiritual and cultural activities throughout their traditional territory. The position in support of conversion to open water seems to be an increase in biodiversity is based on limited studies of birds that don't take into account the full range of species that use wetlands. Artificially increasing biodiversity may introduce species that are not natural in the environment and that themselves have impacts that we don't understand. The goal of reclamation should not be solely on biodiversity but on reclaiming the broad set of functions that natural wetlands in Yukon perform to support traditional uses, cultural values and benefits to all Yukoners.

He summarized that TH' is of the view that the decision of wetlands reclamation objectives is a policy decision that should be made by YG in collaboration with Yukon First Nations. TH does not support or accept the Northern Exposures Guidelines.

Mr. Clark also indicated that the Board must also ensure that applicants can complete effective reclamation. The Board not only has the power but in TH's view it has the duty under Section 12(4)(d) of the *Waters Act* to "not issue a licence unless the applicant satisfies the Board that the financial responsibility of the applicant is adequate for such mitigative measures that shall be required and the satisfactory maintenance and restoration of the site in the event of a future closing or abandonment".

He also summarized that the Board has the authority under Sections 13 and 15 of the *Waters Act* to require security for the costs of reclamation. As to reclamation objectives, Section 13(1) provides the Board with extremely broad discretion to include any licence conditions it considers appropriate including Chapter 14 of our and other final agreements, licence conditions can't conflict with the term of a Decision Document.

In terms of the question about what information should be required to support a water licence application, Mr. Clark summarized that TH's view is that this question is driven by first determining what wetlands

should be protected and what are open for development. After this, wetlands reclamation objectives can be determined and what information should be provided by the applicants.

He summarized that it is also the view of TH that YG should be providing information on a watershed level such as mapping, baseline conditions and cumulative impacts. This should be done in collaboration First Nations. This information is necessary to determine whether a licence should be issued; and if so, to inform reclamation requirements. Without that information licences should not be issued.

Mr. Clark also commented on the Board's jurisdiction and summarized that TH completely rejects the views expressed on the limits of the Board's jurisdiction for wetlands. The Board has delegated authority in respect of Class 4 Placer land use approvals which requires the Board to consider adverse effects broadly, including environmental and socio-economic effects and effects on treaty rights and Chapter 14 of the Final Agreements and the *Waters Act*. The objectives of Chapter 14 and the protection of TH's rights under the final agreement are sacred, they are constitutionally protected and a solemn obligation.

Additional Intervention Information

TH submitted a written response on December 14, 2020 that covered a number of areas on placer mining in wetlands including Yukon First Nations Final Agreements, Land Use Planning, Development Assessment, the Yukon Water Board, Sustainable Development, Mining and Wetland Guidelines, YG Policies Water Quality Standards and Monitoring, Placer Projects and Wetlands, First Nations Rights, Wetland Functions and Recommendations.

This document states that wetlands provide important ecological functions such as maintaining water quality and quantity, fish and wildlife habitat and carbon storage. Wetlands also support cultural activities such as harvesting and hunting and the maintenance of TH culture across generations. TH expressed the view that the current management of wetlands does not have a comprehensive understanding of their functions and that no further mining should occur in wetlands.

TH recognized in this document that the Board has a challenging position in meeting their obligations under the *Waters Act* and Chapter 14 of Yukon First Nations Final Agreements. The Board also has an obligation under the *Waters Act* to maintain the water of the Yukon in a natural condition while providing for its sustainable use. TH summarized that the status quo does not allow the Board to meet these obligations. The approval of a wetland reclamation plan by the Chief of Placer Mining Land Use also puts the Board in a difficult position of meeting their legislative obligations.

In the absence of sufficient information regarding wetlands and effective measures to protect and reclaim them, including approved land use plans, a Yukon wetland policy and reclamation standards, the Board cannot continue to approve placer projects in and around wetlands while fulfilling their obligations in the *Waters Act*, the *Placer Mining Act* and Yukon First Nations Final Agreements. TH is particularly concerned with the wetlands and placer mining issue as approximately 85 % of Yukon placer mining occurs in their Traditional Territory. However, TH also supports Sustainable Development and urged the Board to work with them and the YG to ensure that the right measures are put in place as soon as possible so that sustainable placer mining can continue.

This report provides for a summary of Yukon First Nations Agreements in terms of Chapter 11 Land Use Planning, Chapter 12 Development Assessment Process and Chapter 14 Yukon Water Board (p. 3-6). In this section of the report, TH offered to provide the Board with a confidential copy of TH's Conservation Priorities. The report also summarized the *Placer Mining Act* and the *Waters Act* (p. 6-9). The Jurisdiction of the Board is also summarized (p. 9-11) and in this section TH rejects the view that the Board has limited jurisdiction on wetlands and that the scope of the Virtual Hearing is inappropriate. In TH's view the Board has the authority to reject applications after the issuance of a Decision Document under YESAA.

The reports summarize that Yukon First Nation Final Agreements define Sustainable Development as “beneficial socio-economic change that does not undermine the ecological and social systems upon which communities and societies are dependent”. Mining that is undertaken in a way that undermines the ecological and social systems upon which communities and societies depend is not sustainable and should not be permitted regardless of the economic benefits to the proponent.

On January 20, 2017, TH and YG entered into a Memorandum of Understanding to collaboratively develop policy and guidelines for the protection and reclamation of wetlands affected by placer mining in the Indian River watershed. TH and YG could not fully agree and as a result each issued their own guidelines, namely the TH Placer-Specific Wetland Reclamation Guidelines (October 2017) and the Wetland Reclamation Guide for the Ruby Creek and Indian River East Block Placer Mine (July 2017).

TH expressed serious concerns with the KPMA Guidelines (November 2015). The goals of the TH and YG Guidelines are to preserve wetland functions. In TH’s view, the goal of the KPMA Guidelines is to reclaim to uplands marshes and shallow water wetlands rather than the original type of wetland. In this context, TH points out that the Waters Act requires that applicants must satisfy the Board that the financial responsibility of the applicant is adequate for satisfactory maintenance and restoration of the site. The KPMA Guidelines are also based on the argument that reclamation to marshes and shallow ponds is beneficial as it increases biodiversity. TH’s position is that reclamation should restore the original broad set of functions of natural wetlands to support ecology, traditional uses, cultural values and benefits to Yukoners.

TH commented that the Draft Wetland Information Guidelines published by the Board in March 2020, provide some helpful information and requirements, but they do not specify protection and reclamation activities, standards, thresholds or outcomes such as proportion of wetlands that must be left undisturbed and that reclamation measures should restore original function is required. TH recommends that the Board work with YESAB to develop guidelines for information that is required for any project in and around wetlands.

TH is concerned that water quality standards applied to Yukon placer mining projects have not been sufficient to prevent significant cumulative effects on a watershed basis.

The TH report summarized that a comprehensive map of wetlands throughout Yukon is an essential element of the regulatory framework. Without wetland mapping the Board cannot determine whether a placer project will affect wetlands. There are wide discrepancies between the Parties on wetland coverage across Yukon and as a result vastly differing opinions on the effects from placer mining.

According to the TH report, YESAB concluded that the potential effects to Indian River wetlands from further mining are significant when considered from a cumulative effects perspective because “the loss and conversion of peatland fens is irreversible for all practical purposes and relevant timelines”. YESAB also concluded that “in the face of accelerating development and landscape level change any remaining wetland habitat is considered exceptionally vulnerable to disturbance and compels the need for robust protection” and that “the cumulative loss and conversion of wetlands within the Indian River wetland complex would be irreversible” with a further project.

TH estimated that approximately 22 % of the original wetlands in the Indian River watershed were disturbed up to 2016 which may approach or surpass a tipping point. TH commented that the Chamber of Mines in their presentation used a threshold of 10 % disturbance of wetlands but the scientific basis for this figure is not clear. Also using a threshold that is linked to collapse of an ecosystem is not an appropriate basis for establishing a disturbance threshold.

TH asked that the Board stop further mining in the Indian River watershed until effective protection and reclamation measures are in place and to ensure that this level of disturbance to wetlands does not take place in other areas of the Yukon.

The report also summarized Yukon First Nations rights and interests under the TH Final Agreement which are protected in Section 35 of the Constitution Act, 1982. In contrast, the “rights” of placer miners to benefit from Yukon’s public resources under the Placer Mining Act do not exist at large but are as provided for and as limited by the Act itself and are not rights constitutionally protected. TH suggested that the Board bear this in mind when considering any balancing between the constitutional rights of Yukon First Nations and utilization of public resources sought by miners.

The TH report also summarized that there are four Settlement Land parcels in the Indian River valley. In this context, placer mining in wetlands can affect the quantity, quality and rate of flow of water which is on or flowing through those wetlands and ultimately on or through downstream TH Settlement Land. These effects can be direct, where mining results in increased sediment and diversion of water, or indirect, where mining affects the functions of wetlands such as water filtration and storage. Mining can impact use and peaceful enjoyment of Settlement Land directly, for example through noise, dust and can also impact wildlife and hunting opportunities.

TH also suggested that an appropriate framework co-developed with Yukon First Nations, will create long-term economic savings for placer miners by reducing uncertainty and the administrative burden of assessment and permitting. Their hope is that, with adequate mechanisms and political will, the development of effective protection and reclamation measures should not take significant time. Once these measures are in place, sustainable placer mining can continue, reducing the long-term economic impacts on individual miners.

The following is a summary of TH Recommendations contained in this document:

1. Provision of accurate information is required on the following:
 - Location of Yukon wetlands including their pre-mining extent, classification, and hydrology.
 - Integration of wetland resources into Cultural and Ecological Scenario Models.
 - Benefits and costs of placer mining including royalties, government expenditures, ecological, social and cultural costs, costs of reclamation, cumulative effects and others.
 - Effectiveness of reclamation methods and their functions.
2. Effective measures to protect and reclaim wetlands including:
 - Conservation and protection areas, wetlands policy with disturbance thresholds by watershed, reclamation standards, security funding for reclamation, water quality standards and monitoring, tracking of cumulative disturbances.

Until the above information and measures are in place, TH recommended that the Board cannot issue licences for mining in or around wetlands.

Further to this TH also recommended that licensing of placer mining undertakings in wetlands could occur if there are:

1. “Comprehensive understandings” of the physical, ecological and cultural values of wetlands. Identification and classification of wetlands including their functions must be undertaken by wetland experts.
2. Compliance with protection and reclamation measures.
3. Temporal and geographic spacing of permitted projects.
4. Constraints on certain activities such as ancillary activities or facilities.
5. Reclamation plans that achieve standards that has been thoroughly reviewed through the Board’s licensing process.
6. Appropriate security provisions.
7. Appropriate buffers around conserved wetlands.

8. Requirements for comprehensive reporting and monitoring of conditions.

This document also summarized that TH understands the importance of balancing various interests, including the economy and the environment. TH supports Sustainable Development in their Traditional Territory, however, under the current management regime, TH does not support further mining that may substantively affect wetlands.

The following are the Appendices that were included in the TH submission:

- Appendix A: Tr'ondëk Hwëch'in and Yukon Government Memorandum of Understanding January 20th, 2017
- Appendix B: Comparison of YG, KPMA, and TH Wetland Reclamation Guidelines- This is a comparison of reclamation goals, approach to wetland conversion, wetland protection, progressive reclamation, reclamation hydrology including ponds, wetland definitions, hydrology, geology and soils, ecological and social/cultural wetland values, economic costs for reclamation, reclamation planning, reclamation landforms, reclamation re-vegetation, and monitoring and closure.
- Appendix C: Technical Review of Yukon Water Board Wetland Plan Guidelines (Version 1)
- Appendix D: Letters from Tr'ondëk Hwëch'in to Yukon Government
- Appendix E: Placer Mining in Indian River Area Information Sheet
- Appendix F: Letter from Tr'ondëk Hwëch'in Chief to Yukon Government Premier regarding Interim Policy
- Appendix G: Tr'ondëk Hwëch'in Response to Yukon Water Board Request for Additional Evidence on Applications PM18-009 and PM18-011 February 4, 2019
- Appendix H: Tr'ondëk Hwëch'in Citizens Oral Testimony During Public Interest Hearing on Mining in Wetlands in the Yukon October 27, 2020 [Provided as Audio File]
- Appendix I: Indian River Preliminary Research Report Helene Dobrowolsky, August 2017- this is a summary of pre-contact, early contact use and the recent history of the Indian River area.
- Appendix J: Excerpt from Victoria Gold Reclamation and Closure Cost Estimate October 2020

Summary Responses to Information Requests

DIRECT QUESTIONS:

1. What information should the Board require to demonstrate that a particular wetland can sustain the proposed development, or if licensing would adversely effect it?

Response: To determine whether a particular wetland can sustain a proposed development, the Board must first understand the size and proportion of wetland that will be affected by the development both at a watershed and local scale.

It must also know the wetland classification (bog, fen etc.). The absence of comprehensive wetland mapping across the Yukon makes it impractical for proponents to provide this information, highlighting the importance of compiling this information before authorizing any further mining in wetlands.

To decide whether a particular wetland can sustain a proposed development, the Board must understand the cumulative effects of developments that have occurred or will occur on wetlands within the watershed. This will require an understanding of the historical extent of wetlands in the watershed, the extent of existing disturbance, and collaboratively developed watershed disturbance thresholds.

Once wetland mapping is available at a watershed scale and protection goals and thresholds have been defined, understanding whether a particular wetland can sustain development will require detailed characterization of wetlands at a local scale, specific to the wetlands that will be affected by the project.

To support the work needed to complete these characterizations, the Board will need to provide additional guidance to assist proponents with wetland monitoring and characterization at a local scale. This will require proponents to hire qualified professionals to support the characterization of wetlands and assess impacts.

Baseline characterization should include data on all relevant biophysical and socio-cultural characteristics, including at least the following:

- Traditional use and cultural values.
- Soil characteristics.
- Existing disturbance in or adjacent to the wetlands.
- Carbon storage and fluxes.
- Hydrology – including connectivity to surrounding wetlands.
- Water quality.
- Terrain and topography.
- Vegetation; Wildlife and habitat, including species inventory for all seasons.
- Fish and habitat, including data demonstrating the benthic invertebrate community to set an indicator of health and ecosystem contribution to the surrounding area.

This information will be used to assess whether the application complies with the wetland protection and reclamation measures in place, and whether there are project-specific circumstances that indicate a wetland cannot sustain the proposed development (e.g., will be irreparably harmed). In the case the application does not comply and/or the wetland cannot sustain the development, the Board should not grant a licence.

2. How is irreparable harm defined and how should the Board consider that term when making licensing decisions concerning placer mining in wetlands?

Response: Irreparable harm is damage or disturbance of a wetland including its functions and values a wetland supports such as ecological, hydrological, biogeochemical, climatic, social and cultural functions that cannot be repaired or replaced within a meaningful timeframe. In many Indigenous cultures, planning and stewardship is considered for the welfare of up to 7 generations ahead, or approximately 175 years into the future. Many crucial wetland functions cannot be repaired within 175 years, including peat accumulation, hydrologic connections, landforms, topsoil formation on benches and headlands, permafrost, and carbon sequestration rates.

3. What measures should the Board use when licensing placer mining undertakings in *wetlands* in the absence of policy direction from the Minister or a land use plan?

Response: The Board should only authorize mining in wetlands or within a scientifically relevant buffer zone once effective measures are in place to protect and reclaim wetlands. Effective measures to protect and reclaim wetland would include:

- Implemented conservation and protection areas, based on appropriate collaborative mechanisms that could include approved land use plans or other mechanisms agreed upon by YG and Yukon First Nations.
- A wetland policy agreed upon by YG and Yukon First Nations, including disturbance thresholds by watershed.
- Wetland reclamation standards agreed upon by YG and Yukon First Nations.
- Mechanisms to guarantee that funding will be available for reclamation and that reclamation will be successfully completed.

Once these measures are in place, the Board could licence placer mining undertakings in and near wetlands if there:

- Is an understanding of the physical, ecological, social and cultural functions of wetlands and associated values that will be affected by the project.
- Compliance with protection and reclamation measures, including disturbance thresholds.
- Temporal and geographic spacing of permitted projects.
- Constraints on the types of activities that are allowed in wetlands and ensuring wetlands are only disturbed if absolutely necessary.
- A reclamation plan that achieves the agreed reclamation standards, which has been reviewed through the Board's licensing process.
- Adequate security for reclamation and restoration.
- Appropriate buffers around wetlands, to avoid adverse impacts.
- Requirements for comprehensive reporting and monitoring.

GENERAL QUESTIONS:

1. What is the appropriate temporal and spatial scope for baseline wetland information required for an application for placer mining in wetlands?

Response: The Board will require baseline wetland information over a period of time of sufficient length to understand the temporal variability of conditions for each function and value of a wetland. Longer periods of baseline data collection are preferable, especially for functions and values that are subject to annual variability.

Spatially, baseline data should be at different levels of detail for local and regional areas. The Board should begin with baseline information on the pre-mining extent and classification of wetlands in the watershed to determine cumulative effects and apply any watershed disturbance thresholds.

At the regional or watershed scale, the Board will require information in sufficient detail to understand the context for a proposed project. Larger spatial scope may be required for impacts on specific types of wetlands with direct effects that extend beyond buffers, alteration of the hydrology such as upstream fens, projects that generate noise and human presence that disrupts wildlife, disruption of fish and wildlife and deposition of dust on nutrient poor bogs.

2. Given the status of wetland mapping in Yukon:
 - a. What wetland mapping information should be required as part of an application for a water licence?

Response: Studies are needed to identify the historical (pre-mining) extent of wetlands and the cumulative impact of mining that has already occurred throughout Yukon. An application should include a detailed description (including mapping) of existing and historic conditions in the project area supported by monitoring and research results and the following information:

- Traditional use and cultural values.
- Wetlands and their classifications.
- Soil characteristics.
- Existing disturbance in or adjacent to any wetlands.
- Hydrology – including connectivity to surrounding wetlands.
- Water quality. Terrain and topography.
- Vegetation. Wildlife and habitat.
- Fish and habitat.
- Project area and reference area(s).
- Reclamation plan and cost estimates.

- b. Who should provide that information and when?

Response: This information should be part of the YESAA application for any placer project that includes mining in wetlands or within buffer areas. Historical baseline and landscape-level information, such as a wetland inventory, will need to be developed through a joint project overseen by Yukon First Nations and YG. The proponent should be required to work with affected First Nations to identify traditional use and cultural values in the project area.

Other project information should be provided by the proponent using a Qualified Professional. Alternatively, YG could increase the capacity and expand the mandate of its Department of Environment to work in partnership with the Department of Energy, Mines and Resources, to conduct application-based site investigations and baseline data collection to support characterization of wetlands. Such an approach could provide an opportunity to include Yukon First Nations as co-managers in a joint monitoring and investigations protocol or program.

3. What post-reclamation monitoring is required to verify that wetland reclamation techniques are effective? Who is responsible for verification?

Response: The following are minimum ground conditions for wetland reclamation:

- Created wetlands are functional (vegetated, filtering, supporting wildlife).
- Created wetlands provide the same wetland functions as the pre-development wetland.
- Yukon First Nation citizens are able to resume traditional activities such as hunting and berry picking and harvesting of medicinal plants.
- Wetland upland ratios are within 10% of pre-mining ratios.
- No unnatural rock dumps or excessively deep pits left on site.
- River and groundwater flows returned to unimpeded conditions.
- Permafrost is protected and habitats configured to return or support depth of freezing.
- Wetland insects (base of animal food chain) return in abundance and diversity.
- Organic substrates are replaced where they formerly occurred with depths as close as possible to pre-mining conditions and sufficient to support re-establishment of self-sustaining vegetation.
- Moisture conditions in reclaimed wetlands that will support wetland restoration.
- Watershed landscape level cumulative effects remain un-impacted or are restored.

The success of reclamation measures should be verified by Qualified Professionals to evaluate and report on the success of reclamation measures. The Professional's report should be verified by regulatory agencies on the success of reclamation activities. Security bonds must be retained until regulators have determined that reclamation goals, objectives and standards have been achieved.

4. What requirements in a licence or mining land use authorization would improve effectiveness of wetland reclamation and that reclamation objectives are achieved post-mining?

Response: Once the Board decides that a project may go ahead, any licence that authorizes mining that disturbs wetlands must require the following:

- Implementation of the approved reclamation plan.
- Security bonding for the full costs of reclamation.
- Updates to the reclamation plan and cost estimate, at least every two years, including review and approval by the Board, to ensure the plan remains consistent with the site and mining status.
- Progressive reclamation within a predefined period of inactivity (e.g., 1-2 years).
- Full reclamation within an established period from the end of the gold recovery.
- Comprehensive monitoring of conditions in affected wetlands and buffer areas before, during, and after mining and reclamation activities, including programs to demonstrate the post reclamation short-term and long-term achievement of reclamation standards.

- Minimum of annual reporting on reclamation progress and performance, including identification of deviance from monitoring objectives and exceedances of environmental thresholds.
5. Because techniques of placer mining reclamation of wetlands transforms bog and fen wetland types to marsh and shallow water bodies:

- a. How does this transformation on a claim-by-claim basis affect the watershed-scale wetland ecosystem?

Response: The transformation of bogs and fens to marsh and shallow water bodies is not acceptable to TH. Wetlands are hydrologically connected to rivers, lakes, groundwater and other wetlands. Changes to a wetland can therefore affect the ecosystem in an entire watershed. The effects of transformation therefore cannot be considered on a claim-by-claim basis. Ultimately, the effects on all environmental variables are incremental and cumulative.

- b. Are shallow water bodies and marsh wetland types over-represented because of reclamation and what is the cumulative effect?

Response: Shallow water bodies and marshes are relatively easy to construct, while peatlands are currently possible to construct. As greater areas of peatland are converted to shallow water bodies and marsh wetlands, there will be associated increasing changes in the flow regime, with higher peaks and reduced baseflows. This conversion will have effects well beyond the boundaries of the wetland or water body through effects not just on water quality, quantity, and rate of flow, but also fish and wildlife, carbon storage as well as use of the area by Yukon First Nations and local communities.

- c. How does the transformation affect wildlife?

Response: The transformation of one wetland type to another will result in overall loss of species that use habitats provided by the original wetland types. The goal of reclamation should not be to artificially increase numbers of species but rather to retain the biodiversity that is naturally present and restore the broad set of functions that natural wetlands in the Yukon perform to support traditional uses, cultural values, and benefits to Yukoners.

6. Can the utilization, development and conservation of wetlands be achieved using a management approach similar to the DFO watershed authorization model?

Response: A management approach structured like the DFO watershed authorization model could be used as part of a regime to manage mining activities that could affect wetlands but would require that effective measures to protect and reclaim wetlands are first in place.

The DFO watershed authorization model in practice has been ineffective. A management approach structured with the same types of elements could work for wetlands in the Yukon, if designed collaboratively with Yukon First Nations. Such an approach would require comprehensive mapping of wetlands (including wetland classifications and protected areas), a system to provide proponents with up-to-date information on relevant watershed thresholds (as the cumulative impact of mining in a watershed increases, the thresholds applicable to a new project may become more rigorous), and agreed guidance on reclamation standards and practices, and authority to enact penalties for non-compliance.

The DFO Workbook functions on the basis of relatively simple metrics (sediment discharge standards), whereas impacts on wetland functionality are more nuanced and can be harder to measure and predict. Due to these and other complex factors, it may not be possible for a proponent to complete a similar workbook for wetlands without the assistance of a Qualified Professional. An approach based on the DFO model would also require monitoring and enforcement, to ensure that proponents accurately complete the workbook and operate the project in accordance with the workbook.

7. How does the cost of reclamation for a placer operation in non-wetland areas compare to the cost of reclamation of wetlands?

a. What is the economic impact of reducing mining in wetlands?

Response: Although placer mining provides economic benefit to the Yukon, TH submits that these benefits are much smaller than has historically been assumed. This includes the cost of administering and supporting the placer mining industry, including reclamation, and non-monetary ecological, social, and cultural costs.

Combined with the fact that a significant portion of placer miners do not live in the Yukon, the economic benefits are not clear. Further, it is important to note that the majority of the economic benefits accrue to miners, whereas the economic, ecological, social and cultural costs are largely borne by the territorial government, First Nations, and local communities.

Preventing mining in wetlands until effective protection and reclamation measures are implemented may have short-term economic impacts on individual miners. However, the economic impact on the Yukon as a whole will likely be offset through reduced administrative and infrastructure costs with alternative economic opportunities such as tourism, and the benefits of long-term protection for the ecological, social, and cultural functions of wetlands.

8. If security is required for a placer undertaking, what information is required to calculate it for reclamation of wetlands?

Response: Financial resources must be guaranteed for reclamation from all placer activities in wetlands including for a third party to carry out all reclamation and post-reclamation activities.

9. Can the use of adaptive management plans mitigate adverse effects to wetlands from placer mining?

Response: Adaptive management, if implemented proactively and in accordance with the precautionary principle, may be an effective tool for addressing the effects of placer mining in wetlands. Adaptive management in its broadest sense is a structured process of learning aimed at addressing uncertainties and responding to improve outcomes.

Adaptive management is only a reliable tool if it is carefully structured and implemented as part of initial project planning. Adaptive management must not be seen as an alternative to robust project design or effective mitigation for placer mining projects. Adaptive management applied in a precautionary way must include detailed description for project performance, identification of expected performance and outcomes, identification of indicators that will be used to monitor performance status, thresholds and triggers for indicators, methods for monitoring results, responses to exceedances of triggers and descriptions of responses.

10. Indigenous Knowledge (IK) was raised as a source of information to help understand landscape connectivity. Please provide information on how the Board could incorporate IK on an application-by-application basis and when IK should be provided.

Response: When the Water Board receives input from First Nations, they should consider this input as Indigenous Traditional Knowledge. More fundamentally, the process of examining a water licence application on a project-by-project basis is inherently flawed, for it does not consider the relationship of that proposal to the whole, interconnected landscape (which includes cultural connections with people and animals who depend on healthy land for survival) or the broader context of our societal obligations and commitments. The Board cannot currently effectively consider Indigenous Traditional Knowledge (ITK) because it is bound by laws of general application and broader policy systems that have not yet effectively incorporated ITK in collaboration with Yukon First Nations. Until the broader framework that incorporates the First Nations' broader world view, the Board's decisions will be limited and resulting in licences that only consider a narrow, project-by-project view.

The Board's best option for full consideration of ITK is to stop issuing water licences until the broader context (the development of land use plans, collaborative policies, legislation etc.) has been completed.

Then, and only then, can the Board make application-by-application decisions within a framework that fully incorporates ITK. The Board must listen to Yukon First Nations and withhold licences until this framework can be developed with ITK as a substantial contributor. Once the framework is in place, the Board and Yukon First Nations could implement a process to incorporate ITK specifically into the Board's decisions. The Board could request that each affected First Nation provide a ITK statement that would formally guide the Board when reviewing an individual application.

It is likely that ITK would include concepts around respecting the inter-dependence of all species and their habitats and the importance of respecting landscape connectivity by recognizing the value of the whole and caring for all components of a larger system. ITK is likely to emphasize the need to evaluate projects as a whole (cumulative effects), as opposed to one by one, and the need for long-term planning for an area that incorporates the concept of thresholds and limits. ITK will tell us that all values need to be considered on an equal footing and that decision makers should not assume that all development should go ahead; development must be sustainable and sometimes ecosystem and/or cultural values need to trump the western economic paradigm.

6.5 KLONDIKE PLACER MINERS' ASSOCIATION

Representation Summary

PLACER MINING IN WETLANDS: FINDING A BALANCE

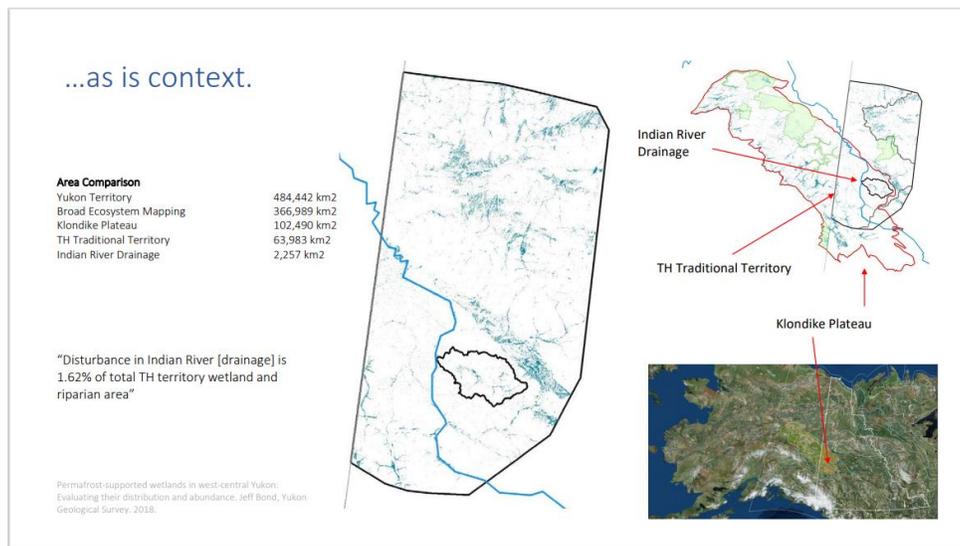
Ms. Brooke Rudolf introduced herself as the Executive Director of the KPMA. Ms. Brooke introduced KPMA's Team including, Ms. Jana McLean, Iris Legal, Bruce Jenkins, Dr. Nicole Wright and Justine Knox, and the KPMA executive board: She also introduced, Mr. Will Fellers, President of KPMA and a third generation Yukon placer miner; Mr. Neil Loveless, Vice President of the KPMA, a fourth generation Yukon placer miner and Ms. Lisa Favron, Secretary Treasurer of the KPMA and a fourth generation Yukon placer miner.

Ms. Rudolf summarized that the KPMA was founded in 1974 and has mission is to be a voice for all Yukon's placer miners, providing leadership on, and advocating for responsible and sustainable placer mining, with technological and ethical advances to the benefit of all operators, the environment, and enriching the communities. KPMA's vision is responsible and progressive placer mining for the future generations of miners and working with our community partners. The placer mining community values family, community, environmental stewardship, historical and scientific contributions, ingenuity and hard work.

The following is a summary from Ms. Rudolph's presentation and the Virtual Hearing transcript.

- The 2020 placer mining season was an extensive field season with about 460 workers with over 90 % of the mines being family-run and managed.
- An average placer mining operation is a second-generation miner.
- Fifty percent of placer mines are co-owned or owned by women, which again speaks to the 90 percent of placer mines are family-run.
- Forty percent of miners live in the Yukon year-round, and upwards of 80 live and pay taxes in the Yukon for at least seven months of the year.
- The Yukon Geological Survey estimates that at this time there is just over 68,000 crude ounces of placer gold reported for the 2020 mining season which translates to at least 118 million dollars directly invested into Yukon-based businesses and probably higher than that with the COVID season this year.
- Approximately 88% of average operating expenses were spent in Yukon by placer miners.

- The Yukon has a population of over 42,000 residents. The KPMA estimates that about 525 are employed in the placer mining sector.
- There is a total of 22,000 in the Yukon labour force with just over 12,000 in the public sector and consultants through public funding. If government funding is removed, the placer mining industry is responsible for 6.5% of Yukon's Gross Domestic Product (GDP) using Statistics Canada information.
- The Board Draft Guidelines were provided to the KPMA on October 11th, 2019, after they were implemented in the application process.
 - There was no field study.
 - There was no communication with the KPMA when they were implemented, outside of saying, 'This is now in place and being used on proponents.'
 - The guidelines are largely duplicative of the YESAA process, DFO worksheets and water licensing application documents that placer operators already go through.
 - The KPMA would like to know what the Board is going to do with the information that's requested in the guidelines and how that relates to the activities that are occurring on the ground.
 - The completion of objectives in the Draft Guidelines are out of scope from the current water licensing requirements.
 - This includes mapping requirements that the KPMA believes is the work for the YG and not the Water Board.
 - Wetland mapping and summarizing traditional knowledge is more appropriately covered in the YESAA process. It's not responsible or respectful that placer miners are required to gather information for the Draft Wetland Guidelines or providing it in a water licence application.
- The Slide below shows that placer disturbance in the Indian River drainage is 1.62 % of the total wetland and riparian area in TH Traditional Territory.



- Recent ecosystem mapping work completed by YG; Department of Environment shows that approximately 58.6 % of Yukon contains wetlands.
- In comparison, placer claims in Yukon constitute approximately a 0.56 % footprint in the Yukon.

Broad Ecosystem Mapping

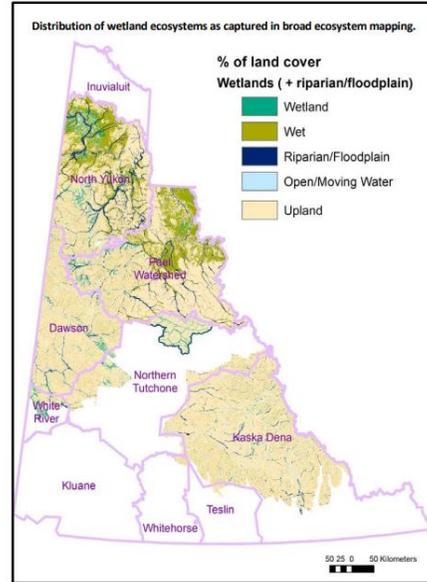
Distribution of broadly mapped wetlands, wet soils, and riparian/floodplains: encompassing large planning regions:

- Dawson Regional Land Use Planning Area (~2012)
- Ross River Planning Area (~2012)
- Peel Regional Land Use Planning Area (~2007)
- North Yukon Regional Land Use Planning Area (~2005)

"Areas identified as "wet" are possibly wetlands or have soil and vegetation wetland characteristics [...] captured in broad ecosystem mapping. [...] A recently completed wetland map for the Beaver River area does not yet have a supporting report."

484,442 km² – Yukon
 366,989 km² – Broad Ecosystem Mapping (75% of Yukon)
58.6% Wetland Cover in Broad Ecosystem mapping (all types of wet soils)
0.56% Placer Claim Cover (NOT disturbed only claims)

Data provided by Department of Environment. October 26, 2020. Prepared by Nadele Flynn, ELC Coordinator.



- In summary, 58.6 % of the Yukon is a wetland, and 0.56 % are placer claims. It is important to note that a placer claim is not necessarily a disturbance. In other words, only a fraction of that 0.56 % is a producing mine.
- In the Dawson Region 4.03 % is the footprint of claims (not mine disturbance) and approximately 10 % of this is mapped as wetland.

Footprint of Claims*

*Claims and disturbance are VERY different numbers – only a fraction of a claim block has historically or may be disturbed in the future.

*Claims can include areas: held for exploration, held as part of multi-decade business plans, used to access other more economic locations, or have historically been mined but are being re-evaluated for their feasibility using different mining techniques.

Dawson Region Placer Claims

4.03%

footprint is placer and prospecting, as per Mineral Resources Branch.



■ Placer Claims ■ Wetlands ■ Other

Dawson Region Known Wetlands

10%

footprint is wetland cover, as per chapter 5 of the RAR Executive Summary.

Yukon Territory Placer Claims

0.56%

footprint is placer and placer prospecting, as per Mineral Resources Branch.



■ Placer Claims ■ Wetlands ■ Other

Yukon Territory Broad Mapped Wetlands

58.6%

Estimated wetland cover, as per Dpt Environment.

- Placer mining has a minimal impact on the general health of wetland complexes in Yukon.
- Placer is chemically stable and there are no concerns in a reclaimed placer mine site.
- Ms. Rudolph commented that her children swim in tailings ponds on hot days in the summer. Good reclamation creates shallow open water ponds, which are excellent and valuable ungulate and migratory bird habitats.
- Placer mines have a small physical footprint relative to the total coverage of wetlands in the Yukon.
- There are initiatives such as the development of a Wetlands Policy and land use planning work means that the Board Wetland Guidelines are unnecessary at this time and are redundant.

- The Board Wetland Guidelines should not be implemented without consultation with affected placer miners; and if the Board requires additional applicant information, it should be developed collaboratively to avoid unnecessary duplication.
- A placer miner goes through a rigorous application process, with renewals of the water licences at least every 10 years.
- There are generally 165 operating or sluicing mines in the season; and KPMA's statistics show that approximately 114 of them are family operations. This means that on average, there's about 1.4 operations per family.
- Most placer miners have been in compliance with the regulatory processes in the past, as well as the current application and renewal processes, and they have been in compliance with those for at least 30 years.
- The process for a Water Licence includes a Class 1 Notification for prospecting, a YESAA application, completion of DFO worksheets for the fish habitat management system, responding to regulators, responding to interventions, a Yukon Water Board application and response to Board staff.
- The KPMA would encourage that rather than making it harder for mines to operate, the process and guidance should make it easier for them to operate responsibly and sustainably.
- Placer miners are also subject to other changes in legislation, land use planning, an upcoming wetland policy and changes that may follow the Yukon Mineral Development Strategy recommendations.
- Making a water licence application harder does not improve compliance.
- Making an application more difficult does not encourage reclamation practices or enforce the regulations that exist.
- Imposing the Wetland Guidelines as part of the licensing process will add to permitting delays, capacity challenges for industry and guarantee paperwork that will overwhelm the Board.
- The KPMA presented the example of Alaskan placer mining where they have found that reclaimed placer sites have a value in wetland mapping. This allows reclaimed Best Management Practices to be implemented and enforced. It also allows for placer activities to occur with a high degree of confidence in both miners and in the regulatory system.

JURISDICTION OF WATER BOARD PROTECTION OF WATER (NOT WETLANDS AS A WHOLE)

Ms. Jana McLean introduced herself as a lawyer with Iris Legal that specializes in the areas of environmental, natural resources and indigenous law. Ms. MacLean summarized that her presentation today has a few basic legal principles. The first is that the Water Board is a creature of statute. It was established by the *Waters Act*, and it gains its authority pursuant to that legislation. It cannot exceed its powers, which were given to it by an elected legislature. To do so is to act unlawfully. The *Waters Act* makes it clear that if the Water Board acts outside of its jurisdiction, such an action can be challenged in court. The Board is also subject to administrative law principles with a duty of fairness to licence seekers when considering a licence application. The Board must also process applications without undue delay. It must do so without bias or the apprehension of bias, and it must provide reasons in support of licensing decisions. These are some of the basic rules that govern the Board's conduct when determining water licences.

The Board has framed this Virtual Hearing as a Public Interest Hearing on Placer Mining in Wetlands. It has asked the Parties to give feedback on how it should make decisions when issuing water licences to placer miners in wetlands.

Ms. McLean summarized that during this Hearing, there were comments about perceived impacts on wetlands. The Virtual Hearing also produced comments on the variety of wetland functions, their associated benefits and how they can be restored from mining reclamation; and finally, comments about the geographic extent to which we should preserve wetlands in the Yukon.

Ms. McLean commented that while these are pressing and important issues, these are not matters that the Board can decide when adjudicating a water licence. The KPMA respectfully disagrees with the Chair's earlier comments during his opening remarks when he said regulating activities within wetlands falls squarely into the jurisdiction of the Board.

In the view of KPMA, the questions that the Board has asked the Parties to address in this proceeding, as well as the Draft Wetland Guidelines, are beyond the jurisdiction of the Board under the *Waters Act*.

The following summary points are taken from Ms. McLean's presentation.

- Jurisdiction of the board is to “provide for the conservation, development, and utilization of waters” (s. 10).
- The Board issues Water Licences (s. 12).
- The Board places conditions on Water Licences that are consistent with YESAA Decision Documents, (s. 13), renews, amends or cancels water licences (s. 16).
- Water is: “any inland water, whether in a liquid or frozen state, on or below the surface of the land.”
- Jurisdiction of the Board on Wetlands: “land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation and various kinds of biological activity which are adapted to a wet environment...”. (Federal Policy on Wetland Conservation, Government of Canada 1991).
- The definition of “Wetlands” is in direct contrast to the definition of “Water” as shown in the above points.
- Under Waters Act, the Executive Council decides:
 - “criteria to be applied by the Board in determining whether a proposed use of waters or deposit of waste for which a licence is required under this Act requires a type A or a type B licence” (s. 31(1)(c))
 - “procedure to be followed in application to the Board” (s. 31(1)(d))
 - “form of applications to the Board” (s. 31(1)(e))
 - “information to be submitted to the Board in connection with any application” (s. 31(1)(e))
 - “form in which that information is to be submitted” (s. 31(1)(e))
 - the water quality standards for waters (s. 31(1)(h))
- Executive Council has decided:
 - Form that needs to be completed to apply for a licence (Regulation, s. 5 and Schedule 4)
 - Information that must be provided if the undertaking consists of certain activities, including a storage reservoir, water crossings & deposit of waste (Regulation, s. 5(2)).
 - In all cases, must provide plans for abandonment or any temporary closing of proposed undertaking (Regulation, s. 5(2)(h)).
- The Board may require information on qualitative and quantitative effects on water
- In addition to application, the Board may require “information and studies concerning the use of waters or deposit of waste...as will enable the Board to evaluate any qualitative and quantitative effects on waters.” (Waters Act s. 14(2))
- Consistent with UFA Chapter 14, which requires an assessment of whether a proposed licenced use would “substantially alter” the “quality, quantity or rate of flow” (UFA ss. 14.8.1 and 14.9.1).
- The Draft Guidelines for Wetlands exceed the Board's jurisdiction in the following ways:

- The Board cannot broadly assess “wetland impacts” (Guidelines – Overview, sections 1.3 and 4).
- The Board is not empowered to assess project affects on “site conditions and wetlands” (Guidelines, section 2).
- Assessing the project within its “local and regional surroundings” is not relevant to a water licence application (Guidelines, section 2.2) however hydrologically connected water would be.
- The expected wetlands gains and losses is too broad and involves a land use decision (Guidelines, s. 5.4).
- Project closure and post closure activities are too broad (Guidelines, s. 5)
 - The Board does not have jurisdiction over wetland recovery unless there are impacts to water qualitatively and quantitatively.
 - Water Act Regulation requires plans for abandonment / temporary closure and the YESAA Decision Document can require reclamation plans which is part of Mining Land Use Approval.
- YESAA processes are better equipped to assess impact on wetlands as a whole through the following:
 11. Project purpose.
 12. Significance of any environmental or socio-economic effects.
 13. Significance of any adverse cumulative environmental or socio-economic effects.
 14. Alternatives to the project.
 15. Alternatives operationalize to avoid or minimize any significant adverse effects.
 16. Mitigation / compensation measures to account for any significant adverse effects.
 17. Need to protect the rights of Yukon Indian persons under final agreements, the special relationship between Yukon Indian persons and the wilderness environment of Yukon, and the cultures, traditions, health and lifestyles of Yukon Indian persons and other residents.
 18. Interests of First Nations, residents of Yukon and Canada.

***THIRD PARTY REVIEW OF YUKON WATER BOARD WETLAND INFORMATION
GUIDELINES – SUMMARY OF CONCLUSIONS & RECOMMENDATIONS***

Mr. Bruce Jenkins introduced himself and his Team of Justine Knox, Dr. Nicole Wright and Ms. Justine Knox. Ecofish Research Limited and ASLA Consulting Services. On behalf of the KPMA they conducted an independent third-party review of the Board’s *Draft Wetlands Information Guidelines V2, March 2020*. This review resulted in eight conclusions and nineteen recommendations which are summarized below.

This summary provides the Conclusions and Recommendations directly from the Ecosfish presentation and the Virtual Hearing Transcript.

Conclusion 1: The Board Guidelines pre-empt finalization of the Yukon Government Wetlands Policy.

- The Wetlands Policy is intended to be a framework to guide management of activities in wetlands across the Yukon.
- Implementation of the Board Wetland Guidelines prior to having a clear Wetland Policy creates risks through jurisdictional confusion, inconsistencies regarding ecological values being protected and uncertainty about whether water licence applications & activities will be fairly managed by regulators.

- *Recommendation 1.1:* Define Board licence application requirements consistent with a clear and established Wetland Policy developed collaboratively with government, industry, and Indigenous groups.
- *Recommendation 1.2:* Ensure Board licence application requirements are aligned with clear policy direction provided by the Yukon Government to reduce duplication and avoid unnecessary delays and costs to placer applicants.

Conclusion 2: Board Wetland Guidelines information requirements are more appropriately considered earlier in the regulatory process.

- Placer mining is subject to an environmental and socio-economic assessment under YESAA.
- EMR is the decision maker at the early stages of placer mine development (i.e., during claim staking) and is a Decision Body during the YESAA process.
- Requiring placer miners to engage with the Wetland Guidelines after YESAA review & issuance of Decision Document, at the later water licencing stage, risks imposing inconsistent requirements on mining operations.
- *Recommendation 2.1:* Ensure consistency & transparency between EMR and the Board when adjudicating a water licence.
 - The Board is charged with considering the impacts to water quantity & quality resulting from water use or waste deposit in water (including wetlands) in their adjudication of licence applications; however, an assessment of impacts on wetlands is more explicitly & holistically dealt with under YESAA (with a Decision Document being issued by EMR).
 - Through YESAA, there are procedural requirements that limit duplication & provide detailed instructions for assessment. This transparency in procedures ultimately contributes to fairness to all Parties in the assessment.
 - Land use decisions are appropriately the jurisdiction of EMR under the Placer Mining Act, again guided by the YESAA Decision Document.
- *Recommendation 2.2:* Employ a risk-based approach at the earliest stage of the decision-making process (YESAA or earlier), informed by YG Wetland Policy, to help achieve consistent, predictable, & transparent decision-making.
 - A risk-based approach to wetland information requirements & regulatory decision-making could provide transparent criteria for identifying the scale of adverse effects, balancing the value of wetlands & sustainable placer mining operations, and clear guidelines on the requirements for managing the risk to both wetlands & placer miners (guided by the Yukon's Wetland Policy).
 - A risk-based approach also promotes adherence to the mitigation hierarchy of avoid, minimize, replace/reclaim by placer miners and guides decision-making.

Conclusion 3: The Wetland Guidelines duplicate existing regulatory processes.

- Much of the information requested in the Wetland Guidelines is already required as part of the existing water licence application or other regulatory processes to which placer mines are subject (e.g., detailed descriptions of site context and activities, sediment erosion control planning and other mitigation measures, reclamation plan).
- There are more than 80 duplications with the Wetland Guidelines and regulatory processes.
- Implementation of the Wetland Guidelines fails to recognize opportunities to streamline Board licensing decisions on the use of water or the deposit of waste in water, in wetlands, with other regulatory processes.
- *Recommendation 3.1:* Avoid duplication of effort for water licence applicants by integrating Wetland Guideline requirements with existing regulatory processes.

- The Department of Fisheries and Oceans (DFO) Fish Habitat Design, Operation and Reclamation Workbook (and associated Worksheets) for placer mining in the Yukon is an example of a successful process that could be mirrored for land & water use decisions concerning wetlands.
- The DFO process is employed early in the regulatory process, is integrated across decision-making bodies (i.e., YG, EMR, YESAB, and the YWB); is accompanied by clear guidelines outlining data collection requirements and timing.
- This process is a strong example of a successful collaborative process among regulatory agencies, First Nation governments, conservation groups and industry.

Conclusion 4: The Wetland Guidelines are unclear how information will be used by the Board in adjudicating licence applications.

- *Recommendation 4.1:* Provide decision-making criteria & thresholds for the requested information.
- *Recommendation 4.2:* Provide clear explicit linkages between the information required and how the information materially affects the assessment of water use or waste deposit in water during Board adjudication.

Conclusion 5: Scientific data requirements are vague and unclear.

- Notwithstanding the limits of the Board's jurisdiction (see Conclusion 2):
 - Some data requirements in the Guidelines are prescriptive, while others are vague.
 - There is no standard methodology or guidance provided for data collection.
 - It is not clear whether information is required or recommended to support a Board licensing decision.
- *Recommendation 5.1:* State clearly whether the data is required or recommended to support a YWB licensing decision (e.g., in a checklist)
 - scale data requirements according to risk (see risk-based approach in Recommendation 2.2), and,
 - provide the rationalization for the data requirements to support the Board's assessment of proposed water use and deposit of waste in water, developed consistent with the Yukon's Wetland Policy.
- *Recommendation 5.2:* Standardize any necessary data collection to ensure requirements are accessible, easily understood, and achievable by the applicant; and to achieve more timely and cost-effective wetlands assessments by the appropriate regulatory body.
- *Recommendation 5.3:* Confirm that applicant-collected (rather than data collected by a Qualified Professional) data will be accepted to avoid unnecessary costs to the applicant.
- *Recommendation 5.4:* Provide guidance on how applicants can reasonably & cost-effectively address data gaps.
- *Recommendation 5.5:* Obtain a Yukon Wetland Inventory (prepared by YG), guided by a territorial-wide Wetland Policy.

Conclusion 6: The Guidelines are not clear on whether information is required for all applicants.

- The Guidelines appear to be blanket requirement to all water licence applicants, without consideration of: 'historical disturbance 'water use requirements 'duration of operation 'an operation's wetland footprint.
- *Recommendation 6.1:* Provide a mechanism for identifying claim blocks where the Wetland Guidelines do not apply (e.g., see risk-based approach in Recommendation 2.2) and identify criteria that could be used to determine the extent the Guidelines apply to a particular operation.

- *Recommendation 6.2:* Confirm that licences granted prior to the Guidelines (historically licenced operations) will be grandfathered and not re-opened unless the proponent seeks to change licencing provisions.

Conclusion 7: The Wetland Guidelines impose a financial burden on placer miners.

- The lack of transparency in process, vague scientific data requirements, lack of direction and rationale for data collection, and duplication with other regulatory processes inappropriately puts the onus on the proponent to collect information that:
 - may be beyond their expertise or financial capability.
 - may not be needed to reasonably adjudicate a particular water licence application.
 - may compromise the timeliness of the application process.
- To put the financial burden into perspective, the cost associated with Wetland Guidelines implementation by an expert collecting & reporting on the data requirements for a range of placer operation wetland footprints is estimated to be from \$68,000 to \$163,000, not including direct costs for the applicant/placer miner’s time and efforts.
- *Recommendation 7.1:* Avoid unnecessary financial burden on proponents by limiting information requirements to only those explicitly linked to the Board’s assessment of proposed water use and deposit of waste in water, (i.e., information within the jurisdiction of the Board)
- *Recommendation 7.2:* Avoid unnecessary financial burden on proponents by:
 - employing transparent decision-making (e.g., risk-based approach) early in the regulatory process so placer miners can carefully consider the economics of whether to pursue a licence application (see Recommendation 2.2).
 - adopt an approach that avoids duplication (see Recommendation 3.1).
 - provide decision-making criteria and thresholds to proponents (see Recommendation 4.1).
 - Obtain a Yukon wetland inventory (prepared by YG), guided by a territorial-wide Wetland Policy (see Recommendation 5.5).
- *Recommendation 7.3:* Provide compensation to the applicant when water licence applications are denied for applicants who have owned & worked a long-standing claim granted pursuant to the Placer Mining Act.
 - To be fair & balanced - YG must consider mitigating the financial burden on placer miners, if they are delayed or denied a water licence as a consequence of major changes to Board licencing requirements.
 - Yukon Wetland Policy development could be a starting point for considering impacts to placer miners.

Conclusion 8: The Wetland Guidelines lack specific guidance on the use of reclamation approaches described.

- *Recommendation 8.1:* Recognize the primary role played by Energy, Mines & Resources, YG as the land use regulator in approving reclamation of placer mining in the Yukon and ensure consistency in regulatory approaches.
- *Recommendation 8.2:* Develop best practices and regulations for working in & around wetlands in the Yukon, guided by the Yukon’s Wetland Policy, in collaboration with YG, the Board, industry, and First Nation governments.
- Adopt the KPMA Best Practices that are published in a comprehensive report of recommendations, guidelines, and techniques for reclaiming placer mined wetlands in the Yukon.
- Continue to develop best practices and regulations that include:
 - expectations for reclamation, project closure, and post-closure activities.

- allowance for adaptive management.
- scientific knowledge and industry experience.
- a minimum standard for conserving and maintaining wetland functions.

These conclusions and recommendations are intended as positive contribution toward a new process that achieves:

- Timeliness, transparency, and predictability improves and streamlines permitting processes (and their predictability) by creating authorization templates in advance, consistent with pre-determined regulatory requirements.
- Effectiveness: science-based risk management approach to properly address risk to wetlands and to placer miners
- Cost efficiency: keeps the financial burden on proponent's low by using an approach that reduces unnecessary duplication and effort.
- Implementation of these recommendations will contribute to a strong process that balances the ecological value/conservation of wetlands with a sustainable placer mining industry.

MR. WILL FELLERS, PRESIDENT, KPMA

Mr. Fellers introduced himself as the President of the KPMA and a third-generation placer miner who was born and raised in Dawson City and has spent his entire life there.

Mr. Fellers summarized there is uncertainty in industry that has been created by delays in licensing and constantly changing licence conditions that is making it difficult for operators to make decisions about financial investments in their operations. Many placer miners are extremely worried about the current licence as it may be their last licence, and therefore, making it extremely risky for them to try and put any more investments into better technology or newer equipment.

He also summarized that the moose population densities in the Dawson area are some of the highest in Yukon even with one of the highest harvest rates. Passively reclaimed placer mines also have a greater diversity of waterfowl, songbirds and threatened birds. The positive side of placer mining does not seem to be recognized.

Mr. Fellers believes that the Board Guidelines are asking too much of the placer industry and is outside of their mandate of regulating water quantity, quality and flow. Placer mining only occurs in a small percentage of wetlands across Yukon. The disturbance of the Indian River Valley is less than 2 % of the total wetland and riparian area of the TH Traditional Territory. He also summarized that “like for like” reclamation is not attainable in a timely manner and is not economically feasible for industry. However, the use of best management practices and proper reclamation techniques will create wetlands that add to the biodiversity of the region by leaving shallow water wetlands, marshes, swamps and hills.

The KPMA produced a set of guidelines for reclamation that provided achievable methods and met the requirements for functioning wetlands. The KPMA would like to work with government on the KPMA existing reclamation practices and finalize guidelines for wetland reclamation that meet ecological requirements and are achievable and feasible for industry.

Mr. Fellers described a “closed system” of mining which involves recycling water through ponds for sluicing purposes and pumping make up water to ponds as required. This closed system of water recycling does not impact stream water quality or quantity. This approach to mining also facilitates reclamation of ponds into a series of shallow water wetlands and marshes.

Mr. Fellers described placer mining as the “family farms of the north” with all expenses covered from their own pockets. As an example, for most operations fuel and payroll accounts for approximately 75 % of expenses during a mining season and most operations will operate on less than a 10 % profit margin.

Implementation of Board reclamation guidelines would cost between \$68,000 to \$163,000 per application which can exceed more than gold production for some operators.

Ms. Brooke Rudolph, Executive Director, KPMA

Ms. Rudolph responded to the Board questions which are summarized using the KPMA presentation slides shown below.

Hearing Questions

QUESTION 1. WHAT INFORMATION SHOULD BE REQUIRED TO SUPPORT A WATER LICENCE APPLICATION FOR PLACER MINING IN WETLANDS?

Response:

- Less duplication. The Yukon Water Board has considerable information already provided from proponents as part of their application process.
- The Yukon Water Board's mandate of information requests relating to water quality, quantity and flow needs to be maintained.
- Allow the regulatory structure to work through the YESAA review process, as well as adaptive management and inspections on the ground.

QUESTION 2. WHAT SHOULD THE WETLAND CONSERVATION, DEVELOPMENT AND UTILIZATION OBJECTIVES BE ON A WATERSHED BASIS AND HOW CAN THEY BE BALANCED ON AN APPLICATION BASIS?

Response:

- This is primarily a land use decision with only part of this question relates to the jurisdiction of the YWB. YESAA and land use planning have more jurisdiction considering this question.
- Any approach needs to consider the small footprint of placer interests, compared to the Yukon wetland complexes across the Territory, as well as in specific drainages; and the minimal impact on water quality, quantity and flow with good reclamation practises employed and importantly, enforced.
- Risk-based approaches, like the DFO stream classification model, have been successfully implemented in the Yukon with significant input from industry in the past.

QUESTION 3. WHAT WETLAND RECLAMATION OBJECTIVES SHOULD BE CONSIDERED DURING THE WATER LICENSING PROCESS?

Response:

- Only part of this question relates to the Yukon Water Board.
- The KPMA would like to see their best management practices accepted as the best first step as well as educating miners and regulators on how they are implemented and enforced.
- Ms. Rudolph summarized that the KPMA believes in a fair and balanced process for making decisions that involves engagement, collaboration, meaningful consultation, transparency, science-based approaches and working at it until you get it right.

Board Questions

BOARD MEMBER: MR. WARNSBY

Thank you very much, Mr. Chair. Thanks for the presentation. It was very informative and a good reminder of the nature of placer mining in the Yukon. I mean, although I'm not a placer miner, I'm second-generation kind of for the Water Board involved in the placer mining industry.

Yes, the centre question I wanted to ask here is a lot of the materials – when we talk about Water Board jurisdiction and the nature of the Water Board, focused on the Waters Act jurisdictions; but as you are all no doubt aware, the Water Board also has delegated Class 4 jurisdiction pursuant to the Placer Mining Act. And I just wondered on behalf of the KPMA, any of the people involvement, what the nature of that jurisdiction and the impact of that particular jurisdiction may be on the nature and ability of the Water Board to have jurisdiction with respect to wetlands.

And then, a second portion of that, just on the nature of wetlands, we heard a lot about those yesterday in the way the wetlands help control the nature and quality of water and perhaps changing the nature of wetlands, how that may affect the water quality, and thus, enter into this Board's jurisdiction pursuant to the Waters Act. Thank you.

RESPONSE: MS. MCLEAN

I think I've been asked to at least try to tackle your first question, and I expect that we'll ask Nicole Wright to speak to the second question that you've presented. As the Water Board knows, under the YESAA process, there's ultimately a Decision Document issued, and the Yukon Government explained yesterday that there is increasingly a requirement that there be a plan for reclamation, and criteria for reclamation is being imbedded in that Decision Document; and then, from there, of course, the approvals flow under both the Waters Act and the Placer Mining Act.

And our submissions today focused on water licensing because of the three questions presented by the Water Board. So, we focused on your water licensing powers. So, that's what we were addressing in our presentation.

Certainly to the extent the Water Board has delegated authority under the Placer Mining Act, there would be some consideration of reclamation in that context, so, again, consistent decision-making flowing from the decision document of EMR.

And I'll just look to my group here to see if there's anything else they want to add, but otherwise, I'll turn it over to Nicole to comment on your second question.

Response: Dr. Wright

So, I can't quite remember exactly what the question was, but I believe it was the Water Board's jurisdiction to collect information on water and how wetlands are intricately connected to water, because that's part of what they are. They're wetlands.

So, I think what is needed to know is to understand the sources of water, water storage, the flow, what is the hydrological connectivity from upstream to downstream and within the footprint; and part of that is understanding.

So, there's nothing wrong with saying: Where is the water and where are the wetlands, because they know where the water is, and that will give you a sense of how hydrologically connected that is; and with the hopeful goal that you're restoring that hydrological function to the landscape once the mining activities are completed. Does that answer your question?

BOARD MEMBER: MR. WARNSBY

To an extent; I think perhaps I'll just clarify what that portion of the question was, and I should know better than to ask compounded questions; but I guess my question is: Given that we know that wetlands are integral to the treatment and quality of water - intact wetlands – how does the Water Board's jurisdiction for water quality impact certain protections of intact wetlands within a potential placer mining footprint? Thanks.

RESPONSE: MS. MCLEAN

I could jump in, and then, I'll give you a second to add your comments, too, because I think inherently in licensing industrial activity to use water, you are permitting certain levels of impact. That's inherent to the concept of water use or a deposit of waste in water. In the immediate moment of use, there's a change; and in all jurisdictions that regulate water, the question really is: What's acceptable?

And so, when you talk about that there could be impacts, I think that's not a sufficient analysis. You have to look at: Well, what is the standard that we are being held to determine whether or not those impacts are acceptable or not with respect to water quality and quantity; and there's been a lot of information presented to you today about the degree of the impact, the ability to restore that I think has to factor into that decision, and Nicole I'd like you to speak to that from a scientific perspective.

RESPONSE: DR. WRIGHT

Yes, sorry I can't comment on jurisdiction, but from a science perspective, you really want to have some criteria and thresholds that the miners can work with. For example, I've looked at the application, and I see that there's a request for estimated flow, and there's an indirect question on water quality in terms of asking about a spill response plan and that type of thing, and this is where our recommendation for having some kind of DFO-type worksheet on water specifically is to ask those questions that are specific to water quality and water quantity with the rationale of why that's included and the methodology that's required, as well as the threshold or the criteria that you're evaluating, whether post-mining activities after reclamation, that water quality and that hydrological connectivity and that storage and the whole hydrological functioning still remains the same.

BOARD MEMBER: CHAIR, MR. MCDONALD

A quick follow-up question: I think essentially a fairly major portion of the intervention this morning has been to encourage the Water Board – to put it in colloquial terms – to 'stick to their knitting' under the Waters Act and that that would focus the analysis and accelerate the decision-making significantly.

I'm having trouble understanding, because I know that you're certainly aware of the fact that the Board has delegated authority under the Placer Act to act as the Chief of Placer Mining at time of licensing, and this has been the case since 2003; and as all of you who have licences know, that not only the water licence but the land use authority is signed by the Chair of the Water Board after deliberations by the Water Board.

So, in my experience on the Water Board over the last couple of years, there has been no deliberation that hasn't given sort of a comprehensive analysis of all the issues, both that which would relate to water in its narrowest sense under the Waters Act, but also, the duties under the Placer Mining Act; and as legal counsel pointed out yesterday.

We also have responsibilities under the UFA, and we take all these responsibilities seriously. Do you have a concern about the legitimacy of the delegation of authority under the Placer Mining Act to the Water Board to act as chief of placer mining at the time of licensing? Is that a problem?

RESPONSE: MS. MCLEAN

I don't think I'm in a position to comment on that today, but we can certainly address that issue in a written submission, but I'd need instructions from my client.

I want to make it very clear that the three questions that were presented by the Board in this proceeding were very clearly focused on water licence applications; and my understanding – and the KPMA's position – is that the Wetland Guidelines are being used to determine water licence applications.

And our submissions today about jurisdiction is that the information being sought and the breath of the considerations that the Water Board is attempting to draw into that water licensing process is inappropriate, and we were not asked to discuss the Board's powers under the Placer Mining Act or that delegation of powers in this proceeding. So, I don't have instructions on those points.

BOARD MEMBER: CHAIR, MR. MCDONALD

I look forward to your written response in that regard, then, because it's a fairly significant point to clarify as to our understanding of the KPMA's position.

The comment was made that there is a Wetland Policy underway. We heard all about it yesterday, as well; and that if it was a perfect policy, obviously, it would provide great guidance to everybody involved in terms of some of the parameters of decision-making and expectations from the public with respect to the use of natural resources.

So, almost everyone that I know of is looking forward to this policy. In the absence of the policy and given that the Board makes decisions every month and has been doing so over the last few years, what is the expectation of the KPMA with respect to the Board operating without the policy direction, but still required to adjudicate licences? We've heard some people's opinions on that subject that perhaps without the guidance and without the knowledge, there should be no licences issued. I doubt that would be your position, but I'd just like to hear your comments on that.

RESPONSE: MS. MCLEAN

I suspect there are a number of us that would like to respond to that, including our scientists with respect to information that informs a licensing decision while the policy is pending, and I think our hope is by highlighting jurisdiction, that helps inform the type of information that would inform your decision-making while this more complex policy document is pending.

I think the other point I want to make on the policy development is that the Yukon Government was very clear that it will be ensured very clear that it's the Yukon Government's responsibility to consider the interests of all residents of the Yukon, and that policy development process is seeking to balance out some very complex issues; and from my perspective, that's all the more reason why the Water Board needs to be respectful of that process and not over-reach when it's determining water licence applications under the Waters Act.

But with respect to what you can do, what we're suggesting is that you focus on impacts, clear impacts, to water quality, quantity and flow. That information is before you, and with respect to kind of long-term outlooks, you can consider whether or not the functions are being returned in a manner that would ensure ongoing water quality and quantity and flow; and from our perspective, I think those are the fundamental questions that you are weighing when you are considering a water licence.

RESPONSE: MS. RUDOLPH

What comes to mind for me is again reiterating that when you look at the placer footprint across the Yukon, it is quite small; and what you have available to you in terms of – and I'm not a lawyer – a regulatory framework is very complex, but it has addressed the needs of Yukoners in the past up until now, and the policy should be implemented soon, and you have a legislative framework that you're able to work within, and we're encouraging you to continue doing so.

RESPONSE: MS. MCLEAN

Dr. Wright, did you have anything else you wanted to add to that or any other members of the Ecofish team?

RESPONSE: DR. WRIGHT

No, I think you've summed it up pretty well. Yes, I do think the application can be strengthened in terms of understanding your water sources and your hydrological connectivity and flow and water quality.

For example, in the guidelines, there are requirements to collect water quality data, but in there, it just says water clarity is, and there's no specific – I know I've said this already before, but there's no rationalization of how that's going to be used.

So, if someone goes out and collects a few measurements of flow or water quality measurements in terms of 'Oh, yes, this water's clear; this isn't,' how is that informing the application, and how does that relate to the reclamation plan?

I think the key is what's there, how is it connected, what's the water quality currently, because obviously, you have to take into consideration upstream disturbances, natural disturbances, and put the application in context, because it really is a site-by-site consideration that needs to be taken into context of the whole.

So, I think the application could be strengthened in terms of better understanding the water sources and the water quality going forward until such a time that the wetland policy has been developed and we have better understanding of the risks to wetlands of placer miners and everyone's come to the table, and we've collaborated on the best way forward, using the best available science.

RESPONSE: MS. MCLEAN

If I could, I just wanted to speak to one other comment that the Chair made in questions, which is that he takes it we don't agree that they should just stop issuing licences, and I want to confirm that that certainly is the case; and I want to be confirm about the exercise of – again – the Board's obligations in the context of administrative law.

And we certainly took some comfort in the Board's October 7 letter, where it talked about the fact that interveners have requested the Board not to issue any more licences for placer projects in undisturbed Indian River wetlands.

And as an administrative tribunal, the Board has a duty to exercise the powers conferred upon it by the legislature. So, that's a letter written by you, Mr. Chair, and we certainly concur with that assessment.

BOARD MEMBER; CHAIR, MR. MCDONALD

Thank you. You will be reassured that I do remember the letter, and yes, we have been continuing to adjudicate licences, you're quite correct; and we have been looking to the requirements certainly under the Waters Act to try to strike that balance between the economy and the environment, and I can assure everyone that we take that task very seriously.

We talked a little bit about the Placer Mining Act, and as I mentioned before, we do take that responsibility for adjudication of every licence, we take our duties under that Act very seriously, too; as we do with respect to the UFA.

So, you mentioned that you would get back to us on the subject of the Placer Mining Act, because most of your commentary today was suggesting that under the Waters Act, that the analysis should be more limited; and as I've mentioned – and as I'm sure you know, - we have duties under the Placer Mining Act, which broaden the responsibilities quite considerably.

And then, I'd also be interested in hearing your considered comments about the UFA and our obligations under the UFA and under YESAA. We take all of the legislative framework under which we operate seriously and consider those requirements in all our decision-making. So, if you have more thoughts about that, we'd all appreciate hearing more.

One question about the statement that there is a fair amount of duplication in terms of our request for information, duplication with other agencies, and you said you would provide a list of those duplicated questions, we look forward to that list. So, I'd just like to emphasize that I picked up on that quickly, and if you have any comment you'd like to make right now about that, that's fine; but as you've indicated, there is a list available. We'd love to see it.

RESPONSE: MS. MCLEAN

If I could just provide one additional comment in response to the first part of the Chair's most recent comments and questions and ask a question if I may; because you've asked us now to provide submissions

on the breadth and jurisdiction of this Board under the Placer Mining Act, under the UFA and under YESAA, and that's a considerable broadening of this Public Interest Hearing late in the process.

So, I think we'll have to take that under advisement as to whether or not that's even procedurally fair or appropriate at this hearing. The focus clearly has been on water licensing, and I have no doubt that all parties have prepared with that perspective in mind, again, based on the specific questions posed by the Board specifically, which focus on water licensing.

I think in light of the fact that at least two questions now focused on the Board's powers under the Placer Mining Act, again, I would appreciate – if possible – the Board clarify whether or not their view is the draft guidelines apply under the Placer Mining Act, because I certainly have been under the understanding that they are presented as a water licensing criteria, and I think it would be helpful to have that clarified.

BOARD MEMBER: CHAIR, MR. MCDONALD

Certainly, if there's been any misapprehension that we have been seeking to clarify our roles and responsibilities, one of the reasons why we had the presentation from legal counsel yesterday was to explain exactly that; and we've heard from other interveners, who have made reference to our duties under the various pieces of legislation.

We've heard another intervener yesterday, for example, talk extensively about our duties under the UFA. We do have a complex array of legislative requirements that we have to meet in the water licensing process, and we meant to make reference to all of it.

It's all relevant, and if you have any comments you'd like to make at some point about the full responsibilities, then that would be appreciated. I can tell you that we do understand the limitations of what the Waters Act requires; and quite often in the deliberative process, we do make it clear to ourselves whether or not we're acting under the Waters Act or the Placer Mining Act or whether we're responding to our requirements under the UFA. We do take all of those duties seriously. So, that is a normal course of business.

Anyway, not to belabour the point, I think we all understand what we're talking about, and I look forward to hearing more from you on that subject.

BOARD MEMBER: MR. SIDNEY

Thank you, Mr. Chair. I don't know why, but I just feel I have to stand, sorry. Thank you for your presentation. I do have a question in regards to a comment made quite earlier on. Jana indicated that if the assessment impacts on wetlands is not the jurisdiction of the Water Board, then who is? Who do you feel should be doing that assessment, because on Brooke's last slide, it indicated Klondike Placer Miners' Association would like to see things made easier to do the applications; but if you're going to add another body that's going to do an assessment, then I don't see that being simpler.

And my other comment is in regard to Mr. Jenkins' presentation, where he indicated some of the first few of the recommendation or conclusions, I think if those were done – I feel – when we do our reviews of the applications, if some of those recommendations or conclusions were exercised by the applicants, it would make the Water Board's job much easier. Thank you.

RESPONSE: MS. MCLEAN

I can try to give an initial response at least to the first question about who should be assessing impacts on wetlands if not the Water Board. Certainly, a critical piece in the regulatory process would be YESAA for all environmental impacts, including the cumulative impacts are thoroughly canvassed; and then, from their, of course, there is the land-use decision-making and the water-use decision-making.

And on land use, which is what we say that questions around like whether a watershed ought to be developed are governed primarily by land use decisions under the Placer Mining Act; and whether or not water should be used or waste deposited in water, that's under the Waters Act.

Certainly, I think it's been repeated a number of times by a number of presenters, that there is the evolution of wetland policy that is really ongoing in this area in the Yukon. So, the modern process of decision-making needs to be informed by government policy and land use planning. So, it's multi-layered, and those would be the entities that the KPMA would point to as informing the decisions.

RESPONSE: MS. RUDOLPH

I'll just add, as well, to the second half of your question, and then, if anybody from the Ecofish team wanted to jump in, as well: We agree that if the recommendations made by Ecofish were implemented and approved by the Board, that it would make the application process easier to adjudicate and simplify things. That's what we're hoping to see is less duplication and deliverables and the simplification with clear accountability so it makes everybody's jobs more efficient.

BOARD MEMBER: MR. BOWEN

Thank you, Mr. Chair. One quick question: You've spoken – and it has been referenced over the last day, day-and-a-half – about the importance of restoring function to wetlands, and understandably, to restore function, one has to know what that original function is. So, one would need information on water quality, rate of flow, the hydrologic connectivity. So, one would need that baseline information to restore function back as much as possible. So, the submission of that information or collection of that information, whether it be at the regulatory stage or the assessment stage, I'd be interested to know whose responsibility that is to obtain that information. Thank you.

RESPONSE: MS. MCLEAN

So, I think again it might be good for the whole team to respond. So, I think we're still focused on watersheds and licensing and approvals in watersheds. So, we certainly say that the broad mapping that needs to be done is Yukon Government's responsibility. So, I want to be clear on that position.

With respect to specific site detail that would be required to support a decision on licensing or other permitting decisions, then that would be the responsibility of a project proponent; and I don't take the KPMA to be saying that project proponents don't have a responsibility here. I think the position is that there's a need to create a fair process that isn't duplicative, excessively costly and requires information that's not properly part of this issue.

RESPONSE: MS. RUDOLPH

Yes, thank you. Considering Ecofish's recommendation 2.2 about a risk-based approach, which is similar to the fish habitat management system that KPMA was key in developing, along with conservation groups and investor industry and various governments, that type of approach has worked in the past, and is something that we believe there is opportunity here to gather some of that baseline information but on a risk level. So, if it's not going to be a bog or a fen, then these guidelines don't apply, because you know that you're not working in a wetland until mapping can be done across the watershed, which we believe is the jurisdiction of government.

RESPONSE: MS. MCLEAN

Yes, and I think it's important to stress that risk matrix that Ecofish presented, in that one size does not fit all in terms of decision-making here and what's required of a proponent. It does need to be done on a case-by-case basis, and that's the nature of a licensing decision.

BOARD MEMBER: MR. BOWEN

Thank you both very much.

BOARD MEMBER: CHAIR, MR. MACDONALD

One quick question: In the development of the wetland policy, we've discussed that at some length, and I think we're all looking forward to results there. How would you see the overall wetland policy be used toward detailed regulatory decisions?

RESPONSE: MS. RUDOLPH

I think at this point because it's still a draft and it's been a draft for several years, because it has been developed collaboratively, it will have impact on everyone, but with input from all parties, industry, governments, et cetera. It will be used on a department-by- department basis as far as I understand, and it's still in a draft form. So, how it will be implemented will be on Yukon Government, and my understanding from Travis' presentation yesterday, is that they encourage it to be adopted by non-YG bodies, as well. Does that answer your question?

BOARD MEMBER: CHAIR, MR. MCDONALD

Yes, I interpret that as saying, "Let's see what the policy says and see how well it can be implemented in individual or regulatory decisions." I think the challenge for everybody, of course, is exactly that question; and broad policy guidelines, implemented on a claim-by-claim or project-by-project basis is the next challenge, and we're looking forward to seeing how that might be done.

RESPONSE: MS. MCLEAN

Yes.

BOARD MEMBER: CHAIR, MR. MCDONALD

So, any comments you have on that would be helpful information.

RESPONSE: MS. MCLEAN

I could just add two examples, and again, I think until we have the policy, it's impossible to know the pathway implementation. So, the first step is to get the policy in place. I tried to flag in my presentation that Executive Council has some decision-making power under the Waters Act. So, with the policy in hand, Executive Council could decide whether or not it wants to make amendments to the Waters Regulations. I think EMR also can make decisions about whether it wants to alter its approach to reclamation. They're all decisions that could flow possibly from a policy document.

BOARD MEMBER: CHAIR, MR. MCDONALD

Thank you, anyone else.

RESPONSE: MR. JENKINS

Maybe I could add a couple of comments to the question.

BOARD MEMBER: CHAIR, MR. MCDONALD

Go ahead.

RESPONSE: MR. JENKINS

On water policy and how that affects licensing. I think there are some broad-based principles – if you like – and the first one is balance. A Yukon water policy should not be defining wetlands as the only priority very significant and important resources that requires a policy for managing licences, but the gold resource is very important, as well, and the placer mining [inaudible]; but there needs to be balance between the two, and any policy must reflect that balance and the relative importance of both, not just one.

BOARD MEMBER: CHAIR, MR. MCDONALD

Sorry, can I interrupt you just quickly? You're cutting in and out. I'm not sure of the reason for that. You were very clear before, but for some reason, I couldn't quite catch your point, and I want to be able to do that. Maybe give it another shot.

RESPONSE: MR. JENKINS

Okay, well, I'll try again. So, with respect to a wetland policy, one of the first things we'd like to see is balance. It's not just about wetlands. It's about wetlands and wetland function and their importance in conservation function, but it's also about another resource, which is the gold resource. It has value, and the placer miners – this goes back to [inaudible] more, and it needs to be recognized as an important participant and resource use. There needs to be balance. So, that's point one.

Point two and I think you alluded to it, Mr. Chair, is from a licensee perspective, it should be focused on project-by-project, because every project is different in scale, nature and extent of effects on water, how it affects water quality, and with respect to wetlands, with respect to the size of the project and wetlands. But a water policy, I think, should also be defining policies not on a wetland-by-wetland basis but on a watershed-by-watershed basis, and YESAA takes appropriate care of wetland function and protection of [inaudible] during the YESAA process.

And in the earlier question, considerable amounts of information are compiled and utilized by specialists, wetland specialists, and biologists of Yukon Government, who insist that they [inaudible] their opinions on impacts.

What we're saying is the Water Board doesn't have those qualified [inaudible]. Therefore, impacts focus exclusively on the quantity of water and the quality of water; and to put it into context: Think of wetlands as a black box in your licensing process knowing what's in the black box defined in YESAA. Licensing by the Board should focus on [inaudible]: water quantity and water quality. So, it's the outlet from the water to the wetland. Out of the black box comes licensing, and if there are substantial changes to the Regs to water quantity and water quality, that may be required by placer miners. Thank you.

BOARD MEMBER: MR. SMOLER

Thank you. Mr. Chair, I was interested in the schematic presented by Mr. Fellers about the closed system, and then, following that, the pictures of the reclaimed site, and I was reflecting back on the interim policy that's being put in place that talks about various percentages to be protected or not mined in certain areas; and we were reminded yesterday by Mr. Powell from EMR that those would be measured by claim block-by-claim block. So, I'm wondering what are your comments with respect to protection post-reclamation in those mined areas, and then, the areas that are percentages that are not going to be mined. How will that be protected after reclamation?

RESPONSE: MS. RUDOLPH

Yes, I think I'll give you a short answer, and then, I might ask for some clarification. So, the interim approach that Yukon Government has come out with, which is the zero bogs, 40 percent fens, is something that we don't agree with; and I think most parties don't agree with from my understanding; and that's part of why we've looked at something to be proactive and go forward so everybody has a system that we can use, which is a risk-based approach. I'm not sure if I clearly understand your question about protection post-reclamation.

BOARD MEMBER: MR. SMOLER

There's been discussion about the quality, the rate of flow and the functionality of the wetlands. As I understand, the interim policy is there to attempt to mitigate many of those situations, going forward, and I'm wondering how will this look specifically for all Yukoners, going forward, post-mining post reclamation?

RESPONSE: MS. MCLEAN

I'm still not sure we're appreciating the question. So, certainly let me know if this is not responsive. But provided the authorization in the water licence contained appropriate conditions in their area of expertise: land use and water use and pursuant to Placer Mining Act, we would see reclamation being pursued. You're asking about enforcement, and it comes down to enforcement powers under the legislation, so, making sure that miners are doing what they are required to do under their permits; and provided that occurs,

then the post-reclamation world is really not a matter for regulation. That has been achieved at that stage once you're in post-reclamation. So, I think that might be why we're struggling a bit with your question.

BOARD MEMBER: MR. SMOLER

Just perhaps it's more close to the fact that the placer claims will still be valid, going forward, even though the property is maybe mined out or mined and reclaimed; and in that case, there's still a percentage of minable property on those active claims. Having said that, looking at the pictures of good reclamation practises, my question is: Going forward, how do we ensure that that reclamation still stands and isn't re-mined or continued to be in the active mining opportunities?

RESPONSE: MR. LOVELESS

I think if I understand your question correctly, you're referring to after we've finished mining in an area, would it be re-assessed as the bogs and fens are now, at 100 percent of an area. I think our intentions are that background has now been disturbed – or the area we mined would be disturbed, and we're working still on an approach that involves the risk matrix. So, ideally, that area would still be left for potential use in the future, but it would probably fall into the higher level of the risk matrix. Maybe if there was a chance to further operate in that area, you'd fall under a much higher section of our risk matrix.

Also, applying a value to the post-mined wetlands is what we're trying to achieve, as well. So, get into a situation where we can have the post-mined wetlands considered to be meeting a certain amount of the function referring to water quality, quantity and flow so that they are viewed as a functioning wetlands once we are completed mining in that area, as well. So, I think that broadly kind of covers that.

BOARD MEMBER: MR. SMOLER

Thanks, I appreciate that.

BOARD MEMBER: MS. HEFNER

Hi there, thank you for your presentation. I just had a question about the risk matrix. You mentioned the transparent criteria for the scale of effects. I'm wondering if the recommendation is said 'YESAA or earlier', then how that would trickle down into the regulatory process in your mind.

RESPONSE: MR. LOVELESS

I think the risk matrix approach, what we're trying to get is a situation that we already currently use with DFO; and as I'm the placer miner, I have an understanding of what needs to be done ahead of time by filling out sheets and a bunch of appendixes, which is what we already do for stream diversions currently with DFO. So, we'd like to find something that falls under those sort of circumstances, so, basically, allow the placer miner to know ahead of time what category he falls under and what he would be required to do; and that would be before he does up all those sheets, and all the understanding would be before you applied for your application so that the miner has a better understanding ahead of time.

RESPONSE: MR. FELLER

It also relies on the watershed being mapped or ground-truthed prior. Nicole, perhaps you want to add to this.

RESPONSE: DR. WRIGHT

You guys have done a great job. Yes, the risk matrix, it's just giving a balance between a sustainable placer mining industry, as well as protecting and conserving wetland functions. And so, what it will do is... It needs to be a collaborative process in terms of how it's implemented, but you can see through the DFO process that it's possible. What it does is it just says: Okay well, what are those flat lands that are less likely to be reclaimed, right? They're more sensitive. And what are those functions? So, those wetlands that will require a bit more work will have a greater amount of reclamation needed, but you can still restore a lot of the function with reclamation. So, it just provides the placer miner with this before they go into the

whole process of understanding the costs related to actually mining an area with the different wetlands on there.

And then, by having those worksheets with checklists and being able to go out there and define the wetlands by having a questionnaire exactly like the DFO's. It allows them to go out there and do that themselves, as well, which helps with the financial liability of the industry.

BOARD MEMBER: MS. HEFFNER

Okay, so, my understanding, then, is it would go, like, through the reclamation process, as well?

RESPONSE: DR. WRIGHT

That's correct.

Closing Remarks

Ms. McLean started the closing comments for the KPMA. She summarized that this Public Interest Hearing was convened pursuant to Chapter 19(1) of the *Waters Act*. The scope of the Virtual Hearing under that provision was to consider matters relating to the conservation, development and utilization of waters, in this case wetlands. She summarized that the KPMA participated on that basis on the understanding that the Board is seeking feedback on the regulation of the placer miners' use of water in wetlands and the power to licence such water use under the *Waters Act*.

During the hearing, the Board asked the KPMA for broader information, specifically an assessment of the Board's powers under First Nations Final Agreements and other Yukon legislation, like the *Placer Mining Act*. The KPMA is considering whether to provide that information in its written submissions, at least insofar as to the method to this public hearing.

She summarized that in this Public Interest Hearing and in recent water licensing decisions, the Board determined it had jurisdiction over wetlands by equating wetlands to water without any further explanation or analysis. In other words, the Board determined it had jurisdiction over wetlands under the *Waters Act*.

In the KPMA's view this is an error in the Board's assessment of its jurisdiction that is open to a court challenge. The concerns for wetlands as shown in this Virtual Hearing are far more than water. The Board's duty under the *Waters Act* is to focus on water quality and quantity. The KPMA asked that this jurisdictional error of equating wetlands to water not be repeated in future licensing proceedings.

In terms of the Final Agreements, the Board's duty to assess water quality and quantity under the *Waters Act* is consistent with the threshold question that must be considered under the final agreements when engaging in water licensing. This question is: Will the proposed use or deposit of waste result in a substantial alteration of water quality, quantity and rate of flow? If the answer is 'yes', then the Board must engage with the First Nation's constitutionally-protected rights prescribed under the final agreements. The KPMA did not suggest that the Water Board should ignore the final agreements, which it agrees are constitutional documents. While the final agreements create limits on the water licensing process, which concerns First Nations' rights, they do not create a blanket prohibition against water licensing of placer mining.

Ms. McLean also summarized that this Virtual Hearing was not convened to adjudicate a particular right under the *Waters Act*. This basic fact has broad significance, including with respect to what the Board may do with the broad array of information, arguments, and opinions at the conclusion of this Hearing process. The Board's decision to structure a non-adversarial process, with no right of cross-examination, means that any information provided to the Board in this public interest proceeding must now be treated with caution. She summarized that the Board ought to proceed cautiously, particularly in formulating any decision, recommendation or proposed guidelines that rely on information from this hearing.

The Board also has not indicated to the Parties what it expects to do at the conclusion of this public hearing. The KPMA is of the view that this Virtual Hearing does not stand as an appropriate substitute for direct consultation with stakeholders, including placer miners, on any significant changes that the Board or YG will propose or seek to impose on the water licence process.

Ms. McLean also stated that goal of holding a non-adversarial Public Interest Hearing will not impact anyone's existing or pending rights or interests. This was the reason why the KPMA did not raise an objection on the basis of reasonable apprehension of bias to the Chair's hot-mike comments on day one of the hearing. The KPMA expressed appreciation for the Chair's apology for these comments. The KPMA also supported the Board's ongoing commitment to fairly adjudicate applications before it and without predetermination of outcomes and certainly, without bias against anyone.

Ms. Rudolph also provided Closing Remarks by stating that during this Virtual Hearing there have been many negative opinions about placer mining. She summarized that over 90 percent of placer miners are families on average are second generation miners. She indicated that that fifty percent of placer mines are owned or co-owned by women. Forty percent of placer miners live in the Yukon year-round, and upwards of 80 percent live and pay taxes in the Yukon for at least seven months a year. The placer mining industry will inject an estimated 118 million dollars into the Yukon economy, starting with the communities. Excluding government, placer mining contributes 6.5 percent of the territorial GDP.

Ms. Rudolph summarized that the Indian River Valley is known as a gold deposit that has been historically mined with passive reclamation practices and with newer reclamation practises due to new regulatory requirements. The Indian River drainage has less than two percent of the disturbance of the total TH territory wetlands, which is estimated at ten percent through the recent resource assessment report. Due to the increased landscape diversity from placer work over the last 120 years, the Indian River drainage is known to have high moose densities, compared to surrounding areas, and significantly high populations of other animals, like lynx, rabbits and beavers.

She also summarized that the Department of Environment, YG provided an assessment of wetlands that shows Yukon has a 58.6 % wetland cover. Only 0.5 % of the entire Territory is covered with placer claims. That is not disturbance; it's placer claims. So, just a small fraction of that is actually disturbed land. In the Dawson regional planning area, at least 10 % of land is covered by wetlands, and only 4 % is covered by placer claims.

Ms. Rudolph summarized that land use planning is a process and that she is personally actively involved in those proceedings. The KPMA also agrees that the Board must be respectful of the constitutional rights enshrined in final agreements and that they appreciate and respect the testimonies and opinions of the First Nation citizens who have spoken over the past few days.

She put the economic and physical impacts of the placer industry in context by summarizing the placer industry employs around 500 people that contributes up to 6.5 percent of the territory's GDP and will put \$118 million into the economy, while covering a small fraction of 0.5 percent of the Territory's land. Placer mining is also chemically stable and water quality and quantity is maintained. Many placer miners obtain their drinking water from tailings ponds.

Ms. Rudolph summarized that the KPMA Best Management Practices for reclamation of wetlands are reasonable, implementable when used and mitigate the water quality, quantity and flow risks. The view that placer mined shallow water wetlands and ponds have higher environmental benefits has been supported by presentations at this Virtual Hearing such as by Mr. Scott Smith. In summary, the placer mining process creates shallow-water and marshy wetlands and contoured upland hills and slopes which enhances landscape diversity and increases biodiversity.

She also summarized that placer miners are required to complete the DFO worksheets as part of their licensing application and are inspected to provide reports to DFO to ensure compliance. A 2019 report

from Compliance, Monitoring and Inspections, has shown that the average effluent concentration from samples collected throughout the watersheds were, 'well below the current compliance standards and the standards that would be phased in, as well as well below the action levels for these standards. This clearly shows that placer miners are meeting their water quality objectives.

The KPMA is not opposed to providing wetland information to inform decision-making, but they are opposed to how and when this information is collected without prior consultation to determine these new requirements. The Board's Wetland Guidelines duplicates much of the information already gathered through the YESAB application process. Wetland data requirements and methods for collecting data should be made out in easy-to-use worksheets, similar to the DFO and fish habitat management worksheets, developed in collaboration with YG, indigenous government, the Federal Government, industry and conservation groups. The KPMA's risk-based approach could be used to inform placer miners on the type of class of permitting and reclamation in wetlands. She indicated the KPMA is looking forward to working collaboratively with all groups to further develop best management practices for reclamation, starting with the ones we know exist and can work when utilized.

The KPMA also summarized their responses to the Board questions. The first question about what information should be required to support a water licence application related to placer mining activities in wetlands. In consideration of the Waters Act, the Board should focus on information relevant to assessing the impact of the use of water or the deposit of waste in water, on water quality, quantity or flow. The Board should also provide guidance on how it will assess the information provided to it when deciding a licence application. In assessing water licence applications located in wetlands, the Board already has substantial information available as part of the current application processes. The KPMA recognized that if the Board concludes there is substantial alteration of water quality, quantity or flow, then First Nations' rights under the final agreements must also be considered. However, those rights do not create a blanket prohibition against licensing the use of water for placer mining in the Yukon.

The second question about wetland conservation, development and utilization objectives for a watershed, and how can they be balanced on an application-by-application basis. Ms. Rudolph indicated that determining wetland objectives is not a decision the Board should be making. The Board's jurisdiction is water, not wetlands, and decisions concerning whether mining should be permitted in wetlands is primarily a land use decision. This question is better left to be answered in the context of a wetland policy development process that is currently being undertaken by the YG and through the land use planning process.

The third question about what wetland reclamation objectives should be considered during the water licensing process. Ms. Rudolph summarized that placer mining, reclamation is primarily under the jurisdiction of YG-EMR and recommends the adoption of best management practices.

She also summarized that the KPMA is open to discussing new ideas and solutions in a collaborative manner. The Parties must be able to work together to achieve a balance in placer mining in wetlands. The KPMA door is open look forward to working with all the Parties.

Additional Intervention Information

December 14, 2020 Letter to the Water Board Chair

A letter from Mr. Will Fellers, President, KPMA summarized that the Board must carefully assess and weigh the information presented at the Virtual Hearing especially because it did not allow for cross examination of the Parties. This letter further expressed concern that the Board exceeded its jurisdiction by treating "wetland" as interchangeable with "water" when making decisions under the Waters Act. When deciding water licences, the Board has a duty to assess the impact of an operation on the proposed use of water or the deposit of waste in water and on water quality, quantity and flow. Mr. Feller's expressed the view that

the proposed Wetland Guidelines exceed the Board's jurisdiction under the Waters Act, are duplicative and place an unfair burden on applicants. In terms of reclamation Mr. Fellers summarized that Yukon regulators have yet to establish a standard that miners must use when working in wetlands. The industry has proposed a Best Management Practices for Placer Mining in Wetlands (2015) which are environmentally sound and attainable.

Mr. Fellers also suggested that it is critical that Yukon regulators, First Nations governments and industry work together in a collaborative way to determine appropriate reclamation guidelines. This correspondence also suggests there is a lack of awareness of the good reclamation work that is already occurring, and it is unfair to critique modern reclamation based on historic dredge tailings.

Mr. Fellers also suggests that placer mining reclamation standards cannot be set or enforced by the Board. Work on reclamation standards must be done by YG in consultation with First Nations and industry. KPMA agrees that broad scale wetland mapping should be conducted by government and used for the YESAA process. Biodiversity in wetlands is beneficial and adaptive management has a role in wetlands management.

Mr. Fellers closed his correspondence by saying that placer mining is more than a job and that the regulation of placer mining on wetlands has "very real implications for us" and "our very way of life is at stake".

Group Submission in Support of Placer Mining in Wetlands, December 14, 2020

A group submission from Concerned Supporters of Placer Mining with 76 electronic signatures was provided to the Board. This submission summarized concerns with the Draft Wetland Guidelines and the impacts on the placer industry.

Summary Responses to Information Requests

DIRECT QUESTIONS:

1. There was a reference to a list of duplicated questions on the Placer Mining application form for a water licence. Provide the list of duplicate questions to the Board to consider.

Response: Please see the enclosed report dated November 29, 2020, with Recommendations and Wetland Guideline Duplication Table, prepared by Ecofish Research.

2. The KPMA referenced US Army Corps of Engineers work in Alaska. Please provide this reference.

Response: The KPMA consulted with the US Army Corps of Engineers to learn more about the work they have completed on wetland mapping, and the mitigation controls implemented to work in wetlands. The KPMA worked with Leslie W. Tose, Project Manager of the Regulatory Division. Her address is CEPOA RD, PO Box 6898, 2204 3rd St., JBER.

3. Considering that more complex applications do not equate to improvement in placer mining reclamation compliance:

- a. How is an improvement in compliance achieved?

Response: EMR, YG is responsible for reviewing and approving reclamation plans. Compliance with placer mine operating plans and reclamation plans is the purview of the CMI Branch. Modern reclamation plans approved by EMR should address any concerns under the water licence, regarding placer mining's long-term impact on water quality, quantity and flow.

In other words, provided the approved plan is implemented, it is expected to resolve any concerns about long-term impacts to water quality, quantity and flow. Reclamation compliance also can be improved by having reclamation guidelines adopted by EMR that are clear, consistent and standardized. The KPMA and its members also are pursuing voluntary strategies to improve placer mining reclamation in the Yukon.

The KPMA has been developing a knowledge and training program for our members as part of the KPMA's work towards strengthening responsibility within the industry. The KPMA has already engaged YG on this independent effort. At its initial roll-out, in Spring 2021, the program will include an emphasis on reclamation training. The pilot season (Spring 2021) will include training on reclamation basics, and wetland classification in the field.

- b. What information should the Board use to ensure that an applicant would be compliant with licence terms?

Response: In reviewing water licence applications, the Water Board ought to require the applicant to provide information that will support the Board's assessment of potential impacts on water quality, quantity and flow. EMR is responsible for reviewing and approving reclamation plans. The Board's recent practice of requiring a water licence holder to file a copy of the approved reclamation plan with the Board is an appropriate term of a water licence.

Further terms in a water licence concerning reclamation would be outside the Water Board's jurisdiction and are also unnecessary. More broadly, at the outset of a regulatory application of any kind, it is difficult for a regulator to assess the potential for future compliance, and unless there is clear evidence to the contrary the Board should assume a licence holder will comply with all legal obligations. Compliance with licence terms is expected, with regulatory regimes imposing penalties for the failure to comply as an incentive for operators to meet licencing and other operating conditions.

GENERAL QUESTIONS:

1. What is the appropriate temporal and spatial scope for baseline wetland information required for an application for placer mining in wetlands?

Response: In deciding water licences, the Board must consider potential impacts of the proposed use of water (or deposit of waste in water) on water quality, quantity and flow. Baseline information should be gathered to support such an assessment of water quality, quantity and flow, prior to issuance of a water licence. The spatial and temporal scope for such baseline data on water quality and quantity may vary, depending on the nature and size of the operation, but would typically be on a watershed basis and require water quality and flow data over different seasons.

When regulators are making land-use decisions about whether to allow placer mining in wetlands, the appropriate spatial scope of baseline information is also at the watershed level. To support this effort, information at a watershed level about wetlands should be developed and made publicly available by YG. If broad wetland mapping is not available, then the use of DFO worksheets which are already submitted to the Board, are a straight-forward and clear way to respond to baseline mapping questions providing information on water sources, stream locations, depths etc. Placer miners ought to update any mapping with recent land disturbances.

Although the Board reviews operating plans under the PMA, it is the Chief of PLU that decides the adequacy of reclamation plans for placer mines. The Water Board, therefore, should only require baseline information relevant to its decision, and not broader issues.

2. Given the status of wetland mapping in Yukon:
 - a. What wetland mapping information should be required as part of an application for a water licence?

Response: Wetland mapping is not relevant to water licence applications. Mapping or identification of hydrologically connected water bodies may be relevant and assist the Board in making water licencing decisions. More broadly, information requested by regulators should take into account the skills, resources and knowledge of the proponents, as well as the nature of the project. Not all projects will require the same level of detail, and not all proponents will have the same capacity to provide it.

b. Who should provide that information and when?

Response: Wetland mapping information should be presented during the YESAA and land use decision-making process, not in support of a water licencing decision. The applicant should be required to present available mapping information where necessary, with reasonable ground truthing completed by the miner to verify the information. Ultimately, regional-scale wetland mapping should be completed by YG.

3. What post-reclamation monitoring is required to verify that wetland reclamation techniques are effective? Who is responsible for verification?

Response: EMR is responsible for approving reclamation plans for placer mining and CMI is responsible for enforcement, including verification of reclamation techniques. Good reclamation is done progressively as mining occurs. The CMI Branch should verify reclamation techniques are effective through existing routine inspection schedules during the life of a placer mine (while licences are active), and use their enforcement powers to require improvements, when warranted.

4. What requirements in a licence or mining land use authorization would improve effectiveness of wetland reclamation and that reclamation objectives are achieved post-mining?

Response: It is appropriate to include progressive reclamation as part of a reclamation plan approved by EMR under the Placer Mining Act. In issuing water licences, the Water Board ought to be satisfied progressive reclamation required under an approved reclamation plan to maintain or restore water quality, quantity and flow. It is expected that a reclamation plan approved by EMR would have that effect. To the extent the Water Board reviews reclamation, it must be mindful of its regulatory mandate to regulate water, as a substance, and not wetlands as a whole. Wetland reclamation efforts will become more effective with clear guidance on expectations for reclamation of placer mines, combined with training of miners to ensure they understand the requirements and are able to implement them. The KPMA's Best Management Practices for Placer Mining in Wetlands (2015), combined with adaptive management, is an excellent starting point. Once clear guidance is in place, compliance and monitoring of compliance ought to be more effective. The Board has an opportunity to encourage adoption by EMR of reclamation standards to assist it's own decision-making.

5. Because techniques of placer mining reclamation of wetlands transforms bog and fen wetland types to marsh and shallow water bodies:

a. How does this transformation on a claim-by-claim basis affect the watershed-scale wetland ecosystem?

Response: This question is outside the jurisdiction of the Water Board when deciding water licences under the *Waters Act* (see above submissions). Tolerance for wetland-type transformations (from bog and fen to marsh and shall water bodies) ought to be decided as part of YG's current Wetland Policy development and various territorial Land Use Planning exercises that are underway or pending. A broad environmental and socio-economic assessment of a proposed placer mine is also conducted pursuant to YESAA, and review of a proposed operational and remediation plans pursuant to the PMA.

b. Are shallow water bodies and marsh wetland types over-represented because of reclamation and what is the cumulative effect?

Response: This question is outside the jurisdiction of the Water Board when deciding water licences under the *Waters Act*. Wetland conservation is not an issue for the Water Board to decide. Mining reclamation is primarily the jurisdiction of EMR. Tolerance for wetland-type transformations (from bog and fen to marsh and shall water bodies) ought to be decided as part of YG's current Wetland Policy development and various territorial Land Use Planning exercises that are underway or pending. Shallow water bodies and marsh wetlands are not over-represented in Yukon. To the contrary, they are the rarest type of wetland in Yukon. It is important to stress that at least 58 percent of the Yukon is classified as wetlands. Only 0.56%

of the territory is covered in placer claims, and only a small portion of those claims are currently or potentially anthropogenically disturbed land.

c. How does the transformation affect wildlife?

Response: This question is outside the jurisdiction of the Water Board when deciding water licences under the *Waters Act*. The KPMA submits that shallow water wetlands and marshes are preferred habitat of ungulates, invertebrates, birds and fur bearing animals. The KMPA notes that changes to wetland types typically increases landscape diversity, which results in greater biodiversity, as stated by Scott Smith in his *Context* presentation at the Oral presentation phase of the Hearing, and DU in their presentation.

6. Can the utilization, development and conservation of wetlands be achieved using a management approach similar to the DFO watershed authorization model?

Response: This question is outside the jurisdiction of the Board when deciding water licences under the *Waters Act*. The DFO watershed authorization approach is useful as a flexible, risk-based approach. The DFO watershed authorization approach, which uses a workbook and worksheet as tools, would be useful in water licencing, provided it does not seek answers or information that exceed the Board's jurisdiction. A flexible or risk-based approach to regulating placer mining in wetlands would allow for more detailed study into the areas requiring attention as determined following the implementation of YG's Wetland Policy. If developed collaboratively with placer miners and other stakeholders, and implemented effectively, a flexible risk-based approach would simplify the regulatory process, provide certainty and be more cost effective for all parties, including regulatory agencies and placer miners.

7. How does the cost of reclamation for a placer operation in non-wetland areas compare to the cost of reclamation of wetlands?

Response: Mining reclamation is primarily the jurisdiction of EMR, YG and any security set for a placer mine operation pursuant to the *Placer Mining Act* ought to reflect, among other things, a progressive reclamation plan. The Water Board should be satisfied that the progressive reclamation plan approved by EMR will achieve similar functionality when it comes to water quality, quantity and flow. If the Board is satisfied, then no further security ought to be required. Using the KPMA's *Best Management Practices*, the cost for reclaiming wetlands would be marginal compared to the reclamation of other land types. Some of the financial figures offered by other interveners, or their consultants, at the Virtual Hearing were greatly exaggerated and do not match the KPMA's financial analysis of the cost of reclamation.

a. What is the economic impact of reducing mining in wetlands?

Response: This question is outside the jurisdiction of the Water Board when deciding water licences under the *Waters Act*.

As of late November 2020, the placer industry reporting over 82,000 crude ounces of gold in 2020, with a value of approximately \$165.6 million. In 2020, placer miners will spend an estimated \$144 million dollars in the Yukon economy. Conservatively, at least 60% of placer mining claims are in some type of wetland (gold is heavy and typically sits in valley bottoms where water also collects). A decision that no mining could occur in wetlands would see immediate and significant decline in the industry. If mining in wetlands ceased altogether, it is reasonable to estimate that the mining industry would experience at least a 60 percent reduction in revenue, with a corresponding reduction in the ability to invest in the Yukon economy. Currently, there are four fuel companies, two grocery stores, multiple restaurants, hotels and stores in Dawson. Many of these businesses are supported by the placer mining industry. A substantial reduction in placer mining would impact these businesses.

b. If security is required for a placer undertaking, what information is required to calculate it for reclamation of wetlands?

Response: EMR is responsible for deciding any security required for Classes 1-3 placer mines and for approving reclamation plans for wetlands for Class 4 placer mines, and it should therefore be their responsible for deciding what security ought to be paid in relation to that plan.

Pursuant to the *Placer Mining Act* (s. 106) and *Placer Mining Land Use Regulation*, the following factors are relevant to Chief's assessment of whether security is required:

- The Chief must conclude there is a "risk of significant adverse environmental effect" before security is payable, and the Chief may assess the "past performance" of the placer miner in making that assessment.
- The amount of security shall not be more than the total costs of: (a) abandonment of the operation; (b) restoration of the site of the operation; and (c) any measures required to be taken or continued if the operation is abandoned.
- In fixing the amount of security, the Chief may consider: (a) the degree of risk of any significant adverse environmental effects; (b) the financial ability of the placer miner; (c) any security deposit made with the Minister under the *Waters Act*.

The Minister must, at the request of the operator, return any part of the security furnished by the operator that is no longer required for the mitigation of the adverse environmental effects of the operation.

It is expected that if security is paid pursuant to the *Placer Mining Act*, no further security ought to be required under the *Waters Act* because progressive reclamation of the site pursuant to the *Placer Mining Act* and the approved reclamation plan would achieve the objectives of both restoring the land (including the wetland) and any water impacts.

8. Can the use of adaptive management plans mitigate adverse effects to wetlands from placer mining?

Response: Adaptive management plans are the best way to mitigate adverse effects of placer mining in wetlands. This approach allows for proponents to work with known terms and conditions for certain wetland types and make accommodations to their mining plans that allow for flexibility in operations while maintaining an acceptable level of compliance in reclamation.

9. Indigenous Knowledge (IK) was raised as a source of information to help understand landscape connectivity. Please provide information on how the Board could incorporate IK on an application-by-application basis and when IK should be provided.

Response: The Board has not provided a definition of Indigenous Knowledge. The term "Indigenous Knowledge" (IK) does not appear in the UFA or any relevant Yukon legislation. UNESCO defines IK as:

Local and indigenous knowledge refers to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. For rural and indigenous peoples, local knowledge informs decision-making about fundamental aspects of day-to-day life.

It is notable that the UNESCO definition considers the knowledge of rural people who have long histories in the region. Many placer miners fit that definition. Although it is not directly addressed in Chapter 14 of the UFA, the KPMA respectfully acknowledges traditional knowledge would be relevant to such issues as Traditional Use of water. Traditional knowledge might also be relevant to assessing hydrologic connectivity of water ways when the Board is making licencing decisions. The Board ought to be clear what evidence, including science and traditional knowledge, it is relying on in reaching its decisions.

The KMPA also provided an Ecofish document dated November 19, 2020 that summarized their review of the Yukon Water Board Guidelines with Recommendations and Conclusions.

6.6 DUCKS UNLIMITED

Representation Summary

Mr. Jamie Kenyon introduced himself as the Yukon Manager for DUC. He also introduced Dr. Pascal Badiou with DUC's wetlands and waterfowl research. DUC is a non-government organization that has been in existence since 1938. DUC conserves, restores and manages wetlands to benefit waterfowl, wildlife and people, with a goal of ensuring abundant wetlands and waterfowl for generations to come, while also improving Canadian lives. DUC is a science-based organization. In terms of Yukon, DUC has been local since the 1980s with some of our earlier work helping to start up Swan Haven in partnership with a number of other groups. Since the 1990s, DUC has been providing that science knowledge to things such as land use planning processes, protected area management plans, and policy development and processes. DUC's work is done in partnership with government, First Nations governments, academia, other NGOs, and industry, including a project with the KPMA. DUC works towards a balance between the protection of wetlands, the conservation of wetlands and maintaining those wetland benefits where development occurs in wetlands.

The following summary is taken from DUC's presentation and Transcript from the Virtual Hearing.

Mining Impacts Wetlands

- Changes to hydrology
- Conversion to different wetland types
- Overall loss of wetlands
- Loss of wetland benefits to people



boreal.ducks.ca



@ducboREAL

Overview of Permafrost Peatlands: complicated and sensitive

- Peatland surface vegetation and soils promote the aggradation and maintenance of permafrost due to their effects of surface energy balances:
 - Insulative when dry during summer (protects PF)
 - Highly conductive when wet and frozen in fall (promotes PF)
- Increases in ground heat flux because of climate warming or **disturbance** of surface properties cause **permafrost** to **thaw** from the top, increasing the depth of the active layer.



boreal.ducks.ca



@ducboREAL

Overview of Permafrost Peatlands: complicated and sensitive

- Various climate models predict a tipping point or runaway feedback that could be triggered by permafrost thaw “Permafrost Carbon Feedback”.
 - Accounts for additional heat produced by microbial respiration during decomposition of organic matter
 - Rate-dependent tipping, if air temperatures increase fast enough
- Impacts associated with physical disturbance of permafrost due to placer mining and other industrial activities can potentially speed up this process



Implications of permafrost peatland loss due to placer mining

- Physical disturbance / increased TSS
- Hydrological disturbance, increased conveyance and reduced buffering capacity
- Altered biogeochemical processes resulting in:
 - Increased nutrient export (N, P, DOC and POC)
 - Increased export of Hg
- Altered wetland soil thermal regimes, resulting in additional permafrost thawing and amplification of other disturbances



Summary

- No-net-loss of wetland function or benefit
- No mining in open water and marsh wetlands due to rarity
- No mining in bogs due to sensitivity
- Use the precautionary principle and adaptive management
- Increase research into hydrology, permafrost, and reclamation techniques



boreal.ducks.ca



@ducbooreal

SUMMARY OF SLIDES

- DUC showed the impacts on a wetland in the Sixty Mile River where placer mining moved the river channel and dissected a wetland by a new river channel.
- The conversion of a bog or a fen or a swamp to shallow, open-water wetland type has impacts on the type of wetland benefits that will be provided.
- There is also an overall loss of wetlands on the ground than what was there prior to mining occurring which adds up to reduced benefits to people and changes in wetlands hydrology.
- DUC also summarized their wetland mapping project for the entire Dawson Regional Land Use Planning Area. This project has funding from YG, as well as Environment Climate Change Canada and a partnership with TH.
- The preliminary results of this project of just classifying the planning region as upland wetland or open water shows there is about 10 % of wetland coverage within the Dawson Planning Region.
- The project with the KPMA looked at waterfowl use in some of the ponds that have been created by placer mining to understand what characteristics would be correlated with waterfowl use.

Hearing Questions

QUESTION 1. WHAT INFORMATION SHOULD BE REQUIRED TO SUPPORT A WATER LICENCE APPLICATION FOR PLACER MINING IN WETLANDS?

| Information Need | Rationale |
|---|--|
| Wetland mapping within the catchment of an application | Require understanding of type, area, and interconnectedness of wetlands to assess hydrological impact |
| Permafrost mapping within the catchment of an application | Require understanding of the extent of permafrost to assess amount of permafrost degradation and subsequent changes to hydrological function |
| Peat depth | Required to estimate carbon release |
| Reclamation plan including timeframe | Wetland benefits will be lost during the time wetlands are not present |
| Reclamation costs | Needed to determine if reclamation plan is feasible, achievable, and realistic |

 boreal.ducks.ca
@duc boreal

Summary of Slide

- Wetland mapping within the catchment of an application.
- Permafrost mapping within the catchment of an application
- Peat depth.
- Reclamation plan including timeframe.
- Reclamation costs.

QUESTION 2. WHAT SHOULD THE WETLAND CONSERVATION, DEVELOPMENT AND UTILIZATION OBJECTIVES BE ON A WATERSHED BASIS AND HOW CAN THEY BE BALANCED ON AN APPLICATION BASIS?

Wetland conservation, development and utilization objectives

- The sensitive nature and unpredictability of how permafrost wetlands respond to interactions between climate change and disturbance requires use of the precautionary principle to manage this unknown risk
- No-net-loss of wetland function should be the overall objective (will require investment in peatland reclamation).
- Shallow open water, marsh and isolated bog wetlands should be avoided. These only represent a total of 6.5% of the wetland area within claim blocks. SOW and marsh are the most crucial to waterfowl, and bogs can be very sensitive to any form of hydrological change



boreal.ducks.ca



@ducbooreal

Summary of Slide

- Precautionary Principle to manage risk for the sensitive and unpredictability of how permafrost wetlands respond to interactions between climate change and disturbance.
- No-net-loss of wetland function should be overall objective.
- Shallow open water, marsh and isolated bog wetlands should be avoided.
- Permafrost Peatlands are complicated and sensitive.
- Peatland surface vegetation and soils promote the aggradation and maintenance of permafrost due to their effects of surface energy balances.
 - Insulative when dry during summer which protects permafrost.
 - Highly conductive when wet and frozen in fall which promotes permafrost.
 - Increases in ground heat flux because of climate warming or disturbance of surface properties cause permafrost to thaw from the top, increasing the depth of the active layer.
- Various climate models predict a tipping point or runaway feedback that could be triggered by permafrost thaw or a “Permafrost Carbon Feedback”.
- Impacts associated with physical disturbance of permafrost due to placer mining and other industrial activities can potentially speed up this process.
- Implications of permafrost peatland loss due to placer mining include:
 - Physical disturbance and increased Total Suspended Sediment (TSS).
 - Hydrological disturbance, increased conveyance and reduced buffering capacity.
 - Altered biogeochemical processes.
 - Altered wetland soil thermal regimes, resulting in additional permafrost thawing and amplification of other disturbances.
- Wetland conservation, development and utilization objectives:

- The sensitive nature and unpredictability of how permafrost wetlands respond to interactions between climate change and disturbance requires use of the precautionary principle to manage this unknown risk.
- No-net-loss of wetland function should be the overall objective (will require investment in peatland reclamation).
- Shallow open water, marsh and isolated bog wetlands should be avoided.

QUESTION 3. WHAT WETLAND RECLAMATION OBJECTIVES SHOULD BE CONSIDERED DURING THE WATER LICENSING PROCESS?

| | |
|--|--|
| <h3 style="text-align: center;">Reclamation</h3> <ul style="list-style-type: none"> • Currently, most reclamation efforts are based on passive techniques and do not fully recapture all wetland benefits – particularly when converting to a different wetland type <ul style="list-style-type: none"> – Substrate is a key component for reclamation success and substrate composition requires further evaluation – Our recommended open water and marsh characteristics provide the first step of an adaptive management framework for testing the efficacy of these practices with the intent of achieving best management practices? <ul style="list-style-type: none"> • 1) Physical design and basin topography, 2) Plant communities and habitat structure, 3) Hydrological design, and 4) Wildlife features | <h3 style="text-align: center;">Reclamation</h3> <ul style="list-style-type: none"> • The application of peatland reclamation techniques that have been successful in other regions can help minimize impacts of disturbance on permafrost wetlands and should be explored. • Adding peatland reclamation could facilitate achieving a no-net-loss of wetland function by maintaining the original complement of wetland benefits. |
|--|--|

Reclamation

Potential for peatland and permafrost reclamation:

- Moss Layer Transfer Technique (MLTT)
 - top 10 cm of a natural peatland (donor site) is harvested and the collected diaspores (plant fragments, rhizomes, roots, seeds and spores) are spread over a disturbed area (average 1:10 areal ratio of 1 m2 of harvested material is spread over 10 m2 on the site to be restored).
 - P fertilizer is applied and area is covered with straw mulch
 - Effective at reestablishing fen vegetation communities and reestablishing carbon sink potential
- Mulching over linear disturbances associated with placer mining activities
 - helps prevent permafrost thaw associated with linear features
- Incorporation of a tailings system configured to encourage permafrost aggradation (as per the Mining Environment Research Group's 2004 report)
 - This could be sequenced with the MLTT to take donor material from new developments to apply to tailings ponds where permafrost has aggraded

Summary of Slides

- Currently, most reclamation efforts are based on passive techniques and do not fully recapture all wetland benefits, particularly when converting to a different wetland type.
- Substrate is a key component for reclamation success and substrate composition requires further evaluation.
- DUC’s recommended open water and marsh characteristics provide the first step of an adaptive management framework for testing the efficacy of these practices with the intent of achieving best management practices including:
 - Physical design and basin topography.
 - Plant communities and habitat structure.
 - Hydrological design.

- Wildlife features.
- The application of peatland reclamation techniques that have been successful in other regions can help minimize impacts of disturbance on permafrost wetlands and should be explored.
- Adding peatland reclamation could facilitate achieving a no-net-loss of wetland function by maintaining the original complement of wetland benefits.
- Potential for peatland and permafrost reclamation:
 - Moss Layer Transfer Technique (MLTT) where the top 10 cm of a natural peatland (donor site) is harvested and the collected diaspores (plant fragments, rhizomes, roots, seeds and spores) are spread over a disturbed area.
 - Fertilizer is applied and area is covered with straw mulch.
 - Effective at re-establishing fen vegetation communities and carbon sink potential
 - Mulching over linear disturbances associated with placer mining activities helps prevent permafrost thaw associated with linear features.
- Use the precautionary principle and adaptive management.
- Increase research into hydrology, permafrost, and reclamation techniques.

Board Questions

BOARD MEMBER: MR. WARNSBY:

Thank you, Mr. Chair, just a question on how Ducks Unlimited views no-net-loss of wetland benefit. One thing that came across in the evidence from the KPMA this morning is this notion that placer miners, when they're out there, doing their regular work, they're creating these marshes. They're creating these open water wetlands, and so, that seems to me at least arguably – there is at least an argument to be made that that is increasing the net benefit of wetlands. I just kind of wanted to get some sense on how that plays into this no-net-loss of wetlands when they may be changing from something like a swamp-type of wetland to this open water marsh-type wetlands, how Ducks Unlimited would view that, thanks.

RESPONSE: MR. KENYON

Sure, I'll start, and Pascal can jump in as he sees fit; but the different wetland classes do perform slightly different functions. For example, a bog or a fen has more of that carbon storage function than an open water wetland or a marsh wetland would. So, you do have different benefits that get provided there. Yes, an open water wetland or a marsh wetland will replace some of those benefits, and some of those benefits may be higher than what was there before; but it's all going to come down to: What benefits is it that you want to maintain or potentially improve?

RESPONSE: DR. BADIOU

I'll just quickly add to what Jamie said. So, when you have the conversion of a wetland type, specifically a permafrost peatland to an open marsh, shallow open-water area, you potentially have indirect effects off that wetland site.

So, you might actually be further degrading surrounding peatlands without really knowing it; and so, that's where it gets difficult to measure the net change in benefits. So, while I agree that the passive reclamation and additional of marsh and shallow open water does provide some benefits, it's difficult to know whether it's providing necessarily a net benefit or whether we're still, you know, in a debit situation because of additional permafrost peatland areas that are affected outside as a result of that change.

BOARD MEMBER: MR. BOWEN

Thank you, Mr. Chair. I'm wondering how you might recommend the mapping of permafrost and by whom would conduct that mapping? I understand that this would require quite an extensive subsurface investigation of soil sampling, with a description of ice type, sediment and other parameters. So, again to

my original question: How would you recommend this mapping of permafrost be conducted, let's say, on a site specific basis, and who would be responsible for that mapping? Thank you.

RESPONSE: DR. BADIOU

I'll jump in just quickly here. I'll let Jamie answer most of that question, but I think what is really interesting is that the occurrence of wetlands on the landscape is really driven in the Yukon by a presence of permafrost; and so, by having a good, detailed wall-to-wall wetland inventory available for the Yukon, you might actually facilitate, going forward, your ability to predict where permafrost, in fact, is occurring.

So, I know that's kind of flipping this around in terms of starting with mapping permafrost, because I think there is a fairly good knowledge of where permafrost occurs; but I think if you have a highly detailed wetland inventory, that would, in fact, facilitate mapping out permafrost in the Yukon.

RESPONSE: MR. KENYON

Yes, unfortunately, I don't know a lot about permafrost mapping, so I'm not sure exactly what that would entail. I think that there are some cues that I think can be helpful, like, wetlands mapping, there's some research going into remote sensing methodologies to try to map permafrost. I'm not sure how successful those are yet; and in terms of who should do it, this question has obviously come up with wetland mapping, as well, I'm not sure that we necessarily have a preference. I think there are pros and conservation, whether it's the proponent or government to do it. Obviously, with government, there's going to be efficiencies of scale, as well as that information is going to be able to be used in a number of other processes, such as land use planning, research into other wildlife or other issues, land use decision-making. So, there are some very good reasons why it should be government who does it, but I'm not sure we necessarily have a position on that, thanks.

BOARD MEMBER: MR. BOWEN

Thank you very much.

BOARD MEMBER: CHAIR, MR. MCDONALD

One quick question, Mr. Kenyon: If what an intention was to protect bogs, to avoid mining in bogs, do you have any thoughts about buffer zones around bogs? What would it take to protect a bog? What information should be known – like, the hydrology of the area of whatever, what information should be known in order to protect a bog if that was one of the intentions?

RESPONSE: MR. KENYON

Maybe I'll let Pascal answer this. I know he's looked at this a little bit.

RESPONSE: DR. BADIOU

Yes, so, that is challenging. I think all of these questions, it kind of becomes a circular argument. It could be informed by, you know, again coming back to inventories and monitoring help address some of those; because of course, if you don't have a baseline to measure against, it becomes pretty difficult.

In terms of bogs, because they are so interconnected with the surrounding landscape, you know, just arbitrarily picking and choosing a buffer distance could be problematic without having site specific information.

One of the kind of recommendations I have seen historically for wetlands of concern or priority wetlands is to apply a 30-metre buffer, and then, start from there. But again, without having some baseline monitoring to, in fact, go in and quantify what type of buffer distance might influence the hydrology of those systems becomes quite challenging.

I do think that a buffer around bogs to protect them is in order, and I think you could potentially inform that by looking at some of the places that have been previously mined in or around or near bog systems;

and it probably wouldn't require a huge effort, because monitoring water level changes in those systems now with remote data collection can be streamlined quite easily.

BOARD MEMBER: MR. WARNSBY

Thanks, just one quick thing, and it's probably not something I'd expect right now, but would it be possible to get some information on where reclamation of peatlands has taken place, some documents, research or whatever; just because it's the first I've heard about peatlands being reclaimable and on a reasonable time scale. I think it would be something that would be useful for the Board and our technical support to have a little bit more information on that, because it does seem to be something that's a little bit more of a novel approach to those areas being reclaimable, thank you.

RESPONSE: DR. BADIOU:

Sure, I can arrange to share those documents with Jamie. You know, in fact, I think we're quite lucky. We probably have some of the best peatland reclamation experts in the world here in Canada; now, again with the caveat being that most of those reclamation projects have occurred in southern, boreal landscapes, not northern landscapes. And so, looking at how those might need to be tweaked and adjusted and applied in northern settings would be important.

RESPONSE: MR. KENYON

Yes, we'll include some information on that in our written submission.

Closing Remarks

Mr. Jamie Kenyon thanked the Board again for the opportunity to present at the Hearing. He provided a summary of some take home messages from the Hearing. He started by summarizing the no net loss of wetlands approach would ensure than many of the socio-economic and ecological benefits of wetlands would be maintained. He also clarified comments about the performance of reclaimed wetlands. In this context, some reclamation activities that replace a wetland class may results in certain services being enhanced but it may also cause the loss of some services. He also summarized that the full footprint of development is typically negative when cumulative impacts are considered. Currently there is a general lack of understanding of "tipping points" in regard to cumulative effects which means that decisions will have to be made very carefully using a precautionary approach.

Mr. Kenyon also referred to the mitigation sequence presented by CPAWS where the precautionary principle includes avoidance of impacts, followed by minimizing impacts and reclamation and offsetting. He also commented that some types of wetlands may not be appropriate for placer mining such as shallow open water and marshes due to their rarity of occurrence. The management of water licences is required with the practice that are being used with improved research in the areas of hydrology, permafrost and reclamation approaches.

Mr. Kenyon expressed concerns with YG's Interim Approach for the Indian River in terms of the changes that occur to wetlands with changes in the hydrology and degradation of permafrost. This can lead to a larger footprint through a "feedback cycle" on disturbed wetlands. The 40 % protection for fens does not consider these impacts for areas that are not being mined. This may impact the conservation and licensing goals of the Interim Policy.

Mr. Kenyon also summarized those wetlands, particularly marshes, produce methane which is a short lived greenhouse gas. When a peatland is mined, much of the carbon that is stored within it becomes available for oxidization and is released as carbon dioxide into the atmosphere. Carbon has accumulated in peatlands over millennia, and it is very long-lived in the atmosphere. So, when the peatland is mined, that carbon that has not in the atmosphere for many thousands of years will be available to be in the atmosphere for a very long time, which will have impacts on climate change going forward.

Additional Intervention Information

Letter to Board Chair, Mr. Piers McDonald, September 30, 2020

This letter summarized the initial response of DUC to the Board questions that was outlined during their verbal presentation at the Hearing. DUC submitted the following technical paper on the current state of knowledge related to wetlands in northern Canada and the linkages to permafrost, carbon cycling and climate change:

Wetlands in Northern Canada: Permafrost, Carbon and Climate Change, Bortolotti, Badiou and Slattery, 2018

Response to the Board Chair, Mr. Piers McDonald on December 14, 2020.

The following is a summary of this response.

All five classes of wetlands are found in Yukon and provide numerous benefits including clean water, flood and drought mitigation, plant and wildlife habitat and climate change mitigation. Wetlands are susceptible to negative impacts by placer mining activities. Most of the wetlands impacted by placer mining are fens and swamps and are often associated with permafrost. Current reclamation practices results in a mixture of marsh or shallow water and upland habitats. These reclamation efforts result in a change in wetland functions and associated benefits.

DUC recommended a no-net-loss of wetland function or benefit as a foundational management principle. A no-net-loss approach ensures that the functions and benefits present on the landscape will remain after placer mining occurs. No-net-loss can be partially achieved through on-site reclamation activities with additional offsite measures.

Most of the wetlands in Yukon are fen or swamp classes. Bogs, marshes and shallow open water are relatively rare. DUC supports YG's ban on placer mining in bogs in the Indian River watershed. DUC recommended that marshes and shallow open water wetlands should receive similar management actions.

DUC recommended that the Board employ the Precautionary Principle with an adaptive management framework to assess and continually inform licence applications over time. The adaptive management framework should set goals for placer mining in wetlands with appropriate monitoring, evaluation and adaptation of practices to lessen the impacts of placer mining activities in wetlands. DUC also recommended further research into hydrology, permafrost and reclamation techniques to better understand how wetlands are impacted by placer mining activities and how to minimize these impacts.

DUC raised concerns with the YG's Interim Approach for placer mining in wetlands in the Indian River by stating it does not consider impacts to wetlands hydrology, permafrost maintenance, improper advice on the use of existing mapping, poor reclamation guidelines, lag times for monitoring and loss of natural waterfowl habitat. There is also a lack of scientific evidence of the thresholds in the Interim Approach.

There is concern about the scale of wetland mapping done by YG to properly delineate exact boundaries where mining activities would or would not be allowed. The Reclamation Guidelines provided by YG also will result in the conversion of fen wetlands to open water or marsh and possibly upland areas which will likely results in the conversion of wetlands with a reduced function compared to natural conditions.

The five-year lag in monitoring is also a concern in terms of mitigation measures being implemented to minimize impacts. DUC recommends a no-net-loss of wetland function and benefits as well as consideration of wetland mapping recommendations to address these issues and to continually improve the policy. DUC supports the protection for bogs and recommends that similar protection be extended to shallow water and marsh habitats.

DUC estimates for the Dawson Regional Land Use Planning area there is approximately 11.7% (563,737 hectares) wetland (bog, fen, swamp, or marsh) plus another 1.1% (51,186 hectares) as open water which includes shallow open water wetlands as well as rivers and lakes. DUC estimated the Klondike Plateau ecoregion to have 183,663 hectares of bogs, fens, swamps, and marshes plus 37,475 hectares of open water that includes shallow open water wetlands. It is also estimated that approximately 62% of the active placer mining claims contain or intersect with a wetland. This degree of overlap justifies concerns regarding impacts to wetlands from placer mining.

DUC agreed that there is no proven reclamation techniques for bogs and fens in Yukon however, they recommended that the technique that they proposed should be considered by the Board with further testing to determine its feasibility and as a means to achieve the principle of no net loss. There have also been no studies in the Indian River or other locations in Yukon to examine natural wetlands that are adjacent to a disturbance.

DUC also summarized that placer mining in wetlands does contribute to climate change due to the loss of carbon that has been sequestered for a millennia.

Summary Responses to Information Requests

DIRECT QUESTIONS:

1. Should the Board require mapping of permafrost on a site-specific basis as part of the wetland information guidelines? If so, who is responsible providing that information?

Response: DUC believes permafrost mapping should be a requirement on a site-specific basis as part of the Board's wetland information guidelines. Permafrost plays a large role in the hydrology of an area and strongly influences the type of vegetation that is present which in turn influences the wildlife that use the area. Removal of insulative cover and changes to hydrology can lead to permafrost degradation and in some cases total loss. A feedback cycle is then possible with the degraded permafrost altering hydrology and so on. Understanding where permafrost is, combined with other information sources such as a wetlands map, can help the Board assess potential impacts to wetlands and hydrology for both the claim block and within that claim block's catchment. With respect to who should provide this information, DUC has no position on who should provide the information, but it is important to ensure consistent and quality information be provided. Standards for mapping, including the appropriate scale and methodologies, need to be determined, presumably by the Water Board.

2. What would it take to protect a bog using buffers and what information is required to support the implementation of the use of buffers around bogs and fens?

Response: A site-specific buffer would consider the unique characteristics of a site and mining program and determine the appropriate buffer. The downside to this approach is the amount of information that is necessary to determine the buffer. Information needs for this approach are broadly summarized as: length of time of disturbance, adjacent habitat types, permafrost presence, hydrology, and reclamation goals. Buffer size may also depend on the wetland function or functions, such as water quality, hydrological function, or wildlife habitat, that is trying to be conserved.

In our opinion, a conservative approach for the utilization of buffers would be to use an initial buffer of 15 metres for wetlands under one hectare in size and 30 metres for wetlands greater than one hectare in size within a framework of the Precautionary Principle and Adaptive Management. Our suggestion of buffer sizes is based on reviews of wetland buffers in Ontario and should be used initially and further refined through a monitoring program aimed at assessing hydrological impacts between bogs and fens with and without buffers.

3. Please provide more information on the novel peatland reclamation examples referred to in your presentation. Are peatland reclamation techniques feasible when applied to placer mining operations in Yukon?

Response: A technique for reclamation of peatlands was developed for the sphagnum peat mining industry in Canada as the environmental impact of their activities became an issue in the 1990's. In the early 2000's, restoration guides were published as a tool for peat miners to inform their reclamation actions. These techniques have been refined over the years with updated guidance being released in 2020. The most recent techniques are referred to as the "Moss Layer Transfer Technique" (MLTT).

The MLTT is "the active reintroduction of peatland plant species combined with rewetting through hydrological management. MLTT involves transferring donor material (live sphagnum moss) from another site, spreading it over existing peat at the area to be reclaimed, mulching (covering of the site with straw to protect the area from frost and evaporation, fertilizing, rewetting the site (maintaining the water table near the ground surface with limited water level variation), and subsequent monitoring.

DUC believes this method is worth determining its feasibility. It is acknowledged that this method has not been used in permafrost regions or on placer mine sites. MLTT is much different than the current reclamation approach used by placer miners of leaving shallow open water and upland habitats in place of peatlands and may require modifications to current mining practices and more time dedicated to reclamation to be successful. It is very likely that there will also need to be some refinements to the methods described in the above documents to adjust to the unique nature of placer mining in the Yukon such as possibly spreading stockpiled peat to act as a base. MLTT was designed to address issues in the sphagnum peatmoss mining industry which operates at a similar scale as Yukon's placer industry.

If MLTT is deemed a plausible approach worth testing, then perhaps a pilot project could be undertaken to fully determine it's feasibility for reclaiming bogs and fens and the ecosystem services that they provided at the watershed scale prior to having been impacted by placer mining.

GENERAL QUESTIONS:

1. What is the appropriate temporal and spatial scope for baseline wetland information required for an application for placer mining in wetlands?

Response: The spatial scale for baseline information for an application should extend beyond the claim block itself to include the hydrological catchment that the claim block is located. Activities within the claim block that impact hydrology will extend both upstream and downstream of the claim block and can subsequently impact permafrost, vegetation, and wildlife.

Conditions within a wetland can vary temporally. Collecting baseline data on a temporal scale could be used to understand the variation of hydrological conditions within a wetland over the course of a year. If only one year of data is collected, analysis will have to control for inter-annual variability in conditions such as precipitation or temperature that may influence hydrological conditions.

2. Given the status of wetland mapping in Yukon:
 - a. What wetland mapping information should be required as part of an application for a water licence?

Response: An application should provide information on the type of wetlands present and the spatial extent of these wetlands which includes where wetlands are situated and the total area of each wetland. DUC believes this needs to be done within the entire catchment of the claim block, both upstream and downstream, to be able to assess the hydrological impact and indirect footprint of placer mining activity on wetlands.

Current mapping products, such as the wetland mapping for the Indian River done by Karen McKenna on behalf of YG, are conducted at such a scale that the exact boundaries of a wetland are fuzzy. In other

words, existing mapping products cannot delineate where to dig if a permit condition were to instruct a miner to not mine in a wetland. Furthermore, with the example of the existing wetland inventory of the Indian River, many of the wetlands are mapped as complexes meaning a wetland polygon consists of some combination of fen, bog, and/or swamp resulting in not knowing exactly where within the polygon each of these wetland types are.

b. Who should provide that information and when?

Response: DUC does not have a position on who should conduct wetland mapping. The concern is more focussed on the quality of the mapping products used during project assessment and licencing. Standards for mapping, including the appropriate scale and methodologies, need to be determined depending on the scope and nature of the intended application.

3. What post-reclamation monitoring is required to verify that wetland reclamation techniques are effective? Who is responsible for verification?

Response: DUC supports the need for robust monitoring to verify the effectiveness of reclamation techniques as a critical component of adaptive management. The level and nature of monitoring that occurs will depend on what the goals of reclamation are. Monitoring the success of reclamation that recreates a bog or fen may be different than measuring success of reclamation to an open water/marsh/upland system. Reclamation goals that focus on other wetland functions or values may require monitoring of plant and animal communities or specific ecosystem function such as carbon sequestration rates. Clear reclamation goals should be established so that appropriate monitoring goals and techniques can follow. Monitoring and verification should be conducted by either government, the Board, or some other independent third party.

4. What requirements in a licence or mining land use authorization would improve effectiveness of wetland reclamation and that reclamation objectives are achieved post-mining?

Response: Wetland reclamation effectiveness could be improved and overall impact from placer mining could be reduced if the amount of time between the onset of mining and the completion of reclamation activities is minimized. The organic soils found in wetlands becomes less viable the longer it is stockpiled, decreasing its effectiveness as a growth medium in both wetlands and uplands. Additionally, long exposure to the air facilitates the release of carbon dioxide (a greenhouse gas) to the atmosphere as it oxidizes while it dries out, contributing to further climate change impacts.

The Board may also have to consider shorter licences or reconsider renewals to ensure reclamation is done in an expedient manner. Another licence condition the Board could consider is reclamation security bonds. These security bonds can incentivize licensees to conduct reclamation in a timely and effective manner.

5. Because techniques of placer mining reclamation of wetlands transforms bog and fen wetland types to marsh and shallow water bodies:

- a. How does this transformation on a claim-by-claim basis affect the watershed-scale wetland ecosystem?
- b. Are shallow water bodies and marsh wetland types over-represented because of reclamation and what is the cumulative effect?
- c. How does the transformation affect wildlife?

Response: The disturbance to, and transformation and loss of, wetlands by mining impacts the watershed-scale wetland ecosystem through disruption of hydrology, permafrost degradation, release of carbon to the atmosphere, altered nutrient cycling, and loss of habitat for plants and animals. While an individual claim may have relatively minor impacts, the cumulative impact of multiple mine sites can result in significant negative impacts to the wetland ecosystem at the watershed-scale.

Shallow open water and marsh wetlands are more numerous in areas that have seen placer mining occur compared to the conditions that existed prior to mining with up to a four-fold increase in open water areas. Over-represented may not be the appropriate term but there will be a different structure and functioning of the watershed with the transformation from bog and fen wetlands to marsh and shallow open water wetlands.

Transformation from one wetland class to another affects wildlife as each wetland class provides different habitat. Some species can use many different wetland classes, such as moose, but others are more dependent on certain wetland classes. Waterfowl and fish, for example, utilize open water and marsh habitats but are less likely to use fens and bogs. Sharp-tailed grouse are common in fens and bogs but do not use shallow open water or marsh. This results in different wildlife communities than what existed prior to placer mining of bogs and fens.

Additionally, plant and insect communities also differ between wetland classes meaning these species will also be impacted by the transformation of bogs and fens to shallow open water and marsh wetlands and those community changes could impact other species up the food chain.

6. Can the utilization, development and conservation of wetlands be achieved using a management approach similar to the DFO watershed authorization model?

Response: DUC is not in a position to provide an answer to this question at this time.

7. How does the cost of reclamation for a placer operation in non-wetland areas compare to the cost of reclamation of wetlands?
 - a. What is the economic impact of reducing mining in wetlands?
 - b. If security is required for a placer undertaking, what information is required to calculate it for reclamation of wetlands?

Response: DUC does not have the necessary expertise to provide feedback on the difference in reclamation costs between upland and wetland areas and the resulting economic impact of not mining in wetlands.

8. Can the use of adaptive management plans mitigate adverse effects to wetlands from placer mining?

Response: If implemented properly, DUC believes adaptive management efforts can help to mitigate adverse effects to wetlands from placer mining. An adaptive management framework includes actions such as creating a plan with an expected outcome or goal, implementing the plan, monitoring progress of the plan, assessing whether the goal was achieved, identifying improvements to the plan that will allow the goal to be achieved, and creating an updated plan with this cycle starting anew.

Implementing a no-net-loss approach will help ensure wetland functions and values remain on the landscape while mitigation measures are developed and improved over time.

9. Indigenous Knowledge (IK) was raised as a source of information to help understand landscape connectivity. Please provide information on how the Board could incorporate IK on an application-by-application basis and when IK should be provided.

Response: DUC fully supports the incorporation of IK into the deliberations of the Board. It is necessary to have IK inform the process on an application by application basis but incorporating IK should also be pursued at a larger scale as well.

Other Supporting Information to the Information Requests includes a Peatland Restoration Guide

6.7 FIRST NATION OF NA-CHO NYAK DUN

Representation Summary

Ms. Ellenise Profeit introduced herself as a member of the Crow Clan and as a Lands Executive Assistant. Chief Simon Mervyn introduced himself as the elected chief of the FNNND. Mr. Mervyn discussed the need to work together to better protect and preserve the waters and wetlands in the traditional territory of the FNNND. He further said that FNNND's traditional territory and the waters within and upon it have been the core of their identity and way of life as an Indian people since time immemorial. The preservation and wellbeing of these waters is our children's birthright, and they must remain clean and healthy so that they can sustain our grandchildren and our grandchildren's grandchildren.

Chief Mervyn indicated that FNNND's Final Agreements promise protection of the water and their way of life. These Agreements also promise that FNNND's cultural and spiritual connection to our traditional territory will not be severed. He also summarized that the spirit and promise of FNNND's Final Agreement must drive every decision made by the Yukon Water Board and by all the co-management bodies in Yukon.

Chief Mervyn indicated that FNNND does not oppose mining and many of their people are employed in the mining industry. FNNND recognizes the need to balance environmental protection with industrial development. Mining in FNNND's Traditional Territory needs to be done in a careful and precautionary way.

Chief Mervyn noted that land use planning is a promise in Chapter 11 of their Final Agreement. FNNND has been asking for the past 25 years for Land Use Planning, and to date there is no regional land use planning for FNNND's traditional territory. He commented that until public governments make good on promises for land use planning and ensure that our people are heard, development on our wetlands needs to be paused. FNNND opposes the authorization of placer mining prior to the conclusion of the required regional land use planning process as promised in the Final Agreement.

Ms. Josee Tremblay, Manager for FNNND's, Land and Resources Department introduced the order of oral speakers as: Elder Jimmy Johnny, Youth Kadrienne Hummel, Elder Frank Patterson, Elder Walter Peter, Elder Elizabeth Moses, and a statement from Elder Evelyn Theriault, to be read by the NND heritage manager and citizen, Teresa Samson. This was followed with a presentation from youth including Geri-Lee Buyck, and Elder Christine Hager. Following these were presentations by Lands Executive Assistant, Ellenise Profeit of the Land and Resources Department and Dr. Robert Patrick regarding land planning in a wetland context, and a final presentation from legal counsel, Nuri Frame.

To ensure that the important points raised by FNNND citizens is accurate the following is taken directly from the Virtual Hearing transcript with no summarization or interpretation.

MR. JOHNNY:

Thank you. (First Nation language – Northern Tutchone). What I said today, to you guys, Water Board Members. My name is Jimmy Johnny. I was born on the river, on Stewart River. I grew up, I grew up down 17 Mile. Travelled all over this area. My parent, my grandma, my grandpa, my sister, my brother. Berries, they got traditional medicine. The wetlands, around the lake area, there is lots and lots of traditional medicines out there. We have to protect them for our future generation. And berries, we have to look after our berries. Boy I don't like that we have to be timed... okay good bye. [END TRANSLATION]

MS. HUMMEL:

Good afternoon, my name is Kadrienne Hummel. I am a youth citizen of the First Nation of Na-Cho Nyak Dun. Masi cho for giving me an opportunity to share some views and stories. First Nation people back then, they lived off the land without fear of losing healthy water, and the land had an abundance of resources. The land was their grocery store. They could harvest materials to make their shelter, harvest food and

transportation. They were taught as long as you cared for this land and took only what you needed, those areas would be there for many years to support future generations. They didn't only think of themselves or what the next 10 years would bring in. They thought of everyone, even Mother Earth. Their hunting and harvesting spots were carried down for centuries to children and their children's children. The kids knew and remembered those traditions by going out with the adults and elders to practise. A lot of this knowledge has been lost today because of colonization and residential schools.

My great-grandmother grew up on the land. They would set up camps for a season, harvest what they needed at the time; and when they noticed the seasons changing, they'd pack up and move camp. They travelled from the Northwest Territories by foot and by dogsled over the Mackenzie Mountains in the wintertime. The wetlands helped them navigate. They lived in a time where the wilderness had an abundance of life's necessities. They stretched moose hides over boat frames made of spruce wood to make canoes. This was all before Lansing's Trading Post was a trading post. They trapped near McQuesten Lake, Rackla River, Ladue Lake and Hanson Lake. My grandmother Kathleen Germain, was born at a lake up the Rackla River, subsequently named Kathleen Lakes.

Being out on the land is empowering for the youth. I know this by experience. Having youth out where they can practice their traditions and culture, they can be proud of who they are and where they came from. It helps to show them how their ancestors survived. It is not only empowering for youth but for everyone. We also have aunties and uncles healing camps out on the land. You can find a profound sense of pride and courage when you provide for yourself as a human.

In order for this to happen, we need the water. We need the plants, and we need the animals to all be healthy and chemical-free so that we can have those supplies in nature whenever needed, and especially the health of the wetlands, since it's like the Britta filter of the land.

It is good to stay as healthy as possible. For a mining industry to go through a wetland, which could add a chemical that would suck out the nutrients from the plants or even take the place of the nutrients. The wetlands are an all-natural filter; but to think of the wetlands as a filter that can clean out man-made chemicals is not right. The earth's land can only take so much before it needs to be rejuvenated, just like when you dissolve salt in a cup of water, the water can only take so much salt until it starts to build up as sediment at the bottom.

Traditional medicines, made from plants, are also affected by absorbing the water and chemicals that may be in it. The medicine may not work like expected or may be turned into another type of chemical, possibly harmful to animals and plants.

I got to participate in the Beaver River watershed canoe trip with CPAWS in 2019. We spent 10 days out on the land, meandering our way back to Mayo from McQuesten Lake. This trip is what showed me how important our Yukon watersheds and wetlands are. Being out on the land has taught me firsthand many things I didn't realize before on how lucky I am to call this back yard my 'traditional territory'. After our first portage at the beginning of Clark Lakes, another youth, Gavin and I, were waiting for the rest of the group. We were sitting on the gunnels of our canoes, eating snacks, and I could feel Gavin about 10 feet away from me, and I could feel every step he took on this big, thick marsh. It was almost like standing on a big mossy trampoline.

I also saw how a small beaver dam is enough to change the whole layout of the wetlands. It changes the way the fish and muskrats swim through the streams. It can also make the water flood the area, leaving the long grass underwater, exposing it to a higher oxygen content, which is good for the aquatic organisms. Going down the stream to one of our next Clark Lakes, you could see bright red salmon berries hanging off the banks. There were small creeks joining in the side of the streams, and even though it was 11:00 p.m. at night and almost dark, you could see the clarity of this crystal blue water, joining in with the stream, coming from Clark Lakes. It was almost like it was reflective.

Here in Mayo, I see many non-local people coming in to hunt. Why? Because we still have this diverse landscape and wetlands that make hunting easy and plentiful. We are lucky to have that last bit of that left. Soon enough, with over-hunting and the local First Nations, we won't have the opportunity to teach our young ones the traditions that have been passed down, and even sooner if we take out the wetlands that the moose rely on. Thank you.

MR. PATTERSON:

Good afternoon to the elders and citizens of Na-Cho Nyak Dun and the other people from the Yukon and also, the Water Board, a lot of familiar faces, good to see you. My name is Frank Patterson, Na-Cho Nyak Dun citizen. This is my grandson, Cole Patterson. He's a Na-Cho Nyak Dun citizen, also.

I'd like to speak in regards to some wetlands policy and stuff, but the mining policies, we're over 100 years old; and if we're going to make it happen the right way, we need to get together – all of us – at workshops and stuff and work on this policies and procedures and stuff for the water licences. It's very important to us, near and dear to our heart.

Thanks Tr'ondëk Hwëch'in for presenting yesterday, because it's near and dear to my heart. They say there's 58.6 percent wetlands in the Yukon, and there's 0.56 placer claims, and that tells me why our wetlands are doing their job. It's been kept very healthy; not down south from us, but up here in this area and north of us, you know, there's a lot of destruction happening, which we don't care for, but it's not being done right. We'd like to see that happen. Traditional uses of wetlands: We use them for the animals to heal after they've done their mating through the season, and they go back to the wetlands before they go up the hills, and they go there, and they eat the minerals and everything else that they need in the plants and the medicines and everything else, and they heal; and then, they go back up on the hills.

Also, for our waterfowl, they come here, and they molt, and they come to the wetlands, and they take all summer, and they molt and they nest and have young ones, and then, they fly back south. Also, the medicine, which Jimmy talked about and touched base on is very important to us. And we're practising a lot of medicines in our fields right now. We're teaching the young people our medicine challenges, and also, it's an education factor that's involved. We go to the school. We have classes for them. We talk to them about healing with traditional medicines. Some day we're going to have to turn to that. Cultural values of wetlands right now: water quality and quantity. We need to keep our water clean. It prevents placer flooding, the wetlands. It's like a big sponge. Anything that comes along, it soaks it up, and it creates moss from not being affected by the floods and stuff. And medicines, again our cultural values and our food and water and our education, as I've mentioned.

Current uses of the wetlands: We have many waterfowl. They come together in a clean and healthy wetlands, where they do their nesting, and then, they go away. Also, our fish, our fish come and congregate in the wetlands, and they feed off all the bugs that are born and raised in that wetland. That's their nourishment and their health and their minerals in the water. Other personal experiences in the wetlands, other types of wetlands; you know, there are different types of wetlands. There's bogs, swamps, marshes and others that we also have to learn about; because the things that I'm talking about are things that were passed down to me by my elders. Robert Hager, Johnson Peter, Tommy Moses and so on and so forth, I mention a few names; God bless their souls. They've moved to the spirit world, but they were able to pass it on to the generations below them. Thank god for that.

So, a lot of people see the wetlands as wasted space. We don't see that as wasted space. Those wetlands mean a lot to us for medicines and clean water and also, when the pollution comes along, that wetland will take care of that pollution. The rain that brings pollution with it, all that kind of stuff, you know, it really benefits us in the wetlands. So, scientific methods, you know, we're fine and dandy. We'd love to learn that. We need our young people to learn that, but one thing we're missing and everybody else is missing in the

picture is traditional knowledge, and that's what we have to get together for and make sure that the whole world knows about traditional knowledge when they're being taught in school.

So, with that, I really want to be thank the Water Board for hearing what I have to say about wetlands, and I have a lot more, but just no time. I'm timed. Six minutes is done, masi cho.

MR. PETER:

Good afternoon, my name is Walter Peter, Na-Cho Nyak Dun. Being born and raised here in Mayo. I will bring the history of our people back to you people. Ever since I was a boy, a little boy, some places I recall. All the people used to trap up through the wetland up north with dog teams. It's called 'the old village' down here. Every household move up there every spring, April to May 25, and then, they come back down. They do that to harvest what they need: moose, they make dry meat and skin it; ducks, they hunt maybe just for a few days, then they let it go. They don't bother it no more, because they're laying eggs. And muskrat, beaver, all that they harvest, just to make some money to buy in the store, to live. Over a month, they only take what they need. That's how they control their games.

What my dad told me when I was very young the water, it's alive. It's a living thing. Everything out there is a living thing. They're spiritual. You have to respect everything you do. You do not disturb the wetlands. Leave it as it is. Take what you need, but don't disturb. Just leave it be. You come back, there be something you want, you get it. That wetlands has been put there for a purpose, for use by all the animals in the forest, to use, he tell me. That's how our teaching went ever since we were small.

Through stories, they tell us the history, and the old peoples, I think they know better than scientists today. They know what's going to happen. They know what they're talking about. They know what to do if something happens. They're very good. They even know the future, what's coming. They'll tell you to be prepared. All this we've been taught. The water is most important. It's a strong thing that gives life from Mother Earth to everything, plants, for us to be alive today, for all the animals to use to drink and to use, all the plants in the marsh, the animals use to heal themselves; and we eat the animals so we can be healthy from the plants they eat, because that goes into them, and then, it goes into us. That's how it goes. I can go on and on, but it's more better I just... Is that okay? Good day.

MS. TREMBLAY:

Thank you, Walter. Mr. Chair, now we will have a testimony from Elizabeth Moses out of the Whitehorse room. Thank you, Elizabeth.

MS. MOSES:

Thank you, Josee. I'd like to thank my colleagues of Na-Cho Nyak Dun for taking the opportunity to speak to the Water Board. I would also like to thank TH, Tr'ondëk Hwëch'in, for taking the initiative to speak to the Water Board on the importance of the wetlands.

I'd like to start in bringing the ancestors into my talk. I'd like to acknowledge my grandparents, John Martin and Bella Martin, who travelled over the mountain this way in a moose skin boat. I'd also like to thank my grandmother on my dad's side. I'd like to thank Grandmother Water. I know Grandmother Water to be staying at one of the four sacred cardinal directions. Grandmother Water is important for us to live, as important as the air, as important as the sun, and that these entities work together to provide Mother Earth and all of creation – the four-legged ones, the thin ones, the winged ones, the crawly ones, which is most predominant on the wetlands. As we heard from the other presenters, the importance of the wetlands and glaciers and the moss. They, too. work together.

The river in the Yukon, which goes out into the great ocean is also present in the sky. We have a river sky, and the cycle of life that the water produces worldwide brings life to all peoples all over the world, and we have to work together and respect each other to continue life as we know it. It is crucial at this time to realize that disease affects all of us, and we must protect the kidneys of Mother Earth. As one of the

presenters said: The kidneys of Mother Earth are the wetlands. We protect also other parts of the natural world, and I want to be say that I was very inspired to read from Matthew Coon Kome's life and what he said to his son was one of the greatest things that the ancestors left behind was to leave nature, as they saw it; and that's one of the greatest legacies that we see with our own ancestors in the area of Na-Cho Nyak Dun and the Yukon, and we talk about it often, leaving something for the future, leaving it as we see it, as we saw it, as our ancestors saw it. Shalikut to all my relations.

MS. SAMSON:

I am reading a presentation on behalf of Evelyn Theriault: I am a Na-Cho Nyak Dun elder, who is very concerned about what I am seeing happening in our beautiful traditional territory. More so within the last couple of years, I have noticed increasing destruction happening, resulting in the loss of habitat, wetlands hunting and harvesting areas. One of my personal principal losses is the peaceful wetlands that ran along the roadways towards Minto Lake. Now it is all dug up for miles with heavy equipment in their continuing to destroy more and more of these wetlands. The wetland is now non-existent, and we will never get it back. My family and I went hunting and on every road that we took, it had an active mine. With new roads being built seemingly everywhere, leaving mounds of gravel everywhere, looking like Dawson's dredge piles. It looks like a war zone with most of the boreal forest gone. The boreal forest is the key ball player in tackling climate change, which is the habitat for wildlife and birds. The vegetation is gone, and the destruction of root systems leaves us with nothing left to control erosion.

It seems as though mining companies are staking claims on lands they do not intend to mine, which will give them the ability to punch roads into their intended mining area with little or no consideration of the preservation of the environment. There are many mining claim down the length of both sides of Mayo Lake, with Duloc Mining 10 kilometers from the Roop, which is the wetlands for white fish, grayling and pike and is also a calving area for moose. It is home to many birds and many species of wildlife. Continuous claims, with an active mine from Davidson's Bridge all the way down to the Nelson Arm of Mayo Lake. South McQuesten Road has mining claims starting at the Silver Trail Highway all the way to Victoria Gold. Duncan Creek is another active mining area. We desperately need a moratorium to any further mining claims and a signed agreement from the Government to limit the damage these miners inflict. One way is to introduce an enforcement of a damage deposit when applying for a water licence and limitations to how many claims can be staked.

All too often, there are shacks and debris left behind. It is time-consuming and added cost for the miners to take out when a mine is abandoned. Mining companies need to be held accountable and responsible for cleaning up their mess, whether it be chemical contamination and/or physical debris. Just look at what happened at Victoria Gold with the two major spills and countless other issues. How much cyanide from the leach pit has found its way to the groundwater or any other surface bodies of water? It recalls the Colorado Summitville Mine disaster in the 1980s, which has caused extreme environmental damage and to this day is costing a forever bill of 2 million dollars a year.

When the final and self-government agreements were signed, it was with the understanding that the Yukon Government and the First Nations would become partners in managing land and resources. First Nations need to be recognized as a viable partner by the Yukon Government. Failure to include First Nations as partners has enticed mining companies to continue to stake mineral claims wherever they wish. Mining takes precedence when it comes to Yukon Government. It should not be this way. The mining act is 100 years old and needs to be revised collaboratively with First Nations. There desperately needs to be collaboration between all parties.

Years ago, Granite Creek began as a mom and pop placer mine but now has been taken over by a company that has grown to a huge mine. It appears that they are now intending to include an area near a major watershed, the Mayo Lake region, which will be devastating for Na-Cho Nyak Dun citizens, as Mayo lake is

essential for hunting, fishing and trapping. Continued mining activity does infringe on our aboriginal rights by breaching our ability to perform our inherent and traditional and cultural practices. These are but a few of the grievances I have regarding mining. Elder Evelyn Profeit Theriault, thank you.

MS. BUYCK:

Hi, my name is Geri-Lee Buyck, and I am a First Nation of Na-Cho Nyak Dun citizen; and I really want to say how grateful I am for my First Nation and Tr'ondëk Hwëch'in and all those others who have spoken before me. It's been very insightful, and again, I am very grateful for you sharing your experiences and your feelings on this.

I wish I could echo all of what you said, as I totally agree with it, but there isn't that much time. I also want to say how happy and proud I am to see little Cole Patterson sitting there and listening on this. This is so important.

I feel that there are different versions to how people describe what they mean by being in nature and what it means to be a Yukoner and a part of the land, and everyone can be entitled to those experiences. I, for one, though, see those differences as one being my future and offering what the land can give to you and others that are doing it in a way that is causing more harm than good ultimately; and I want to... Sorry this is hard to speak about when it's so near and dear to your heart. It doesn't seem like those may understand what we're trying to express, like, what we're losing when detrimental destruction takes place on wetlands that so many depend on. And that's why I believe that – and I'm sorry, and I do empathize when people say that the process seems too long, or they want it cut back, because it's too much. However, though, this is so important for us to move forward and for us to ensure that we're leaving something in good standing for our future generations, mine and yours. And that is why I applaud those that are taking this time, and I hope that will ensure that our voices are included along the way, because we had leaders and elders, many who have already passed and some that are still here, who have worked so hard to achieve our final agreements, because I believe that they were really strong, forward thinkers and wanted to ensure that we are all working together in a good way for ourselves and for our children.

So, I really hope that the way that exploration takes place now and the way it happens, compared to the way it happened 50-to-100 years ago, I think it's not quite the same at all. I think now there are bigger machines, and it gets the job done faster, and in that way, it can cause a lot more accidents that are irreversible and that causes us to react to it, those that are on the land, those that are in the communities and depend on the health and wellbeing of the water and animals and the medicines.

And as Elder Walter Peters had said, the water does have a spirit, and that is something that I've felt ever since I've become empowered through the land, through the Peel, through the Beaver River; and I really believe that that needs to continue to be there for our young people, because that is where we are reconnecting, and that is where we are going to empower our youth to become strong once again; because that was taken away from us, and that has taken a long time for us to try and regain.

So, I hope that moving forward, that the Board and all those working on this on the other side, this requires a lot of thoughtfulness and forward-thinking once again and a lot of heart, because we are also grateful and proud to be from the Yukon, because of what it gives back; but we need to ensure that our policies are strong and that it's upholding again the wellbeing and spirit of the water and land over gold when it is absolutely necessary, too. And I hope that our Yukon First Nation representatives, through this process, will be at the table and please be always mindful of our agreements and taking the time to understand how those play a strong influence for you and I, our loved ones and our future children. Masi cho, I plan on writing to the Board, as well, as again, there isn't too much time; but thank you so much for listening.

MS. HAGER:

Good afternoon, my name is Christine Hager. I'm an elder of the First Nation of Na-Cho Nyak Dun. My parents were Jenny and Frank Germain, and my late husband, former chief of Na-Cho Nyak Dun, Robert

Hager. I was born in the old Village of Mayo and was raised on my father's trapline, which was Tyerson Range at Trapline 83. My parents and relatives lived and worked together on a trapline, which was on the northeast of Keno and Elsa, practising our traditional lifestyle of hunting, fishing and harvesting. We travelled onto Hanson Lake, McQuesten Lake and Ladue Lake, right through to the headwaters of Spirit River. There are many wetlands in these areas, which is being disturbed by the mining. Keno Hill and Calumet was one of them that disturbed the water.

I have land from my ancestors and my husband, and I try to pass the knowledge of the traditional medicine, which came from the wetlands. Our family established our fish camp in 1980 along the Stewart River, and in the recent years, it became surrounded by mining activities. Today and now, we cannot swim or drink the water anymore. This is why I spoke today. I believe the wetlands is important to our future young generation and about protecting the water.

Wetlands were important to us and animals and birds and beavers. Any animal on the land was important to us and for you. We have seen a lot of changes on the land, water and plants and animals. We need to protect the wetlands for our future generation and vision for our generation. We have to learn and teach and learn from each other and work together with trust. Masi cho, thank you. And these are our generations here. This one here is the future generation in him, too, and he's a Na-Cho Nyak Dun, and he's the community at large. I don't know if they have something to say.

Mr. Cole Patterson:

I am Cole Patterson. I am a citizen of Na-Cho Nyak Dun, and keep the water clean so we can go hunting with our grandparents and parents. Thank you.

Isaac:

My name is Isaac. Please protect the water. Water is life, and please keep it healthy until the future generations. Masi cho.

MS. ELLEISE PROFEIT

Ms. Elleise Profeit introduced herself as a member of the Crow Clan and is the Lands Executive Assistant in the Lands and Resources Department. Ms. Profeit made the presentation on behalf of FNNND's Lands and Resources Department.

She described that her presentation was meant to build on the testimonies heard by FNNND Citizens and to identify their understanding of wetlands and provide some context to the Board in considering steps forward that allow for the respect and necessary co-management of these vital habitats.

She described that wetlands contribute special ecological functions and values. They accumulate carbon, moderate water run-off, recharge groundwater, provide flood control, sediment trapping, and nitrification. They have disproportionate value to fish and wildlife and provide important cultural and spiritual needs. The identification of wetland travel routes and traditionally used areas by FNNND citizens indicate that wetland complexes and the interconnectivity of wetlands forms a pivotal basis for how people interact with and manage lands and waters under their stewardship.

The incorporation of FNNND's understanding of landscape connectivity and a holistic perspective of wetland management is paramount to further establishing ecologically appropriate thresholds of disturbance and socially acceptable standards for reclamation. Such thresholds are absolutely necessary before any future development in wetlands can be contemplated at this time.

Ms. Profeit presented the FNNND Lands and Resources Act (2011) with the following objectives:

- To integrate the management of all Resources owned, controlled or co-managed by the FNNND.
- To preserve and enhance those aspects of our culture, identity and values that are related to land and Resources.

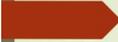
- To honour our harvesting and management customs, taking into account the knowledge and experience of our Citizens.
- To protect and preserve those sites, of whatever nature and wherever located, which have spiritual or cultural significance to use.
- To protect, preserve, monitor and manage all waters flowing or found within, through, on, or adjacent to Settlement Land to such standards of quantity, quality and rate of flow as we require for our purposes and for the enhancement of all water-related aspects of the ecosystem.

Ms. Profeit described the impact of placer mining and other activities in the Granite Creek area within the Mayo Lake and Mayo River drainage. Ms. Profeit provided a classification and definition of wetlands or “wet area” on Northern Tutchone in the slide below.

Nan dātsaw
– Wetland, or “wet area” in Northern Tutchone

- Wetland Definition and Classification
 - *“There’s traditional medicine in just about every wetland. Around the lakes, there’s birds, there’s trees, there’s roots. And there’s a lot of pitch on the trees. That’s our traditional medicine. And you know how I talk about traditional medicine? We got to identify where we camp, where the trail is, and it’s a huge area where we have traveled. You know?” Elder JJ*
 - *“...it kind of means mostly where there’s water and whether it’s lake or creek, animals primarily live, they need water to survive. I think a lot of animals live off the food source in the water, that’s like fish and muskrats and beaver, etc... bugs. I think people have different definitions of wetlands, I think wetlands... water is a pretty big source of wetlands, what creates it.” Citizen DN*

Ms. Profeit provided the following recommendations in her presentation.



Recommendations:

- Detailed wetlands mapping and classification
- Identification of conservation areas/key wetlands to be set aside with full protection from development
- Development of ecological and socio-cultural disturbance thresholds which incorporate First Nation understanding of landscape connectivity and a holistic approach to wetland management
- Development of ecologically and socially acceptable standards of reclamation
- No further disturbance of wetlands until adequate planning and above measures are complete



Recommendations:

- Comprehensive wetland mapping and classification
- Integrated modelling of benefits and relationships of wetlands to landscape scale processes
- Adequate regional planning which develops regional disturbance thresholds (ecological and socio-cultural) based on available scientific and traditional knowledge
- Watershed-level cumulative impact studies
- Identification of conservation areas and wetlands set aside for full protection from development

Cumulative effects on wetland habitats as identified by NND citizens

- Climate change:
 - Creeks, lakes and wetland areas drying up
 - Observed changes in animal abundance and migration
 - Melting + mining impacts on permafrost contribution to regional/global carbon emissions
- Legacy of mining:
 - Over a century of hard rock mining impacts on water quality degradation
 - Associated large-scale logging to support mine operations
 - Commercial fish and wildlife harvesting and depletion to support mine operations
 - Continued placer mining (including Mayo River Drainage, McQuesten mainstem and tributaries, and Clear Creek to name a few)
- Hydroelectric power generation:
 - Compounding influences of altered lake and river levels on vital wetlands

Summary of Recommendations:

- No further disturbance of wetlands until adequate planning and associated developments are completed
- Detailed wetlands mapping and classification
- Development of ecological and socio-cultural disturbance thresholds which incorporate First Nation understanding of landscape connectivity and a holistic approach to wetland management
- Development of ecologically and socially acceptable standards of reclamation
- Integrated modeling of benefits and relationships of wetlands to landscape-scale processes
- Watershed-level cumulative impact studies
- Cumulative impact studies and modeling must incorporate climate change predictions and indicators
- Identification of conservation areas and wetlands set aside for full protection from development
- Planning and threshold determination should incorporate temporal and geographic spacing of projects
- Financial and practical compensation for climate impacts and carbon release integrated in regional permitting approaches, license terms and conditions, security costing and reclamation goals and standards

Summary of Slides

- Detailed wetlands mapping and classification is required.
- Identification of conservation areas and key wetlands to be set aside with full protection from development.
- Development of ecological and socio-cultural disturbance thresholds which incorporates First Nations understanding of land connectivity and a holistic approach to wetlands management is required.
- Development of ecologically and socially acceptable standards of reclamation is required.
- No further disturbance of wetlands until adequate planning and above measures are complete.
- Watershed level cumulative effects impact studies are also required.
- There is a need for financial and practical compensation for climate impacts and carbon release integrated into regional permitting approaches, licence terms and conditions, security costing and reclamations goals and standards.

DR. ROBERT PATRICK

Dr. Patrick introduced himself as a registered professional planner and a member of the Canadian Institute of Planners. His PhD was in drinking water protection at the University of Guelph, and he currently teaches at the University of Saskatchewan in the Department of Geography and Planning. His presentation covered

the United Nations Sustainable Development Goals, wetland function versus wetland values, and indigenous planning.

Dr. Patrick summarized the function and value of wetlands in the following slides.

Function of Wetlands

- **Water filtration.** Turbidity/sediment control; **safe drinking water**; uptake contaminants; filter bacteria
- **Water storage.** Wetlands function like natural tubs or sponges, flood protection, human safety, erosion control
- **Biological productivity.** Wetlands are some of the most biologically productive natural ecosystems in the world; fish habitat, berries, medicines
- **Carbon Storage.** Moderate global climate conditions

Value of Wetlands

- Avoidance of flood damage; erosion control
- Drinking water purification
- Carbon sequestration
- Eco-tourism, hunting, fishing, trekking, paddling
- Ecological services, food chain, habitat
- Human health and wellness, traditional foods, medicine, drinkable water
- Indigenous cultural, spiritual services, place-making
- Indigenous Ways of Knowing (ancestral, 7 generations model)

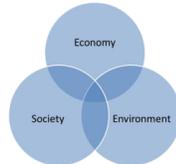
Summary of Slides

- Function of wetlands includes water filtration, water storage, biological productivity and carbon storage.
- Value of wetlands includes avoidance of flood damage, provides erosion control, carbon sequestration, eco-tourism, hunting, fishing, ecological functions, human health and wellness, traditional foods, medicine, drinkable water, indigenous cultural and spiritual services and indigenous ways of knowing.

Dr. Patrick also summarized the path forward for wetlands management as shown in the slide below.

A responsible (water sustainability) path forward ...

- Commence Regional Planning immediately to determine conservation targets, assess land vulnerability, incorporate Indigenous planning principles and practice;
- No new placer mining licenses pending outcome Regional Land Use Plan;
- No new placer mining licenses pending revised and rewritten mine permit process that engages First Nations of the region and prioritizes water sustainability;
- Any future placer mining licenses to follow established law respecting Free, Prior and Informed Consent with regional First Nations 'rightsholders'
- Explore addition of Indigenous Protected and Conserved Areas in the Yukon.



The work ahead ... an opportunity to advance **Parallel Planning**

Indigenous, traditional knowledge and Western Science

Summary of Slide

- A responsible path forward includes commencing regional planning immediately to determine conservation targets, assess vulnerability and incorporate indigenous planning principles and practice.
- No new placer mining licences pending outcome of Regional Land Use Planning.
- No new placer mining licences pending revised and rewritten mine permit process that engages First Nations.
- Any future placer mining licences to follow established law respecting Free, Prior and Informed Consent with First Nations "rights holders."
- Explore addition of Indigenous Protected and Conserved Areas in Yukon.

MR. NURI FRAME

The next presentation was by Mr. Nuri Frame, FNNND legal counsel. Mr. Frame summarized the message by citizen Cole Patterson who said, "Protect the water. Keep it clean and ensure he's able to be on the land and go hunting with his grandfather and his father."

Mr. Frame acknowledged that the Board had posed specific questions for the Virtual Hearing and was asking feedback from the Parties. He summarized that the Parties, especially TH, have indicated that these issues can't be divorced from their context, that wetlands must be understood and must be protected as part of a holistic integrated whole as part of an ecosystem. FNNND is not avoiding the questions but are trying to answer the questions in the way that we think they need to be answered. From FNNND's perspective, the analysis that the Board is undertaking has to be fully mindful and with deep appreciation of the treaty relationship that the indigenous peoples of the Yukon have with their treaty partners within their traditional territories.

He summarized that FNNND is deeply concerned that continuing to authorize placer mining in wetlands in their traditional territory on a project-by-project or application-by-application basis risks missing the forest for the trees.

He also summarized FNNND has 2 principles that frame and support any question about if and when a project should be licenced. The first is how does that decision fit within the treaty context, and second, is the decision being made in a precautionary way. Every placer authorization must be mindful of and take the full measure of the importance of the treaty relationship and of the spirit and intent of the final agreements. There are also broader and long-term interests and being respectful of the fact that knowledge gaps need to be acknowledged and that sometimes the right thing to do is to do nothing.

Mr. Frame also asked the Board to take note of the commitments in Chapter 11 of the Final Agreement, the commitments with respect to land use planning and regional land use planning. The objectives in Chapter 11 notes that the purpose is to recognize and promote the cultural values of Yukon Indian people. Chapter 11 further indicates that the purpose includes the utilization of the knowledge and experience of Yukon Indian people in order to achieve effective land use planning, and to ensure that social, cultural, economic and environmental policies are applied to the management, protection and use of land and water resources in an integrated and coordinated manner so as to ensure sustainable development.

He summarized that these principles are not being honoured in FNNND's traditional territory. No regional land use planning process has started. FNNND is of the view, that to continue authorizing placer mining in wetland areas in the absence of land use planning and in the absence of the knowledge collection that's necessary to inform sound and precautionary decisions, then this Board should take advantage of the authority that it has and decline to authorize any further placer mining in wetlands.

Mr. Frame indicated that it is incumbent on the Board to look into the final agreements and the Constitution of Canada and to recognize FNNND's treaty rights. This essentially makes it impossible for the Board to issue authorizations for placer mining in wetlands in a way that is consistent both the spirit and intent of FNNND's Final Agreement.

Mr. Frame summarized his presentation by reiterating that FNNND is asking the Board not to issue any licences and "to take a pause". FNNND is asking for the pause in placer mining approvals to avoid any fundamental and irreparable damage to their traditional territory and to the rights and interests of the citizens of FNNND.

Board Questions

BOARD MEMBER: MR. WARNSBY

Thank you very much, Mr. Chair. I'd like to thank the elders and citizens and youth, who gave some strong points. It was good to hear that, but I'd like to ask a quick question: Would it be possible to look at some of these principles of indigenous planning if the Board ultimately decides that due to statute of limitations or whatever conditions are on the Board to continue to licence individual projects, absent regional land use planning, thanks.

RESPONSE: MR. FRAME

Sure, I'm happy to make a couple of comments on that, and then, to open it up to any members of the NND Lands Department, who might also want to weigh in. I think we recognize that the Board is – to some extent – between a rock and a hard place; and we recognize that the absence of regional land use planning is certainly not a situation of the Board's making, and we recognize that decisions made by public government in the 25 years since the final agreement came into effect are not decisions that were made by this Board and that the Board needs to deal with the world as it finds it, and it needs to find a way to do its job in that context.

So, I guess – from my perspective - it's a double-barreled analysis. The first is what I was speaking about previously, which is that in every instance currently, it is our view that the Board should be taking a pause, but if a pause is not possible in the context of a particular application for reasons of statutes of limitations or other pressures, I think there's been a lot of good insights that we've heard today, and I'd direct the Board to the summary of recommendations at the conclusion of the Lands Department's presentation, where there are the kinds of precautionary or mitigation tools that could be implemented if a decision has to be made to allow a licence to go forward, again notwithstanding our view that that shouldn't be happening in the absence of those underlying treaty obligations being fulfilled.

BOARD MEMBER: MR. WARNSBY:

Thank you.

SPEAKER:

Mr. Chair, Chief Mervyn had a comment that he wanted to make if you don't mind.

BOARD: CHAIR, MR. MCDONALD

Not at all.

RESPONSE: CHIEF MERVYN

You know, I know that Nuri did a good presentation on our behalf, but we are continually perplexed and confused and frustrated in the fact that, you know, the Board has the wherewithal to give the final decision to any operations in regards to a water licence; but the fact still remains that we are proceeding with the mining issues without regards to the fact that the Placer Mining Act and the Quartz Mining Act is not in compliance with our agreements.

You know, it's continually frustrating to see, and we know these issues; but we're continually being drawn to the fact that we may have to take a step further on our behalf in regards to future sovereignty in our land.

So, it's just a comment. I know – like Nuri said – the Water Board is caught between a rock and a hard place. We totally acknowledge that, because over the past 25 years after a succession of many different levels of government, different mind sets, and here we are, still in the same place, with our land being disrupted and our wetlands being devastated.

I use that word loosely, because I know that there was an example right here in town of the wetlands being altered, topsoil being taken off our lands where we live up on the bench here and placed down on the wetlands, which we know is a community source of water.

That's another issue, but it's just so frustrating to us, and we know. I take myself back 60, 70 years – I'm an old man now – when the old-timers used to tell us: Why are you building there? There's permafrost there. I used to fish grayling right along in the two streams that run right through the middle of the town. So, that was wetlands, surfacing the delta from the big island. But the assumption of the community here is that it's insignificant, but to us, it means a lot, because altering the natural flow of the wetlands itself, the contaminants are going into our drinking water. So, are we being told the truth about the cleanliness of the water?

So, it's just a comment from our nation that we have huge issues in regards to the presentations that were made today by our elders and our youth. The concern is clear; and again, I know that the Water Board is in a tough position, but we need land use planning, which will fix all these issues. We need it desperately. Anyway, just a comment, thank you for your time. Masi cho.

BOARD: CHAIR, MR. MCDONALD

Thank you very much, Chief Mervyn, for those final comments, summary comments. We will certainly be taking all of the comments made - take great care in weighing them, and thank you for the insights. It's much appreciated.

Closing Remarks

Mr. Nuri Frame opened the closing remarks by asking a First Nation youth, Josh Austin-Samson, to say a few words. The following is taken directly from the Virtual Hearing Transcript.

JOSH AUSTIN-SAMSON:

Good afternoon, my name is Josh Austin, and I'm an 18-year-old First Nation of Na-Cho Nyak Dun First Nation. I have heard various representatives about how important it is to protect wetlands because they give life to all living things. A human is comprised of 80 percent water. An animal is 75 percent water on maturity and 90 percent when it is newborn. Destruction or improperly-planned use around wetland areas can lead ultimately to the detriment of all living things.

Yukon Conservation Society spoke about the fact that wetland destruction should be avoided at all costs. It can take up to upwards of 50 years to regenerate, and it will never be the same as it once was. Wetland studies need to come first, and they need to be comprehensive, which includes documentation from all of Yukon.

Wetlands are habitats that have evolved together over millions of years, resulting in communities where they all make a living and contribute different values to the continuing health of their specific habitat. These are extremely interconnected ecosystems. Therefore, site specific reclamation will not take into consideration the interconnectedness.

Yukon Government said that a reclamation plan must be drafted by proponents for on or around wetlands. I suggest that these plans be co-developed by a proponent and affected First Nations to be consistent with the final agreements in striving towards co-management. Continued mining activity without holistic co-management perpetuates further destruction of water, land and habitats. That has a direct impact on First Nations' connection to the land.

We have heard from Klondike Placer Miners' Association that states that they are just pick-and-shovel operations, who have an interest in being on the land with their families. However that is a clear indication that they I don't have the money to create reclamation plans in excess of millions of dollars. Economic wealth should not supersede inherent rights to practice traditional lifestyles, which are protected in the constitution. There are no thresholds that can be established that permits further destruction of cultural lifestyles. We need to ensure that we move forward in unity by establishing land use plans that take all parties' needs into consideration.

Mr. Frame thanked the Board for taking the initiative to hold the Virtual Hearing in the public interest. He summarized this is an issue of the utmost importance to people, indigenous and non-indigenous alike throughout the Yukon. Mr. Frame acknowledged the contributions of FNNND elders, youth and other citizens who spoke at the hearing. He urged the Board to be mindful of the knowledge and the experience of the people who have lived upon and thrived upon the land, not just for three or four generations, but for hundreds and thousands of generations.

Mr. Frame summarized the balancing exercise of considering whether or not to authorize placer mining in pristine wetlands. The Board needs to consider not just the fact that there are divergent views and perspectives, but also, the weight and the gravity of those divergent views. He urged the Board to take full account of the interests that are being brought forward by considering the potential ecological damage that's not only irreparable but has consequences that are entirely unknown. During this Virtual Hearing there has been deep concern from the VGG, FNNND, TH and LFN. The concern that invaluable and irreplaceable repositories of culture will be forever lost and that the connection between the land and the people could be fundamentally impaired and perhaps even severed. During the Virtual Hearing the Board also heard that an entire way of life, already imperiled by more than a century of mining and other developments, is at risk of being lost entirely and that the birthright of future generations could disappear.

Mr. Frame summarized that the Board undertakes a balancing exercise but must be mindful of the fact that the promises of the treaty have not yet been fulfilled. The promise of land use planning in Chapter 11 has not yet happened for the FNNND.

Mr. Frame also discussed the economic value of wetlands as a source of harvesting, recreation and tourism, a place for collecting medicines, a repository of stored carbon and a bulwark against the economic impacts of anthropogenic climate change. He also discussed the economic costs of managing placer mining by YG, co-management boards and First Nations.

Ecologically stable, pristine wetlands provide economic value to the Yukon in perpetuity. He urged the Board to recognize that ecological and cultural interests have tremendous economic value for Yukoners today and for Yukoners for generations to come.

He summarized that the need for land use planning is not simply a treaty commitment but also a tool for certainty for all those involved in the issue of placer mining and wetlands. Chief Mervyn articulated that we need to take a pause, that we're all on a treadmill right now. The placer miners are on a treadmill. Indigenous governments are on a treadmill. The Board is on a treadmill. We're on a treadmill of application-by-application-by-application, without sufficient consideration of the broader context, without the necessary information in place, without the underlying land use planning being done, without the treaty commitments being fulfilled. It's a treadmill, and we need to get off of it.

Mr. Frame urged the Board to take a pause and use its authority not to grant further licences for placer mining in wetlands in the Yukon until the underlying work has been done, until the information has been collected and until the land use plans have been completed and allow the objectives of Chapter 11 of the FNNND agreement to be fulfilled.

Additional Intervention Information

Written Submission from FNNND, December 14, 2020.

This written submission included the following broad areas:

- The Constitutional Framework that binds the Board.
- Necessary Precautions for Authorizing Placer Mining in Wetlands
- Responses to Board Questions.
- Recommendations and Conclusions.

The following points summarize this written submission:

- FNNND's constitutionally protected rights require the Board's strict adherence to the Final Agreement, in a purposive manner that satisfies the honour of the Crown and ensures that both the letter and the spirit and intent of the Final Agreement are fulfilled.
- This constitutional imperative supersedes any other interests the Board may consider in making decisions regarding placer mining applications.
- The constitutional framework within which the Board operates, as well as the need for the Board to proceed in a precautionary way being well informed about the potential impacts of any authorization it might issue, requires that the Board only permit placer mining in wetlands once an effective management framework is in place.
- Such a framework must include the completion of regional land use planning processes, the implementation of co-management and co-governance with First Nations, sufficient information gathering, and effective reclamation measures.
- FNNND submits that there are three necessary preconditions that must be satisfied before the Board can be confident it has obtained sufficient information to make decisions on placer mining applications in wetlands: 1. meaningful consideration of Traditional Knowledge of wetlands functions and benefits; 2. clear understanding of the effects of placer mining in wetlands; and 3. a full understanding of the challenges of wetlands reclamation. Only once these three crucial areas are understood can the Board's three questions be addressed.
- Accordingly, FNNND urged the Board to take a pause on issuing licences for placer mining in wetlands, a holding pattern that will honour the Final Agreements and Aboriginal and treaty rights are respected and protected before further development proceeds.
- FNNND's Final Agreement is a modern treaty, constitutionally protected under section 35 of the Constitution Act, 1982. Like all modern treaties, the objective of the Final Agreement is to advance reconciliation and establish a new "healthy and mutually beneficial relationship" between Indigenous and non-Indigenous peoples.

- One of the principal objectives of FNNND's Final Agreement is to ensure that the citizens of the First Nation are true decision makers and co-managers with respect to if, and how, industrial development will take place in their Traditional Territory.
- The critical importance of FNNND's role as co-manager and joint decision maker with respect to industrial development in their Traditional Territory is interwoven throughout the Final Agreement including Chapter 10 (Special Management Areas), Chapter 11 (Land Use Planning), Chapter 12 (Development Assessment) and Chapter 14 (Water Management).
- It is a central theme that serves as a foundational pillar of the modern treaty relationship and upholding and affirming FNNND's role as a co-manager and joint decision maker is a constitutional imperative for all governments and institutions of public governance, including the Board.
- The Board has both the authority and the constitutional duty to ensure that its responsibilities are carried out in a manner that is consistent with and upholds FNNND's Aboriginal and treaty rights.
- The Board is constitutionally mandated to uphold the single objective of Chapter 14 of the Final Agreement: "to maintain the Water of the Yukon in a natural condition while providing for its sustainable use."
- The Board must uphold this overriding objective by protecting wetlands in our Traditional Territory and ensuring that the ecological and cultural values of wetlands are not undermined.
- Biologically productive wetland habitats formed a central part of large travel routes, land use patterns, harvesting practices, culturally vital locations, meeting places, and places of spiritual importance. The concentration of identified First Nations' values within and around wetlands, wetland complexes, and interconnected river corridors supporting wetlands is no coincidence.
- Continued placer mining in wetlands, in the absence of land use planning and an effective management structure, undermines FNNND's ability to perform traditional cultural practices, and ultimately to protect their Traditional Territory for ourselves, our grandchildren, and our grandchildren's grandchildren. The Board must ensure FNNND's legacies, carefully preserved by our ancestors and entrusted to us, are maintained for our future generations.
- The Supreme Court of Canada has held that it follows from this authority and duty that administrative decision makers have the jurisdiction to consider whether the Crown has adequately discharged its constitutional obligations in relation to matters properly before it. In this way, the Board has a constitutional duty to evaluate and consider whether YG has adequately upheld its constitutional obligations to FNNND when deliberating applications before it.
- Continuing to permit placer mining in wetlands in the absence of regional land use planning is a rejection of the spirit and intent of Chapter 11 would irreparably alter FNNND's Traditional Territory in a way that undermines future land use planning and thus the entire Final Agreement.
- Traditional Knowledge is sorely absent from Yukon's current management framework. The current framework is siloed and limited to considering one project at a time, without considering the holistic, cumulative impact that each project has on our Traditional Territory as a whole. As the current framework stands, Traditional Knowledge has not been and cannot be adequately considered on an application-by-application basis.
- Water and water protection are paramount in considering the values of wetlands. The benefits accrued by connecting countless generations to vital and healthy waterways are, in turn, reciprocated by the traditional Northern Tutchone laws and cultural practices that we call Doöli Law, along with Indigenous land management mechanisms which acted to sustain respect for water and wetland environments.
- Wetlands, including especially high elevation wetlands, perform a vital function in provision of wildlife refugia. This is particularly important for large ungulates such as caribou and moose.

During the winter months, moose and caribou may seek supplements of all major minerals as their primary winter diets are low in minerals and proteins.

- Wetlands provide critically important hydrological, biogeochemical, and ecological functions in the landscape. “Ecosystem services” include flood and water quality regulation, habitat provision and preservation of biodiversity including rare and endangered species.
- Throughout North America, including many regions of Canada, systematic degradation and losses of wetlands and attempts at wetland reclamation have resulted in “landscape homogenization,” with preferential creation of open water marshes and ponds, even in areas where such wetland types were not previously abundant. This results in a net-loss of wetland-supported ecosystem services because these do not support the same types of ecological and hydrological functions as the original ecosystems.
- Preservation of wetland diversity is increasingly recognized as an important landscape or watershed-scale management criteria. Mapping and classification methods are rapidly evolving to incorporate metrics of hydrological and ecological functioning in support of such efforts.
- Where permafrost has fundamental significance for ecosystem restoration after disturbance. It means that the ecological function of a wetland where plants are adapted to permafrost conditions may be altered in perpetuity, not simply on a short-term basis.
- Project reclamation must be compared with undisturbed baseline conditions, but if these are anticipated to change, the evolving baseline conditions in undisturbed watersheds must be monitored before it is possible to accept that closure and reclamation plans have been fulfilled. Climate change effects on ecosystems will be part of any land use planning and follow-up monitoring because it is an exercise regarding the future.
- The placer mining sector is composed of many individual operators who often have no accountability or even basic contact established with affected First Nations. In addition, there is a range in scale of operations, but many operators are relatively small-scale (especially in comparison with large hard rock mining operations). This means that environmental and socioeconomic impacts are assessed on a claim-block-by-claim-block basis and may often be immeasurable under current monitoring and regulatory regimes.
- In considering economic contribution and impacts of placer mining in wetlands, FNNND suggests that a holistic and watershed-based approach is necessary to understand the full scope. Such an approach will require a comprehensive cost-benefit analysis.
- The proposition that passive wetland reclamation to open water ponds or swamps following placer mining can re-establish all of the ecosystem services and functions provided by the original wetlands is incorrect and should instead be described as a form of rehabilitation. Rehabilitation prioritizes decontamination, alternative land-use production, and/or the re-establishment of certain, limited ecosystem functions.
- Any attempts to reclaim or rehabilitate placer mined wetlands on a case-by-base basis instead of at the watershed-scale cannot adequately address the cumulative impacts of wetland destruction and rehabilitation without a more robust, watershed scale policy and management framework.
- Any licence that authorizes mining that disturbs wetlands should require the following:
 - Implementation of the approved reclamation plan.
 - Security bonding for the full costs of reclamation.
 - Updates to the reclamation plan and cost estimate at least every two years to ensure the plan remains consistent with the site and mining status.
 - Progressive reclamation within a predefined period of inactivity (e.g., 1–2 years).
 - Full reclamation within an established period from the end of the gold recovery.

- Comprehensive monitoring of conditions in affected wetlands and buffer areas before, during, and after mining and reclamation activities, including programs to demonstrate post-reclamation short-term and long-term achievement of reclamation standards.
- Minimum of annual reporting on reclamation progress and performance.
- All requirements related to reclamation, monitoring, and security should be enforceable.
- The context to responding to the Board’s questions require that YG and the Board properly discharge their constitutional obligations by maintaining the natural conditions of waters and wetlands as promised in Chapter 14 of and by completing the regional land use planning processes as promised in Chapter 11 of the Final Agreement. The responses below to the Board’s questions are made with this caveat.

Hearing Questions

QUESTION 1. WHAT INFORMATION SHOULD BE REQUIRED TO SUPPORT A WATER LICENCE APPLICATION RELATED TO PLACER MINING ACTIVITIES IN WETLANDS?

- In the absence of the completion of regional land use planning and the collection of comprehensive baseline information, there is not enough information for the Board to make sound decisions on an application-by-application basis in a way that fulfills its statutory objectives and constitutional obligations.
- As part of the required baseline information, a systematic, high-resolution inventory of wetlands is required to provide a mapping baseline in support of watershed-scale management of placer mining activities.

QUESTION 2. WHAT SHOULD THE WETLAND CONSERVATION, DEVELOPMENT AND UTILIZATION OBJECTIVES BE FOR A WATERSHED AND HOW CAN THEY BE BALANCED ON AN APPLICATION-BY-APPLICATION BASIS?

- This question cannot be fully answered without the long-term, large-scale thinking towards identifying watershed management objectives that is completed through land use planning processes. FNNND’s Final Agreement defines “Sustainable Development” as “beneficial socio-economic change that does not undermine the ecological and social systems upon which communities and societies are dependent.”
- To be consistent with FNNND’s Final Agreement, the overall objectives for wetlands management on a watershed scale should be no net loss of wetland function; and conservation of wetlands for which function cannot be practically restored.
- This will inform the establishment of wetland protection measures and disturbance thresholds. Such thresholds will limit the total disturbance for each type of wetland on a watershed basis; take a precautionary approach by setting the limits at zero until we understand the current conditions and potential effects of disturbance on wetland function; and include buffer zones around wetlands.
- Once this work is complete, placer mining licence applications can be evaluated within the broader context of this baseline condition.
- Concrete conservation objectives and associated metrics should then be determined in relation to this baseline condition to support an integrated watershed-based decision-making framework that accounts for wetland abundance, diversity, and social and cultural values.
- The Board may be able to apply watershed-based disturbance thresholds; ensure temporal and geographic spacing of permitted projects; and apply constraints on the types of activities that are allowed on wetlands, such that wetlands are only disturbed where absolutely necessary.

QUESTION 3. WHAT RECLAMATION OBJECTIVES SHOULD BE CONSIDERED DURING THE WATER LICENCING PROCESS?

- The overall goal of wetlands reclamation on both the site-specific and watershed scales should be no net loss of wetlands function. Reclamation as it is currently understood through industry best practices (e.g., KPMA Best Management Practices for Placer Mining in Yukon Wetlands) and regulations (Placer Mining Land Use Regulation) is a passive transformation of ecosystems which, over time, will lead to a loss of wetland diversity and ecosystem function. The cumulative effects of such impacts are not tolerable for Indigenous rights-holders and with due consideration of wetlands being a public good.
- Once the appropriate regional planning and watershed management policies are in place, the following objectives may be integrated on an application-by-application basis:
 - A priority objective to restore wetlands and their function by replacing wetlands with same classes of wetlands.
 - Post-reclamation landscape with wetland (quantity and quality) and wetland function (ecological and socio-cultural) consistent with pre-project conditions.
 - Self-sustaining ecosystems in physically and chemically stable environment.
 - Eliminate public liability for reclamation through security bonding for full costs of reclamation.
 - Progressive reclamation with reclamation of mine components and disturbances within an established time period (e.g., 1–2 years) of inactivity.
- The Board should specify a reclamation schedule that requires completion of reclamation within an established time period after end of gold recovery (e.g., 1 year).
- The Board should also establish performance monitoring and response standards and processes that will confirm the performance of reclamation activities and address shortfalls.

FNNND Recommendations

- Take a Pause on Applications for Placer Mining in Wetlands.
- Request the Executive Council Issue an Order to Temporarily Stop Approving Placer Mining in Wetlands Under Section 18 of the Waters Act.
- Executive Council has the authority under Section 32 of the Waters Act to direct the Board not to issue further licences for a specified amount of time or to enable comprehensive evaluation and planning to be carried out for wetland complexes.
- The Board recognized that the issue of placer mining in wetlands had reached a point where it required a Public Interest Hearing to allow stakeholders to provide their information and views. It is entirely appropriate for the Board to consider the information and views provided at the Hearing, and applying its own expertise, to make recommendations to YG on how best to address the issues facing Yukon in respect of placer mining in wetlands.
- FNNND encourages the Board to make findings and determinations in its “What We Heard” Report coming out of this Virtual Hearing on issues identified in our oral and written submissions, including the urgent need for comprehensive land use planning, as well as the cultural values, traditional and ongoing uses of wetlands by Indigenous communities.
- The Board should also make findings and determinations regarding the cumulative and adverse impacts of placer mining in wetlands to our practices and way of life.

FNNND Conclusions

- In making decisions on applications for placer mining in wetlands, the Board is acting on behalf of the Crown and has the duty and the authority to ensure that it carries out its responsibilities in a

manner that is consistent with and upholds constitutionally protected Aboriginal and Treaty Rights.

Responses to the Parties Submissions at Hearing

The Board's Jurisdiction:

- The Board's jurisdiction over placer mining applications in wetlands is unquestionable, contrary to the submissions of some of the Parties.
- The Board has delegated authority under the Placer Mining Act to act as Chief of Placer Mining Land Use with respect to Class 4 placer land use operations.
- Regulating activities within wetlands falls squarely within the Board's jurisdiction and objects under the Waters Act and Chapter 14 of the FNNND Final Agreement. Specifically, the objects of the Waters Act are to "provide for the conservation, development, and utilization of waters in a manner that will provide the optimum benefit from them for all Canadians and for the residents of the Yukon in particular." In addition, the Board is mandated under Chapter 14 of the FNNND Final Agreement "to maintain the Water of the Yukon in a natural condition while providing for its sustainable use".
- Under the Waters Act, "waters" means "any inland water, whether in a liquid or frozen state, on or below the surface of the land."
- "Watercourse" under the Waters Regulation means "a natural watercourse, body of water or water supply, whether usually containing water or not, and includes groundwater, springs, swamps, and gulches."
- Although the Government of Canada's Federal Policy on Wetlands Conservation does not govern Yukon, this document is instructive and it defines a wetland as "land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation and various kinds of biological activity which are adapted to a wet environment."
- Based on these three definitions, wetlands are both "waters" and "watercourses" and therefore fall squarely under the purview of the Board, as per its objects. There can be no doubt that the Board has jurisdiction in respect of activities in wetlands, including placer mining; assertions to the contrary are meritless and merely distract from the true purpose of this hearing.

YG's Position:

- When the Board directly requested evidence to support the percentages used in the policy as well as evidence of protection for unmined, residual bog and fen wetlands, YG did not give any reliable sources or metrics. The arbitrary 40% "protection" of fens may still negatively and irreversibly impact watershed-level hydrologic regimes considering fens can play a critical function in water conveyance.
- FNNND continues to have great concern with the lack of consideration with respect to wetlands on a project-by-project basis.
- YG's Interim Approach to placer mining in the Indian River is highly concerning. FNNND is deeply troubled that if the Board does not utilize its tools and jurisdiction prudently with respect to wetlands and water management.

Clarification of the "Precautionary Principle":

- Continuing to issue licences "using the best available information" is the antithesis of employing the Precautionary Principle.

- The Stockholm Declaration of 1973 laid the grounds for the establishment of the Precautionary Principle in international law. The Precautionary Principle guides decision makers to take action to protect the environment, safety, and public health when there is scientific uncertainty.
- The Precautionary Principle is applied in situations where both the probability of environmental damage and the value of the damage are unknown.
- The Precautionary Principle is meant to ensure that the public good is represented in all decisions made under scientific uncertainty. When there is a degree of scientific uncertainty about the risks and benefits of a proposed activity, policy decisions should be made in a way that errs on the side of caution with respect to the environment.
- Implementation of the Precautionary Principle by the Board would take the form of not issuing further placer licences in wetlands until the information and regulatory structures are adequate to create mining plans which assure that actions are not or will not cause environmental and socio-economic damage.

Response to Information Requests

DIRECT QUESTIONS:

1. Please provide a translation of the Northern Tutchone spoken by Mr. Jimmy Johnny during NND's presentation to the Board.

Response: Elder Jimmy Johnny Wetlands Presentation to the Yukon Water Board (Translation with Joël Potié, Fish and Wildlife Officer, FNNND Lands and Resources)

From the presentation - What I said today, to you guys, water Board Members. My name is Jimmy Johnny. I was born on the river, on Stewart River. I grew up, I grew up down 17 Mile. Travelled all over this area. My parent, my grandma, my grandpa, my sister, my brother. Berries, they got traditional medicine. The wetlands, around the lake area, there is lots and lots of traditional medicines out there. We have to protect them for our future generation. And berries, we have to look after our berries. Boy I don't like that we have to be timed... okay good bye.

Further translation of JJ - Wetlands are very important to First Nation people and non- First Nation People, because they live around them, and use the water. And slowly, the non-First Nation people are learning about Traditional medicines. And uh, we have to keep talking about that, and protect it.

We don't want, at least I don't want Placer Mining to get into these wetlands and start tearing it apart, and uh, and after they are done, they just pack up and go. They don't clean up behind themselves. And uh, when uh, placer miners talk about wetlands and they create their own little ponds with a bunch of little rocks around it, and that's what they call wetlands, that's not natural wetlands.

Yes, maybe, sometimes, beaver or muskrats, or ducks come in there, then off they go again, so its something I don't like to see. Like around Dawson area, there is lots of little ponds that they created, and it don't look too good.

So we gotta keep our wetlands sustained and leave it as it is. If you ever go out there and you check around the lakes, and sometimes you see campfire where First Nation used to hunt beaver, muskrat and ducks, and sometimes you're going to find a campsite and trails, and if you see that, back away, don't touch that, don't disturb it.

I'm saying this to Placer Miners. I know they don't like me, but, its uh, something that I really don't want to see them disturb animal habitat, fish habitat, and trad med, and berries. You and me, when the time comes, well go out there and be leaving off the traditional medicines and berries. Well learn how to collect the berries and dig hole, and leave what we need, and go there and dig out what we need. And eat it. And

drying fish in those wetland area, that's where we dried jackfish and whitefish. And sometime the sucker and lingcod come up the creek and come into the wetland.

So, we need all that for our future generation, because in time they are going to learn how to be out in the bush. Surviving. We need this. NO MORE MINING IN OUR TRADITIONAL TERRITORIES.

GENERAL QUESTIONS:

FNNND urged the Board to discharge their duties in a manner that is consistent with the spirit and intent of the FNNND Final Agreement which is constitutionally protected under Section 35 of the Constitution Act, 1982. FNNND also maintained that adequate land use planning processes as required by Chapter 11 of the Final Agreement must be completed for the entirety of the FNNND Traditional Territory as a necessary first step towards ensuring appropriate and sustainable mineral development, including placer development in and around wetland areas.

1. What is the appropriate temporal and spatial scope for baseline wetland information required for an application for placer mining in wetlands?

Response: it was suggested that key ecosystem components and processes of the watershed need to be identified by the Land Use Planning process before baseline information is collected. Baseline survey methods should be robust and standardized such that results can be compared. Baseline surveys should also be carried out by qualified independent third parties. The duration of an ecological baseline survey should be long enough to understand the natural variability of ecosystems. The sampling effort will depend on the geographic coverage of the site, diversity of habitats and flora and fauna, presence of ecologically important species and seasonal variabilities. There should also be adequate sampling to ensure the data are representative for both spatial and temporal variations. Seasonal variations should also be considered for species of conservation importance which exhibit seasonal variations or when site information is inadequate.

2. Given the status of wetland mapping in Yukon:

- a. What wetland mapping information should be required as part of an application for a water licence?

Response: Mapping of wetlands should occur at a watershed level through a joint project overseen by overlapping First Nations and YG. Wetland studies should also include additional information layers to the mapping including descriptors of climate change, FNNND cultural landscape, wildlife populations, natural and anthropogenic disturbances, existing footprint and surface and subsurface hydrology. The incorporation of traditional knowledge on the accessibility of the lands, landscape simulations and management scenarios for the identified VECs should also be included in wetland studies.

- b. Who should provide that information and when?

Response: Landscape-scale parameters and modelling will need to be gathered by YG and affected First Nations during the Land Use Planning process. The proponent should be required to provide site specific parameters using qualified professionals and demonstrating engagement with overlapping First Nations. The collection of baseline information should be included in the YESAA application process.

3. What post-reclamation monitoring is required to verify that wetland reclamation techniques are effective? Who is responsible for verification?

Response: Success indicators, thresholds and triggers would be pre-negotiated commitments laid out in the Land Use Plan and would direct landscape and sites specific monitoring. In addition to commitments in the permitting process, they would specify what actions are to be taken and when on the basis of information obtained from monitoring. Indicators of reclamation success could include:

- Created wetlands are functional (e.g., vegetated, filtering water, supporting wildlife).

- Wetland: upland ratios are within 10% of pre-mining ratios.
- No unnatural rock dumps or excessively deep pits left on site.
- Surface and groundwater flows returned to unimpeded conditions.
- Permafrost is protected and habitats configured to return or support depth of freezing.
- Wetland insects (base of animal food chain) return in abundance and diversity.
- Organic substrates are replaced where they formerly occurred, albeit at a shallower depth (10-25 cm deep) due to volumetric losses.
- Cultural use of the landscape is resumed.
- Watershed-Landscape level cumulative effects remain unimpacted.

Proponents should be required to conduct yearly reporting on progressive reclamation measures completed, and evaluation of monitoring parameters. The reporting would be submitted to regulators, including the affected First Nations. To reduce any perceived conflict of interest, proponents should be required to engage professional qualified experts to conduct all monitoring and reporting. The regulators will evaluate the actual reclamation performance. This process will continue until all indicators of success are met, at which time qualified representatives of the regulating agencies will conduct site assessments and approve completion of reclamation.

4. What requirements in a licence or mining land use authorization would improve effectiveness of wetland reclamation and that reclamation objectives are achieved post-mining?

Response: Licences that authorize mining that disturbs wetlands should require the following:

- Implementation of the approved reclamation plan.
- Security bonding for the full costs of reclamation.
- Updates to the reclamation plan and cost estimate at least every two years to ensure the plan remains consistent with the site and mining status.
- Progressive reclamation within a predefined period of inactivity (e.g., 1-2 years).
- Full reclamation within an established period from the end of the gold recovery.
- Comprehensive monitoring of conditions in affected wetlands and buffer areas before, during, and after mining and reclamation activities, including programs to demonstrate post-reclamation short-term and long-term achievement of reclamation standards.
- Minimum of annual reporting on reclamation progress and performance.

5. Because techniques of placer mining reclamation of wetlands transforms bog and fen wetland types to marsh and shallow water bodies:

- a. How does this transformation on a claim-by-claim basis affect the watershed-scale wetland ecosystem?

Response: Wetlands are hydrologically connected to rivers, lakes, groundwater and to other wetlands. Wetlands moderate water flow by absorbing much of the surface water runoff from the land, and then by slowly releasing it. Thus, wetlands help to reduce flooding and to sustain water flow during dry spells. Wetlands also play an important role in water quality by trapping sediments and absorbing excess nutrients and heavy metals. Each wetland plays an intrinsic role in maintaining the watershed's hydrology, effectively mediating healthy land, water and cultural systems.

The conversion, and unregulated loss of peatlands, to shallow-waterbodies and marshes, would result in increased water flow. Fast moving water is more erosive, increases turbidity, and leads to rivers having peak flooding followed by longer periods of low water flows.

The relatively high value of wetlands to regional ecology is evident in the disproportionately high diversity and abundances of fish and wildlife species using these habitats. There remain many unknowns around the long-term suitability of reclaimed habitats for healthy assemblages of flora and fauna (invertebrates,

birds, small mammals, large mammals, and fish). A disturbed landscape often has higher biodiversity, as colonizing species take advantage of the open niches. However, these are not stable ecosystems, and many of these species do not maintain lasting populations as time passes and succession occurs.

- b. Are shallow water bodies and marsh wetland types over-represented because of reclamation and what is the cumulative effect?

Response: Over-representation of shallow water bodies because of reclamation may vary by watershed. Without the proper baseline research, mapping and an understanding of cultural research, FNNND cannot determine at this time the nature, quantity and location of over-representation; however, with increased and unregulated development in wetlands, over-representation on a watershed scale will occur. The smaller and more fragile the watershed/ecosystem, the more quickly this overrepresentation may cross a cumulative threshold which is irreversible.

Ultimately, the effects on all environmental variables are incremental and cumulative, resulting in loss of habitat types, loss of ecosystem integrity, and loss of cultural landscape. Additionally, the contribution of peatlands as carbon sequestering systems in a quickly changing climate has local to global implications. The loss of millions of tons of carbon stored in peat is widely considered unconscionable in today's rapidly changing climate.

6. Can the utilization, development and conservation of wetlands be achieved using a management approach similar to the DFO watershed authorization model?

Response: The DFO watershed authorization model is viewed to be ineffective and has resulted in neither conclusive determination about the cumulative effects on streams from placer mines or adaptive measures. As a result, FNNND cautions the Board with utilizing this model.

There is also the need to integrate Indigenous ways of land and water management which included holistic approaches such as a watershed approach. There is a misunderstanding that the negative impacts from placer mining using the DFO Authorization Model is under control and is working to mitigate cumulative effects to watersheds. This is not the case. Wetland health is dependent upon a number of more complex and interconnected components that the DFO Authorization Model however there may be a lot that can be learned in approaching a watershed-based model for dealing with wetlands disturbance and ecosystem health.

7. How does the cost of reclamation for a placer operation in non-wetland areas compare to the cost of reclamation of wetlands?
 - a. What is the economic impact of reducing mining in wetlands?

Response: Impacts to wetlands are not solely environmental impacts but include impacts to First Nation rights and ways of life. These impacts will have direct economic repercussions to First Nations and the public good with local, regional and global implications. Included in this are the economic impacts incurred at various scales as residual or external costs resulting from loss of ecosystem services, future infrastructural costs related to climate change inherently tied to permafrost and peatland loss due to placer mining, and the very real residual economic costs of further eroding Indigenous connection with the land and generational continuity of culture.

From the perspective of First Nations, exclusion from a particular area or from a wetland/wetland complex within a mining footprint means two generations without continued access to a location or region. This may exceed a socio-cultural threshold, especially for specific locations and regions, which is simply unacceptable socio-economically and may be enough to break a continued meaningful practice of First Nation rights within that location.

FNNND recognizes that a pause on permitting of placer mining activity in wetlands will have an impact on the placer mining industry and the associated economic benefits of that industry.

- b. If security is required for a placer undertaking, what information is required to calculate it for reclamation of wetlands?

Response: Adequate financial security to cover full costs of third-party reclamation of wetlands must be established for any placer operation proposing disruption of wetlands in their project design. If mechanisms are not in place to verify a proponent's ability to cover these costs with full accountability, then public government should have an alternative mechanism for including this financial security as part of the licensing process.

Additionally, contingency measures and design considerations will also need to be included, as well as any associated monitoring requirements to be carried out pre- and post-reclamation for ensuring reclamation success. A clear breakdown of estimated costs associated with all aspects of implementing the design features, contingency measures under potential scenarios, and monitoring, etc. will be needed under the assumption a third party will be tasked with the completion of for reclamation plans.

8. Can the use of adaptive management plans mitigate adverse effects to wetlands from placer mining?

Response: The application of adaptive management can be an effective management tool for complicated natural-resources management problems with a high degree of uncertainty. It establishes an iterative process that involves sharing of responsibilities and decision making among managers, biologists, and stakeholders. Adaptive management, if used appropriately, is a tool that has the ability to mitigate adverse effects to wetlands and meet land use planning objectives.

Adaptive management often encounters challenges due to a lack of clear objectives, lack of implementation, lack of data gathering, and a lack of enforceability. Any adaptive management plan must include:

- Detailed descriptions of the areas of uncertainty about performance of the proposed project.
- Identification of expected project performance and outcomes and what conditions would be considered unacceptable.
- Identification of indicators that will be used to monitor and understand the performance status, thresholds and triggers for indicators, methods for interpreting monitoring results in comparison to thresholds, triggers, and definitions of unacceptable conditions, details about responses to exceedance of thresholds and triggers, and descriptions of responses must demonstrate that they will be effective in addressing effects.

9. Indigenous Knowledge (IK) was raised as a source of information to help understand landscape connectivity. Please provide information on how the Board could incorporate IK on an application-by-application basis and when IK should be provided.

Response:

Within the current statutory and regulatory regime, Indigenous Knowledge cannot be adequately incorporated on an application-by-application basis. This shortcoming is one of the reasons why an overhaul of the existing regime is so urgently required and is one of the reasons why FNNND is urgently asking the Board to take a "pause" on licensing placer mining activities in wetlands.

FNNND recognizes that the Board is bound to the regulatory system which does not adequately incorporate Indigenous Knowledge. In adherence to the Precautionary Principle and to obligations of reconciliation, the Board should therefore not issue licences until the fundamental framework of true co-management is established which can incorporate Indigenous Knowledge. It might be advantageous for First Nations upon request from the Board to provide a framework of engagement so the Board may better understand how Indigenous government is directly tied to Indigenous knowledge.

Wetlands and Indigenous lifeways are inextricably linked, and biologically productive wetland habitats formed a central part of large travel routes, land use patterns, harvesting practices, culturally vital locations, meeting places, and places of spiritual importance. This describes a “Cultural Landscape.”

Specific to watershed-level impacts of placer mining, and impacts specifically on wetland habitats, cumulative effects consideration needs to be understood as Indigenous Knowledge. For this reason, we urge the Board as a first step in incorporating Indigenous Knowledge, to recognize the lack of ability and therefore the lack of adequate information supplied for specific applications, and to not issue licences until a regime is better equipped to meet First Nation requirements for co-management under the Final Agreements.

6.8 YUKON CHAMBER OF MINES

Representation Summary

Mr. Randy Clarkson introduced himself on behalf of the YCM and also acknowledged Ms. Anne Michon as a contributor to the presentation. For the purposes of this report, it was decided to include some of the slides from Mr. Clarkson’s presentation to ensure an accurate summary of the YCM information at the Virtual Hearing.

Summary

- The objective of wetland reclamation should be to re-establish the appropriate saturation and/or flooded conditions, soils and topography to facilitate the natural development of a self-sustaining wetland habitat.
- The information required to support a water license application should include a conceptual mine and reclamation plan which can be adapted to suit unforeseen and/or changing conditions.
- The application should indicate which areas contain pre-existing wetlands and approximately what proportion of these original wetlands will be disturbed and reclaimed into a mixture of low hill uplands and marsh and shallow water wetlands.
- The wetland conservation, development and utilization should be considered on a regional (Klondike Plateau etc.) scale. In the event that placer mining changes more than 10% of the natural wetlands in these regions each new application should be required to leave some portion of the original wetlands undisturbed.
- Some of the tasks in the wetland information guidelines developed by the Palmer Group are repetitive while others could be extremely costly to implement and could result in a dramatic shrinkage of the placer mining industry with little if any benefits to anyone except to wetland consultants and hydrological consultants.
- These guidelines should be rejected by the Water Board in favor of a simpler, cost-effective approach (modified BMP's) that are easy to enforce and actually enhance wetland reclamation.
- YG, First Nations and representatives of industry and other NGO's need to get together to review, amend and sanction a revised version of the KPMA's BMPs.
- These revised BMP's need to become part of the standard boiler plate conditions of any class IV land use permit.
- YG and the KPMA need to provide training to both miners and mines inspectors regarding wetland reclamation and the use and enforcement of these new permit conditions/ BMP's.

Family Farm of the North

- Most Yukon placer mines are family-owned and operated
- Most placer miners are Yukon residents
 - 90% of owners
 - 68% of employees
 - 92% of operating expenses spent in Yukon
- Placer mining employs 400-600 people directly, and additionally over 600 people in service industries
- Yukon's 2nd or 3rd largest industry
- Yukon placer miners are committed for the long term



Inherent Constraints of Placer Mining 1

- Placer deposits are very erratic and difficult to outline with certainty.
- Usually it would cost more to develop accurate NI43-101 ore reserve estimates than to actually mine the placer deposit.
- This eliminates the possibility of financing with publically traded corporations who require NI43-101 resource estimates.
- Drilling is probably the best method to outline potential mine areas but is still relatively inaccurate due to the erratic nature of placer gold.
- Placer miners need to be flexible and change their conceptual mining plan to adapt to changing and/or unexpected physical, geological and financial conditions.
- Therefore a placer miner usually cannot provide the Water Board with anything but a conceptual mining and reclamation plan, strict adherence to more detailed plans would not allow the flexibility required to respond to changing or unanticipated conditions.

Inherent Constraints of Placer Mining 2

- This is why virtually all Yukon placer mines are relatively small (2 to 6 employees) privately-financed, family owned and operated ventures.
- Despite the limited finances - large scale, expensive heavy equipment is required to profitably mine the low grade gravels.
- Many placer miners have large loans from partners, relatives, banks and equipment vendors and they need to make regular payments.
- Many placer miners continue to operate through periods of low gold prices in order to keep their employees & pay down their heavy equipment debt.
- Many of the small-scale start-up placer miners have to work in the winter to pay for the shortfalls incurred during their summer placer mining operations.
- They simply do not have access to the financial resources of a large public corporation and cannot afford lengthy and/or expensive environmental studies prior to, during, or after mining operations.

Yukon Placer Deposits

- Most Yukon placer gold deposits occur under or beside streams which are usually located in wetlands.
- Activities involve the stripping of surface vegetation, the thawing and removal of overlying permafrost soils and gravels.
- Typical wetland avoidance strategies found in other kinds of mining activity are often completely impractical for this industry.



Placer mining in the Indian River Wetlands.



Wetlands

- Wetlands are important ecosystems.
- Most areas of the developed world have permanently altered or destroyed their wetlands - construction of farms, subdivisions and industrial parks.
- Yukon appears to have vast areas of intact wetlands.
- Proportion of areas impacted by industrial activity (principally human occupation, placer mining and oil/gas exploration) is low & can be temporary impacts.



Passive post mined wetlands.



Wetland Reclamation Objectives

- To re-establish the appropriate saturation and/or flooded conditions, soils and topography.
- To facilitate the natural development of a self-sustaining wetland habitat.
- Include a varied landscape, incorporating several ponds and lakes, wetlands, and interconnected drainage systems with vegetated uplands.



Reclaimed Shallow Water Upper Valley Wetland

It is most beneficial if the reclaimed habitat also re-establishes a suitable environment for culturally important species, such as waterfowl, moose and beaver for First Nations as well as other hunters and trappers.

Challenges of PF Wetland Reclamation

- Reclamation of some classes of wetlands disturbed down to bedrock is extremely problematic even in southern jurisdictions.
- Placer miners have been mining wetlands in the Indian River valley for almost 40 years and for over 100 years in other areas of the Klondike.
- Wetlands have been passively reclaiming themselves all this time.
- It is not necessary to do extensive baseline studies, stream flow and ground flow measurements to predict how mined areas will reclaim or to predict the impacts of mining on wetlands.
- We can see the many examples in the field, they are there waiting for us – placer miners see them every day.
- We should enhance passive reclamation so that it occurs more rapidly and into better wildlife habitat.

Why Set Up for Failure

- Incredibly expensive, frustrating and imprudent to attempt to reclaim post mined sites to peat land wetlands given the high likelihood of failure.
- Many of these refilled and flattened/leveled areas would end up reclaiming as dry land or upland habitat instead of any class of wetlands.
- Fortunately, all classes of wetlands perform at least some of the same functions.
- Can easily reclaim to marsh and shallow water complexes which are by far the most significant wetlands in terms of wildlife diversity (National Wetlands Working Group, 1988).
- Any proposed Yukon wetland reclamation techniques need to consider various limitations such as the lack of previous local experience, the difficulty to predict the success of reclamation except passive reclamation, the limited financial / technical resources and significant investments of placer miners.

Ecological Functions of Wetlands

- There is a need to understand the fundamental differences between the nature and ecological functions of northern permafrost wetlands and their southern counterparts (upon which almost all published research is based).
- Wetlands provide carbon storage, regulation of water flows (on a daily and seasonal basis), filtering/purification of water and wildlife habitat
- Permafrost peatlands do provide water purification and habitat as do all other types of wetlands.
- Yukon permafrost peatlands often have less than 1 m thickness of peat which is thawed on the surface only during the brief peak summer months. This drastically limits the ability of permafrost peatlands to store carbon as compared to their southern counterparts.
- Wetlands also produce methane - making them one of the largest contributors to climate change.

Ecological Functions of Wetlands

- All classes of wetlands provide the stabilization of water flows, filtering/ purification of water, storage of carbon and the provision of wildlife habitat.
- Research conducted in the Indian River Valley indicated that many song birds and waterfowl were common to undisturbed peatlands and post mined marsh and shallow water wetlands; and that all habitats including post mined areas hosted species of concern (Michon 2014).
- Some species such as moose, caribou, foxes and many birds can use both wetland and upland habitats.
- Research conducted by EDI (2013) indicated a high density of moose and other wildlife species in post mined areas.
- Many species such as waterfowl, fish and aquatic insects are completely dependent on (open water) wetlands for breeding habitat and survival.

Overview of Best Management Practices

- Create a complex of various wetlands and uplands which support a wide diversity of wildlife species.
- Exact location and type of wetlands created is difficult to predict in advance of placer mining.
- Need to be able to adapt quickly to changing pay gravels, site conditions & economics.
- Use and adapt existing post mined landscape features as much as possible.
- Work closely with these BMP's to help ensure successful and cost effective reclamation.



Marshes often develop on the shallow underwater shorelines of Shallow Water wetlands located previous open pits and settling ponds. This is a post mine passive (unaided) wetland about 10- 15 years old.

Why Use BMP's (standard permit conditions)?

- Placer deposits are often erratic and difficult to predict.
- Extremely difficult to estimate ore reserves for placer deposits.
- Placer miners need to be flexible and adapt to rapidly changing conditions.
- Best Management Practices provide the flexibility required for Yukon Placer Mining.
- These BMP's will allow the re-establish the appropriate saturation and/or flooded conditions, soils and topography to facilitate the natural development of a self-sustaining wetland.

Conclusions -1

- Most Yukon placer mines have wetlands on their claims with the small exception of those working in heavily disturbed historic mine areas and/or high bench White Channel deposits.
- Yukon placer miners have been mining in wetlands for over 100 years
- Only 0.27% of the land surface of the entire Klondike Plateau has been disturbed (Bond 2019).
- Vast areas of the wetlands on the Klondike Plateau and in TH's traditional territory have seen very little or no recent disturbance by placer mining.
- There is ample existing field evidence that the placer mined peat land wetlands are already passively reclaiming themselves into marsh and shallow water wetlands, generally with little or no impact on adjacent undisturbed wetlands.
- Indeed the passively reclaimed areas have been found to have a higher density of wildlife including endangered/threatened species, many types of waterfowl, moose, beavers, muskrats and various varieties of fish. In general, marsh and shallow water wetlands have the highest diversity of wildlife (National Wildlife Working Group, 1988).
- We have the ability to enhance the passive natural reclamation of these wetlands to speed up the reclamation process and provide superior wetlands and uplands using standardized permit conditions based on modified best management practices.

Conclusions -2

- It is only possible to reclaim the original wetlands to a mix of low hills, marsh and shallow water wetlands regardless of the type of original wetland that is disturbed - no amount of baseline studies, permafrost investigations or ground water or surface water measurements will change this.
- Some of the Palmer Group's Wetland Information Guidelines duplicate existing requirements already required in the permitting process while others could be extremely costly attempts to determine the extent of permafrost and the surface and ground water levels/flows in existing wetlands. The field methods are subject to errors and many wetland areas have no viable access prior to disturbance.
- Placer miners do not have the financial or technical resources of public mining companies – they also have much lower potential to emit acid or metal leachate compared to hard rock metal mines. They cannot afford costs and delays inherent in Palmer Group's Wetland Information Guidelines.
- Therefore the options for regulators are to allow miners to convert peat lands to reclaimed marsh and shallow water wetlands or to dramatically reduce the placer mining industry which is the most robust and 2nd largest sector of the Yukon's private economy.
- Placer miners are not universally undertaking enhanced wetland reclamation because the regulators, assessors and/or advisors have not been able to agree/endorse a set of permit conditions and/or best management practices to achieve these goals.
- We need simple, affordable, effective, easily understandable and easily enforceable guidelines for the placer mining industry – can modify the KPMA BMPs as a basis to create some affordable conceptual boiler plate type class 4 land use permit conditions

Recommendations -1

- The objective of wetland reclamation should be to re-establish the appropriate saturation and/or flooded conditions, soils and topography to facilitate the natural development of a self-sustaining wetland habitat. These reclaimed wetlands will usually be marsh and shallow water wetlands.
- The information required to support a water license application should include a conceptual mine and reclamation plan which can be adapted to suit unforeseen and/or changing conditions.
- The application should indicate which areas contain pre-existing wetlands and approximately what proportion of these original wetlands will be disturbed and reclaimed into a mixture of low hill uplands and marsh and shallow water wetlands.
- The wetland conservation, development and utilization should be considered on a regional (Klondike Plateau etc.) scale. In the event that placer mining is changing more than 10% of the natural wetlands in these regions, each new application may be required to leave some portion of the original wetlands undisturbed.
- The wetland information guidelines developed by the Palmer Group could be extremely costly to implement and result in a dramatic shrinkage of the placer mining industry with little if any benefits to anyone except to wetland consultants and hydrological consultants. These guidelines should be rejected or modified by the Water Board in favor of a simpler, cost-effective approach (modified BMP's) that are easier to enforce and will actually enhance wetland reclamation.
- YG, First Nations and representatives of industry and other NGO's need to get together to review, amend and sanction a revised version of the KPMA's BMPs.
- These revised BMP's need to become part of the standard boiler plate conditions of any class IV land use permit.

Recommendations -2

- YG and the mining industry (KPMA) need to provide training to both miners and mines inspectors regarding wetland reclamation and the use and enforcement of these new license conditions.
- YG mines inspectors need to ensure that placer miners are adhering to these new conditions during their frequent inspections.
- Establishment of wetland will take in the order of 10 to 15 years.
- Reclaimed wetlands should not require long-term maintenance and management.
- Monitoring should be conducted to see if adjustments need to be made to these new license conditions (best management practices) from time to time.
- This monitoring information should be used to gauge reclamation success and not to justify tearing up and re-reclaiming former wetland areas.
- Monitoring should be conducted by mines inspectors (trained in wetland reclamation methods) to ensure that erosion has been limited, revegetation of disturbed areas has occurred, and that the reclaimed wetlands are saturated and/or under water.

Summary of Slides

- Most Yukon placer mines are family owned and operated.
- Placer mining employs 400-600 people directly and additionally over 600 people in the services industry.
- Yukon's 2nd or 3rd largest industry.
- Placer deposits are erratic and difficult to outline with certainty.
- Placer miners need to be flexible and change their conceptual mining plan to adapt to changing and/or unexpected physical, geological, and financial conditions.
- Therefore, a placer miner cannot provide the Water Board with anything but a conceptual mining and reclamation plan.
- Virtually all placer mines are relatively small (2 to 6 employees), privately financed, family owned and operated ventures.
- Despite limited finances, large scale and expensive heavy equipment is required to profitably mine low grade gravels.
- Wetlands are important ecosystems.
- Yukon appears to have vast areas of intact wetlands.
- Yukon permafrost peatlands often have less than 1 m thickness of peat which is thawed on the surface only during the brief peak summer months. This drastically limits the ability of permafrost peatlands to store carbon as compared to their southern counterparts.
- All classes of wetlands provide the stabilization of water flows, filtering/purification of water and storage of carbon and the provision of wildlife habitat.
- The objective of wetland reclamation should be to re-establish the appropriate saturation and/or flooded conditions, soils and topography to facilitate the natural development of a self-sustaining wetland habitat.
- Placer miners have been mining wetlands in the Indian River valley for almost 40 years and for over 100 years in other areas of the Klondike.
- Wetlands have been passively reclaiming themselves all this time.

- We should enhance passive reclamation so that it occurs more rapidly and into better wildlife habitat.
- The information required to support a water licence application should include a conceptual mine and reclamation plan which can be adapted to suit unforeseen and/or changing conditions.
- The application should include which areas contain pre-existing wetlands and approximately what proportion of these original wetlands will be disturbed and reclaimed into a mixture of low hill uplands and marsh and shallow water wetlands.
- The wetland conservation, development and utilization should be considered on a regional (Klondike Plateau) scale. In the event that placer mining changes more than 10 % of the natural wetlands in these regions each new application should be required to leave some portion of the original wetlands undisturbed.
- Some of the tasks in the wetlands information guidelines developed by the Palmer Group are repetitive while others could be extremely costly to implement and could result in a dramatic shrinkage of the placer mining industry.
- These guidelines should be rejected by the Water Board in favour of a simpler, cost effective approach that are easy to enforce and actually enhance wetland reclamation.
- YG, First Nations and industry representatives and NGOs need to get together to review, amend and sanction a revised version of KPMA's Best Management Practices (BMPs).
- Incredibly expensive, frustrating and imprudent to attempt to reclaim post mined sites to peat lands given the high likelihood of failure.
- Can easily reclaim to marsh and shallow water complexes which are by far the most significant wetlands in terms of wildlife diversity.
- Most Yukon placer mines have wetlands on their claims.
- Establishment of a wetland will take in the order of 10 to 15 years.
- Reclaimed wetlands should not require long-term maintenance and management.
- Monitoring should be conducted to see if adjustments need to be made to these new licence conditions (BMPs) from time to time.
- Monitoring should be conducted by mines inspectors (trained in wetland reclamation methods) to ensure that erosion has been limited, revegetation of disturbed areas has occurred, and that the reclaimed wetlands are saturated and/or under water.

During his remarks Mr. Clarkson commented that the Wetland Information Guidelines prepared by Palmer Group if implemented, could be extremely costly to implement and could result in a dramatic shrinkage of the placer mining industry. Mr. Clarkson proposed a simpler and more cost-effective approach, which actually enhances wetland reclamation on the ground that was developed by the KPMA in 2015.

Mr. Clarkson proposed that the KPMA Best Management Practices for wetlands reclamation should become standard boilerplate conditions for any Class 4 Land Use Permit. They would be easy to enforce, easy to understand, and they would greatly accelerate and improve reclamation.

Mr. Clarkson also indicated that it is impossible for a placer mine to prepare a detailed mining plan due to the nature of placer deposits. Placer miners need to have the flexibility to respond to changes and unanticipated conditions. This is why all Yukon placer mines are relatively small, privately financed, and family-owned and operated ventures.

Mr. Clarkson showed that the Indian River wetlands have an area of 60 km² and the total disturbance of wetlands in the Indian River basin is only 0.29 %. He made the point that the Indian River is one of the largest gold deposits and accounts for approximately 50 % of the total production of placer gold in Yukon.

Mr. Clarkson responded to the third Hearing question, to re-establish appropriate saturated or flooded conditions, soils and topography, and to facilitate the natural development of a self-sustaining wetland

habitat. Self-sustaining includes a varied landscape with ponds, lakes and interconnected drainage systems with little vegetated uplands.

Mr. Clarkson agreed with both CPAWS and YCS that bogs and fens are extremely difficult or impossible to replicate in a reasonable timeframe.

Mr. Clarkson summarized that a study conducted by EDI found that the Indian River marsh and shallow-water wetlands actually had more species of concern and even a higher ecological index than the original area.

It was also summarized that placer mining in peatlands are passively reclaiming themselves, with little or no impact on adjacent undisturbed wetlands. Passively reclaimed wetland areas have been found to have a higher density of wildlife, including endangered and threatened species, many types of waterfowl, moose, beaver, muskrats, and varieties of fish. The position of the YCM is to enhance passive natural reclamation which will provide superior wetlands, using standardized permit conditions and based on best management practices.

He summarized that the Water Board can either allow miners to convert peatlands into reclaimed marsh and shallow-water wetlands or dramatically reduce the placer mining industry.

The placer mining industry requires simple, affordable, effective and easily understood and enforceable guidelines.

Board Questions

BOARD MEMBER: MR. WARNSBY

Thank you, Mr. Chair, Thank you for your presentation, Mr. Clarkson. Just a single question: Looking at the questions the Board posed to interveners, I think you've answered two in your presentation. Obviously, you focused primarily on question 3, which I think will be very helpful to the Board; but you touched on – in your intervention – that the Palmer Group Guidelines and the guidelines that have been developed by the Board for information in wetlands are too detailed and might not be effectively implementable by placer miners. Can you give some examples of specific types of information that can be required to support a balanced approach from the Board and simplifying those guidelines, as you mentioned, some specific actions or details that might be useful. Thank you.

RESPONSE: MR. CLARKSON

Thank you very much for the question. I think that the area to be mined – if it has wetlands – it should be mapped so that you have an idea of what is there and what will be changed. I don't think the Board would consider issuing a licence without that. That said, I think that we could develop a booklet, like the DFO booklet, that would allow people to go out in the field and do their own classification of wetlands. Some would hire specialists to do it and others may be able to get over that learning curve and can figure out which type of wetlands are there. You can map them with a handheld GPS if necessary and come up with the areas relatively easily. Some miners wouldn't be able to do that, but some would be.

And I keep hearing this talk about thresholds and the numbers that Jeff Bond has suggested in his satellite imaging shows that the levels of disturbance are quite low. I'm not an expert on what levels of disturbance would warrant changes or limits to placer miners, but I would think that the Board would at least grandfather existing licences from that and that they would look at some of the other methods to determine when significant changes are going to occur on a regional scale, rather than on a per length-of-stream scale. I hope that answers your question.

BOARD MEMBER: MR. WARNSBY

Certainly, that's some helpful information, thank you.

BOARD MEMBER: CHAIR, MR. MCDONALD

I have a quick question, Mr. Clarkson. As you know, decision document terms now are starting to call for the complete avoidance of mining in bogs and a percentage of fens. Do you find that to be a practical requirement? Do you think it's necessary; and if so, what information do you think would be required in order to realize that decision document term?

RESPONSE: MR. CLARKSON

What the mines are creating when it's done properly is wetland reclamation and best management practices, both in the case of wetlands in the Yukon Territory and in Canada generally, marshy, shallow-water wetlands, and they do create a great diversity. In terms of do I support the 40 percent and no bogs rule? I don't think it's a practical thing to do. It should depend on the size of the bog. For instance, if you have a tiny bog in the middle of a large area, I don't know how you would mine around it without some effect. I think we should look at each licence holder and see what he has mapped or he's had mapped for wetlands on his claim; and if the Board feels that they need to save some of these wetlands or stop some wetlands from being mined, I guess they can apply a percentage, but I don't think that's the way to go. I don't think we're at that point in time. I don't think we're at that point in ??

BOARD MEMBER: MR. SIDNEY

Thank you, Mr. Chair. Thank you, Randy, for your presentation. During some of our deliberations, we do our best to try to accommodate the applicants. In the last couple of days, we've had presentations, but nobody has ever talked about a buffer, but we had the discussion at our deliberations, and I'm just wondering if you can explain a little bit about how effective a buffer is in regards to protecting the water from not actually draining all away while the applicant is doing their work? Thank you.

RESPONSE: MR. CLARKSON

Yes, I think one of the biggest concerns people have with adjacent wetlands – wetlands adjacent to development is that they're affecting the saturation and the flow through the wetland. And in the larger scales, like the picture I have up on the screen here, the wetlands on the sides and in the middle of developments are okay.

On Karen's maps and the response, the fens go right down to the edges of the disturbances, just like they do in the photographs here; but I would be concerned if we had, like, a bog in the middle of those, like shallow-water wetlands, and if we have a high water table, we might have trouble to keep water in the bog [inaudible].

So, it's hard to say, but generally, what we've seen is this picture here is the pre-existing wetlands, and they're mined right up against them, and they maintain their functions and they maintain their moisture content. Again, that's backed up by Karen's maps. If you look at her maps and the vast areas that have been mined and vast areas that haven't been mined, and there seems to be a very sharp delineation between your pre-existing wetlands, which are still there, and the mined areas, which in some cases they've been reclaimed, and in some cases, they haven't been.

And it really bothers me that they all haven't been reclaimed. We need to sit down and go over some standard rules and make it straightforward. I mean, these are complex systems, but already, Mother Nature is reclaiming them with or without us. We could do a lot better job if we can give the miners instructions – enforceable instructions – and train the inspectors so that they can make sure the miner does his work, and it will improve the industry.

It will improve the habitat for everybody. To me, it's a win-win. It's a different type of wetland. I admit that. It has to be a different type of wetland. It's a highly-productive wetland. The moose aren't going to be exactly where they were 3,000 years ago. The berries aren't going to be where they were 3,000 years ago. There might be more beavers, but they're not going to be where they were a thousand years ago. They might be in a different place. Mining does change the landscape. It puts hills in it. It puts little ponds in it. It changes the type of wetland. It's still very productive wetland, with lots of moose in the Indian River

Valley. We hunt moose in that area, and there's lots of beavers in the area, but they're not in the same place as many of the elders would remember them, and that might be part of the frustration.

BOARD MEMBER: MR. BOWEN

Thank you, Mr. Chair, I'm not sure, Randy, if you were available to listen in on Ducks Unlimited's presentation earlier. They spoke to the application of peatland reclamation techniques, and in fact, the potential for peatland in permafrost reclamation; and I'm just wondering in your experience if such objectives are reasonable and to be employed in the Yukon or if you think that such measures would be perhaps cost-prohibitive. Thank you.

RESPONSE: MR. CLARKSON

I think it's a combination of both. When we first started doing research on reclamation, Anne and I, we looked a lot in Alaska and northern Alberta; and we also looked in the south, because most of the reclamation is in the south. If you want to reclaim peatland where you've harvested, like, horticultural purposes and you've cut off a foot or two or maybe a metre off a five-metre peatland, that's very easy to reclaim. It comes back quite quickly. If you disturb it down to bedrock, that's another challenge, and permafrost is another challenge to overcome.

And one of my earlier slides said: Why would you go up mining to do something, which multinational, multi-billion-dollar companies, with larger technical and financial resources, were unable to do? We didn't come across a recipe where they flattened off the whole area and we got a lot of hay and straw. I think it was a metre thick or two, and they put fertilizer and soil on undisturbed wetland, and you harvested the top of it and placed it on top, and then, had to put a dike across the valley to flood it, and you had to put a control gate on the dike to make sure that the water level remained fairly constant in the fen or bog that you were trying to reclaim, and then, there was no guarantee of success. There were very high rates of failure, even in southern Canada and the United States. So, we didn't consider that.

And not only was it cost-prohibitive, but it also had a very high failure rate. I mean, you've got to haul that hay up from somewhere. You've got to put in a dike across the valley to flood it. You've got to have someone near that dike when you get a storm event or a washout. You've got to have somebody there, adjusting the gate. We wanted to have a plan where you didn't have to fiddle with that wetlands; and once you built it and it was done, the beavers will come in and muskrats will come in, but freeze, thaw and forest fires will change it; but you don't have to come in again. Most of the ones we followed were very high maintenance. They have a very high maintenance – the ones that did survive – and there was a very high failure rate.

And you see a lot of studies out there about reclaimed lands and how they don't come up to snuff on this, and they don't come up to snuff on that and how they're deficient in this other way; and we come across people who are saying, 'Well, you know, if you're going to alter a peatland, a particular marsh and shallow-water wetlands, we can't do that, because you have to create pits for the shallow-water wetlands, and the water from that pit has to go somewhere, and it ends up being in the low hill surrounding marshy shallow-water wetlands, and that's actually a good thing, as I mentioned earlier, because it provides some privacy in the little ponds.

The pond outside my house, for instance, it only ever has one nesting pair of mallards; and nesting waterfowl, they won't allow another nesting pair in their area. So, you can break that up in ponds and put little hills on the side, and you get a lot of nesting pairs in that area. And you can even see in our pond, in the first few weeks in the spring, there's tremendous fighting going on between the different waterfowl as they fight for dominance [inaudible]. So, by making lots of small ponds and hills, [inaudible].

BOARD MEMBER: MS. LECKIE

Thank you. Thank you very much for your presentation, Randy. I want to go back to I think it might have been your first slide where you talked about the information provided should be conceptual in nature, because it's changing mining plans as people go about the business of mining.

One of the things we've heard numerous times in the last couple of days is about the need for a precautionary approach, balancing the fact that there is an absence of mapping, there is an absence of planning, what we know about an area is limited.

I'm not that familiar with the KPMA best management practices, but I guess my question is: Is there something – either perhaps through those best management practices or something that you think would help us balance between that precautionary approach and that conceptual concept of an application?

RESPONSE: MR. CLARKSON

I think the short answer is 'no', but I think what we have to do is -like I say, if we hadn't been doing this for a hundred years, we could be concerned. A few years ago, a consultant came up and he said, "Oh, my god, you're mining in these narrow gulches near permafrost. You're going to destroy the permafrost. They're going to leach soils and sediment down forever, and it's going to be a terrible mess."

We said, "Well, no, they don't. Actually, the moss and the spruce trees slowly creep down the slope and it restores itself nicely." So, we have been mining these gulches for over a hundred years, and we knew how they reacted; and we can do the same here.

I think it would be useful for the Government or for the Water Board or someone to hire someone with local expertise to go out and look at these areas and see them. We don't have to use a crystal ball. We have the actual wetlands in front of us, and we can estimate from Karen McKenna's work how much has been disturbed and how much how much remains.

We can certainly do a whole lot better job of enhancing reclamation, get rid of gravel piles for one; but if you're looking for a threshold, I can't offer that to you, but I would say that Jeff Bond's work shows that we are very small on the scale of disturbance in terms of area of wetlands and in terms of total land area in the Klondike plateau and the Tr'ondëk Hwëch'in traditional territory. I hope that helps you.

BOARD MEMBER: MS. LECKIE

No, you know, it's a balance, right, of what the Board is –

RESPONSE: MR. CLARKSON

It is a balance, and the price of gold is very high right now, and we have an industry, which is very old, as well, and we have a lifestyle, which is very old and we have a very significant part of the economy; and right now, you're at a cross-roads, and I don't envy you, because you have some choices, and some of them are not very easy choices to make.

If you install the Palmer guidelines and you interpret them, you know, fairly rigorously, there are a lot of small miners, which won't exist anymore. They can't do it.

If you go with a standard set of conditions, they're going to be easy to enforce. Enforcement is a big part of the picture. If the miners don't learn how to reclaim wetlands and the bad apples aren't forced to comply, then you leave.

So, I think that's the course we should be take. At what point do we stop the conversion of peatland wetlands and swamp wetlands into marsh and shallow-water wetlands? I can't tell you that, but I don't think we're anywhere near that yet, just based on Mr. Bond's work.

Closing Remarks

Mr. Clarkson provide closing remarks on behalf of the YCM. He thanked the Board for having this hearing. Mr. Clarkson indicated that issue of placer mining in wetlands is at a crossroads and with a few options as shown below:

- Shut down up to 70% of the placer mining industry including the Indian River drainage which provides 50% of the annual placer gold production through the imposition of stringent data collection requirements and much more complex and expensive reclamation which is unlikely to have any impact on the final reclamation of wetlands.
- Continue with the status quo and count on mother nature to continue to slowly but surely passively reclaim placer mined wetlands into less than optimal marsh and shallow water wetlands.
- Industry would like to embark on a new course where we incorporate simple, effective and easily enforced permit conditions (based on best management conditions) into every placer mining land use permit. This would both enhance natural reclamation and ensure the continued survival of the Yukon's second largest and most robust family owned and operated industry.

Mr. Clarkson also summarized that predicting gold resources in placer deposits can be difficult. As a result, obtaining public company status is not possible which results in limited resources for the placer mining industry. The industry requires the flexibility to be able to adapt to radically changing conditions such as permafrost issues and changes in gold grade. BMPs would provide the flexibility required for Yukon placer miners. It would allow the re-establishment of the appropriate saturation and/or flooded conditions, soils and topography and facilitate the natural development of a self-sustaining wetland which would create better habitat and provide for wetlands that reclaim much more quickly. Furthermore, industry is interested in getting governments and other stakeholders together to talk about any changes or revisions that may be required to these BMPs.

Mr. Clarkson commented that there has been technical advice from different interveners with a common theme of what might happen if placer mining continues in wetlands, as it has for the last 40 to 100 years. He further commented that the unfortunate aspect of this technical advice is that they do not have any experience in placer mining, and at most have only had very brief visits. In this situation, one can only offer very generalized advice with the worst-case scenarios of what might happen which is not an accurate reflection of what is happening onsite under the actual conditions. Industry has decades of field evidence that placer-mined areas are reclaiming passively into highly productive and diverse wildlife habitat into a mix of uplands, marsh and shallow-water wetlands. These wetlands also purify and regulate water flow and may do a better job than the original wetlands.

Mr. Clarkson also pointed to Karen McKenna's maps where the peatlands and the swamps are located directly adjacent to disturbance, and they seem to be unaffected. He also commented that DUC indicated marsh and shallow-water wetlands should not be mined, because they're very rare, and they have incredibly diverse habitat. However, DUC also recommended against reclaiming into marsh and shallow-water wetlands due to concerns about what might happen during mining of the original wetlands.

DUC recommended peat reclamation by laying down layers of straw, organic soil and harvested peat from undisturbed sites. However, the costs, long-term continuing maintenance and high failure rates with this approach to peat reclamation was not considered.

Mr. Clarkson also indicated that any Yukon wetland reclamation techniques need to consider limitations such as lack of previous local experience, difficulty to predict the success of reclamation and the limited financial and technical resources and significant investments of placer miners.

Comments made by the TH about the high costs associated with the reclamation of placer mined wetlands are incorrect when wetland reclamation costs are incorporated into the mining plan. FNNND expert advice was not based on Yukon information, knowledge or experience.

Mr. Clarkson also commented that placer mining transformed the landscape in the Indian River Valley by transforming peatlands and swamps into marsh and shallow-water wetlands, as well as small hills. Parties expressed concern about the un-reclaimed areas and piles of coarse gravels. Since 1998, placer miners have been required to follow a number of standard land use conditions, such as contouring and covering

exposed areas with the same organic soils. There are currently land use regulations to cover those gravel piles and make them into great upland habitat. Passively reclaimed habitat of marsh and shallow water creates conditions where wildlife tend to concentrate. This may result in changes where wildlife concentrate in different areas which is a change but is hard to avoid.

Mr. Clarkson summarized the Precautionary Approach according to the 1992 Rio Declaration as, “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” This is a different definition that has been used for this hearing.

Mr. Clarkson also summarized that the objective of wetland reclamation should be to re-establish the appropriate conditions so that you can facilitate the natural development of a “self-sustaining wetland.” The information requirements for a water licence application should include a conceptual mine design and a conceptual reclamation plan. The application should indicate areas of existing wetlands and approximately what proportion will be disturbed and reclaimed into a mixture of low upland hills and marsh and shallow water wetlands. There may be the requirement to leave some wetlands undisturbed based on development and utilization on a regional scale. The wetland information guidelines prepared by the Palmer Group would be extremely costly to implement and has the potential to dramatically reduce the size of the placer industry. These guidelines should be rejected or modified by the Board in favour of a simpler and cost-effective approach such as KPMA’s BMPs that are easier to enforce and will enhance wetland reclamation.

The KPMA BMPs included 2 years in the field that formed a basis for them. Mr. Clarkson recommended that the Parties need to meet to review and amend these BMPs to promote optimum reclamation. Furthermore, these BMPs need to become part of a standard approach for enforceable Class 4 Land Use Permits.

Training is required to both the miners and the mines inspectors with rules that are simple and enforceable to ensure compliance. Reclaimed areas should not require long term maintenance and monitoring should be conducted to check for adjustments for licence conditions.

Additional Intervention Information

The YCM provided a written submission on December 14, 2020. In it, Mr. Clarkson summarized that there are a few options about placer mining in wetlands including shutting down 70 % of industry through the imposition of stringent data collection requirements and complex administrative requirements, continue with the status quo of passive reclamation in mined wetlands, or incorporate simple, effective and easily enforced permit conditions into every placer mining land use permit.

This written submission included the following sections.

Summary and Conclusions:

Most Yukon placer mines have wetlands on their claims with the small exception of those working in heavily disturbed historic mine areas or those on high bench White Channel deposits. There is ample existing field evidence that the placer mined peat land wetlands are passively being reclaiming into marsh and shallow water wetlands with little or no impact on adjacent undisturbed wetlands.

Passively reclaimed placer mined areas have been found to have a higher diversity of wildlife including endangered/threatened species, many types of waterfowl, moose, beavers, muskrats and various varieties of fish. It is only possible to reclaim the original wetlands to a mix of low hills, marsh and shallow water wetlands regardless of the type of original wetland that is disturbed.

There is the opportunity to enhance passive natural reclamation of wetlands, to speed up the reclamation process and provide superior wetlands and uplands using standardized permit conditions based on modified Best Management Practices (BMPS).

The information required to support a water licence application should include a conceptual mine and wetland reclamation plan which can be adapted to suit unforeseen and/or changing conditions. The application should indicate which areas contain pre-existing wetlands and approximately what proportion of these original wetlands will be disturbed and reclaimed into a mosaic of low hill uplands and marsh and shallow water wetlands.

If wetland maps are not available at the time of the application, the Board should grant an interim licence to mine non-wetland areas while employing the BMPs. The wetland mapping could be undertaken, and this licence could then be amended in time for the next season to include mining in wetlands.

Some of the tasks in the wetland information guidelines developed by the Palmer Group duplicate existing requirements already required in the permitting process while others could be extremely costly such as determining the extent of permafrost and the surface and ground water levels/flows in existing wetlands. These guidelines should be rejected by the Board in favor of a simpler, cost-effective approach (modified BMP's) that are easy to enforce and actually enhance wetland reclamation.

The wetland conservation, development and utilization should be considered on a regional (Klondike Plateau etc.) scale. In the event that placer mining changes more than 10% of the natural wetlands in these regions each new application should be required to leave some portion of the original wetlands undisturbed.

YG, First Nations and representatives of industry and other NGOs need to get together to review, amend and sanction a revised version of the KPMA's BMPs. These revised BMP's need to become part of the standard boiler plate conditions of any class IV land use permit.

Reclaimed wetlands should not require long-term maintenance and management.

Introduction to Placer Mining:

Placer mining has been operating for more than 135 years in the Yukon. Gold first discovered 1885 in the Fortymile district Yukon. Placer Mining is the cornerstone of Yukon's economy with virtually continuous gold production even during the great depression of the 1930's and through several recent recessions. Placer gold practically bankrolled the entire Dominion in the early 1900's. Placer mining is especially important to Yukon's communities such as Dawson City, Mayo, Haines Junction as well as to Whitehorse. Most Yukon placer mines are family-owned and operated.

Most placer miners are Yukon residents. Over 90% of mine owners and 68% of their employees are residents. Approximately 92% of their operating expenses are spent in Yukon with significant spin-off benefits to many other private sector businesses. Placer mining employs 400- 600 people directly and additionally over 600 people in service industries. It is presently the Yukon's second largest industry. This robust industry has over 150 family-based operations with cumulative gross revenues exceeding \$140 million dollars annually. The total gold production from 1898 is worth over \$35 billion at today's prices.

Inherent Constraints of Placer Mining:

Placer deposits are inherently very erratic and difficult to outline with certainty. This is why virtually all Yukon placer mines are relatively small (2 to 6 employees) privately financed, family owned and operated ventures. Placer miners need to be flexible and change their conceptual mining plan to adapt to changing and/or unexpected physical, geological, and financial conditions. Therefore, a placer miner usually cannot provide the Water Board with anything but a conceptual mining and reclamation plan, strict adherence to more detailed plans would not allow the flexibility required to respond to changing or unanticipated conditions.

Yukon Placer Deposits:

Most Yukon placer gold deposits occur under or beside streams which are usually located in wetlands. Activities involve the stripping of surface vegetation, the thawing and removal of overlying permafrost soils and gravel.

Wetlands are Extensive and Important:

Wetlands are important ecosystems. Virtually all classes of wetlands regulate and purify surface water flows, sequester carbon and provide wildlife habitat. The Predictive Ecosystem Mapping carried out by Bond (2016) showed that the total land disturbance in the Indian River drainage basin is .29 % in an area that has 60 km² of wetland coverage.

Wetlands Reclamation Objectives:

The objective of wetland reclamation is to re-establish the appropriate saturation and/or flooded conditions, soils and topography in order to facilitate the natural development of a self-sustaining wetland habitat. This should include a mosaic of landscapes, incorporating several ponds and lakes, wetlands, and interconnected drainage systems with vegetated uplands. It is most beneficial if the reclaimed habitat also re-establishes a suitable environment for culturally important species, such as waterfowl, moose and beaver for First Nations as well as other hunters and trappers.

Wetland Reclamation Science:

Most of the Yukon and its placer mining areas are not mapped for wetlands. There is a complete lack of previous experience with wetland reclamation other than passive reclamation which has been occurring in the Indian River valley for almost forty years and throughout the Klondike for over 100 years.

Challenges of Wetland Reclamation:

Placer miners have been mining wetlands in the Indian River valley for almost 40 years and for over 100 years in other areas of the Klondike. Wetlands have been passively reclaiming themselves all this time. It would be incredibly expensive, frustrating and imprudent to attempt to restore post-mined sites to peat land wetlands given the high likelihood of failure. Many of these refilled and flattened/leveled areas would end up reclaiming as dry land or upland habitat instead of any class of wetlands. Any proposed Yukon wetland reclamation techniques need to consider various limitations such as the lack of previous local experience, the difficulty to predict the success of reclamation except passive reclamation, the limited financial / technical resources and significant investments of placer miners.

Peat Lands Co-exist with Passive Wetlands:

Field experience and the many wetland maps and aerial photos of the Indian River indicate that the original peat land wetlands co-exist with passively reclaimed post mined wetlands. Many other natural disturbances influence the ground water table and water flows in wetlands including precipitation. Forest fires can thaw significant areas and burn the overlying vegetation and insulating peat layer. The Yukon has forest fires in almost every region approximately every 100 years and there are cyclical changes in the temperature, precipitation and permafrost distribution. The best available physical evidence indicates that no buffer is required between the bogs, fens and swamps that you want to preserve and active placer mining.

Ecological Functions of Wetlands:

All classes of wetlands provide the stabilization of water flows, filtering/ purification of water, storage of carbon and the provision of wildlife habitat. Research conducted in the Indian River Valley indicated that many songbirds and waterfowl were common to undisturbed peatlands and post mined marsh and shallow water wetlands; and that all habitats including post mined areas hosted species of concern (Chevreux 2014, Settingington, 2017). Some species such as moose, caribou, foxes and many birds can use both wetland and upland habitats. Research conducted by EDI (Settingington, 2013) indicated a high

density of moose and other wildlife species in post mined areas. Many species such as waterfowl, fish and aquatic insects are completely dependent on (open water) wetlands for breeding habitat and survival.

Fundamental Differences with Permafrost Wetlands:

There is a need to understand the fundamental differences between the nature and ecological functions of northern permafrost wetlands and their southern counterparts (upon which almost all published research is based). Wetlands provide carbon storage, regulation of water flows (on a daily and seasonal basis), filtering/purification of water and wildlife habitat. Permafrost peatlands do provide water purification and habitat as do all other types of wetlands. However, Yukon permafrost peatlands often have less than 1 m thickness of peat which is thawed on the surface only during the brief peak summer months. This drastically limits the ability of permafrost peatlands to store carbon as compared to their southern counterparts.

Water Flow Moderation of Wetlands:

Permafrost soils are generally impermeable and confine water flow to the thin surface active layer. This active layer is usually frozen from October to July. Streams with permafrost peatlands experience extreme reactions to spring melt water and storm events. Many of these streams go from large rivers in the summer to almost immeasurable flows in late winter/early spring. They also experience extensive flooding after storm events. In permafrost and discontinuous permafrost areas, deeper lakes and ponds which do not freeze to the bottom often provide greater daily and seasonal flow regulation than peatlands. Post placer mined areas with underlying thawed gravels provide year-round groundwater storage and flow regulation which is not commonly found in permafrost areas.

Practical Steps Required for Wetland Reclamation:

The intent of “restoration” is that the habitat has to be identical to the natural conditions that existed prior to modification. The intent of “reclamation” is to return a site disturbed by mining or exploration to a condition where it will be able to re-establish a suitable productive environment which is not necessarily identical to the one disturbed. It is important to stress that the goal of wetland reclamation after placer activity is reclamation not restoration.

Appendix A: Overview of Best Management Practices (BMPs):

Appendix A of the written submission included an overview of a variety of Best Management Practices for the Board to consider for implementation of successful and cost effective reclamation of a placer operation.

Summary Responses to Information Requests

DIRECT QUESTIONS

1. Wetlands are linked to water flow paths, water quality and quantity. If it is determined that active mining *cannot* be avoided in or adjacent to a wetland:

- a. Can a bog remain protected when mining occurs adjacent to it?

Response: Fens and swamps are the most common types of wetlands in the Indian River valley and bogs are relatively rare. The wetlands mapping by McKenna (2018) shows that bogs in the Indian River valley are found on old river deposits and are usually surrounded by fens. They are also found on very steep, northerly aspects of the valley sides where the cooler temperatures are associated with permafrost. The mined wetland areas have been reclaiming passively during the almost 40 years of mining in the Indian River valley and for over 100 years in other areas of the Klondike. The bogs on the Indian River near Quartz Creek have had from 27 to 37 years to deteriorate after placer mining (with no land use reclamation) occurred right next to them but they have not deteriorated.

McKenna's maps and aerial photos indicate clearly that mining has occurred directly adjacent to bogs with not even minor disturbance in the Indian River valley. The lack of impact is probably due to the high ground water table and thick extensive fine grained surface black muck which is relatively impervious. The best available physical evidence indicates that no buffer is required between bogs (located in valleys or low benches) and active placer mining.

b. Is there a known buffer for protection of different types of wetlands?

Response: In previously heavily mined areas of the Indian River near Quartz Creek and the more recently mined areas near Eureka Creek, there are existing bogs, fens, and swamps located directly adjacent to mined areas. McKenna (2018) noted "minor disturbance by anthropogenic (man-made) activities to vegetation and/or soils at surface due to, but with limited or no alteration to underlying materials/landforms..." for a few of the many swamps and much less frequently for fens adjacent to mined areas as noted.

c. What information is required to ensure that bogs and fens remain protected when mining occurs adjacent to them?

Response: The physical evidence of almost 40 years of mining in the Indian River valley indicates that bogs, fens and swamps remain protected even when mining occurs directly adjacent to them. This is probably due to the high ground water table and abundant organic black muck which is relatively impermeable. The only evidence which should be required is a detailed but conceptual mine and wetland reclamation plan based on the existing or revised KPMA BMPs.

The Board may also feel it needs evidence of a high water table and/or deposits of relatively impermeable soils (such as black muck or silt-clay rich glacial tills) near the surface, however, almost all peat land and swamp areas in the Yukon have these features.

d. How far outside the claim or project area is information required to satisfy the board that mining adjacent to wetlands will remain protective?

Response: Bogs, fens and swamps are located directly adjacent to mined areas and McKenna's maps indicate no impact to the vast majority of virgin wetlands with "minor disturbances" to a few swamps, even fewer fens and no disturbances to bogs by mining. Therefore, based on the physical evidence from McKenna's wetland maps, aerial photos and observations on the ground, there is not a requirement for information outside the claim or project area.

2. Please expand on the 10% disturbance threshold outlined in Yukon Chamber of Mines' presentation. Where did this value come from and what was the rationale for this threshold value?

Response: Jeff Bond (2019) indicated in his Predictive Ecosystem Mapping (PEM) wetland evaluation that 0.29% of the TH traditional territory has been modified by human activity. The Indian River valley is only one of many wetland complexes in TH traditional territory and the Klondike Plateau. It is relatively small at 53 km² but it has generated 2.1 million crude ounces of placer gold since the Klondike Gold Rush (~4 billion dollars of direct economic activity at today's prices).

Based on the physical evidence in McKenna's wetland maps, aerial photos and on the ground observations over the past 35 years, it is Mr. Clarkson's opinion that the levels of disturbance in the Indian River are far from a critical stage. If placer mining continues without enhancing natural (passive) reclamation of wetlands this issue should be re-visited when and if the level of the disturbance reaches 3 to 4 times the present disturbance (10%). If placer mining is conducted in the future with enhanced natural (passive) reclamation of wetland areas to a mixture of low hills, with marsh and shallow water wetlands; this would allow mining and reclaiming these areas in perpetuity.

GENERAL QUESTIONS:

1. What is the appropriate temporal and spatial scope for baseline wetland information required for an application for placer mining in wetlands?

Response: For every application, the information required to support a water licence application should include a conceptual mine and reclamation plan which can be adapted to suit unforeseen and/or changing conditions. In previously unmined areas with extensive undisturbed fens and bogs, the application should indicate which areas contain pre-existing wetlands, the type of wetlands, and approximately what proportion of these original wetlands will be disturbed and reclaimed into a mixture of low hill uplands and marsh and shallow water wetlands.

It is only possible to reclaim the original wetlands to a mix of low hills, marsh and shallow water wetlands regardless of the type of original wetland that is disturbed. No amount of baseline studies, permafrost investigations or ground water or surface water measurements will change this. The work by McKenna (2018) shows there is little or no disturbance to existing wetlands over the long (30-40 years) and short term even when mining occurs right next to them. These mined areas will tend to reclaim passively into a mixture of low hills with marsh and shallow water wetlands even if no active reclamation measures are undertaken. However, enhanced passive reclamation should speed up the wetland reclamation process and improve the resulting habitat.

2. Given the status of wetland mapping in Yukon:
 - a. What wetland mapping information should be required as part of an application for a water licence?

Response: For every application, the information required to support a water licence application should include a conceptual mine and reclamation plan which can be adapted to suit unforeseen and/or changing conditions. In previously unmined areas with extensive undisturbed fens and bogs, the application should indicate which areas contain pre-existing wetlands, the types of wetlands, and approximately what proportion of these original wetlands will be disturbed and reclaimed into a mixture of low hill uplands and marsh and shallow water wetlands on his or her claim block.

In new mining areas or areas where there is not a history of mining it may be necessary to indicate if there are impervious soils (such as black muck or silt-clay rich glacial tills) which would retain water in adjacent areas and/or the depth of the ground water table and/or the presence of permafrost. It is not necessary to provide detailed surface and/or ground water flows or other detailed environmental data.

If a miner is applying for a water licence in the winter months in areas which have had no previous mining, no previous wetland mapping but have extensive undisturbed fens and bogs, he/she should be granted an interim licence to mine in areas with no wetlands. Then he/she would amend his/her licence once he or she is able to map the wetlands during the open water season.

- b. Who should provide that information and when?

Response: The applicant should provide that information; however it would be beneficial if YG conducted or contracted the mapping of wetlands on a regional scale in areas with placer mining activity. This would provide a more consistent and regional level of mapping for assessors and regulators. In the event this regional scale mapping is not available, a short introductory booklet or course about wetland mapping should be made available to individual placer miners so that they could map the wetlands with a hand-held gps and determine the locations and areas of various types of wetlands on their claims.

3. What post-reclamation monitoring is required to verify that wetland reclamation techniques are effective? Who is responsible for verification?

Response: The establishment of reclaimed wetland will take in the order of 10 to 15 years. Reclaimed wetlands should not require long-term maintenance and management. Monitoring should be conducted

by mines inspectors as they are the most frequent officials to inspect mines and have the authority to enforce water licence and land use permit conditions. Mines inspectors need to be trained by government and industry so that they can recognize the various classes of wetlands and the best management practices required to reclaim them. The inspectors need to ensure that erosion has been limited, revegetation of disturbed areas has occurred, and that the reclaimed wetlands are saturated and/or under water. Monitoring should be conducted to see if adjustments need to be made to the standard permit conditions (Best Management Practices) from time to time.

4. What requirements in a licence or mining land use authorization would improve effectiveness of wetland reclamation and that reclamation objectives are achieved post-mining?

Response: There is ample existing field evidence that the placer mined peat land wetlands are passively reclaiming themselves into marsh and shallow water wetlands, generally with little or no impact on adjacent undisturbed wetlands. There is the ability to enhance passive natural reclamation to speed up the reclamation process and provide superior wetlands and uplands using standardized permit conditions based on modified best management practices.

The KPMA's BMPs form the best and only basis for enhancing passive wetland reclamation. The KPMA's BMPs are a basis to create an affordable and conceptual boiler plate that could be used for Class 4 Land Use permit conditions. It was also suggested that YG, First Nations and representatives of industry and other NGO's work together to review, amend and sanction a revised version of the KPMA's BMPs.

5. Because techniques of placer mining reclamation of wetlands transforms bog and fen wetland types to marsh and shallow water bodies:

- a. How does this transformation on a claim-by-claim basis affect the watershed-scale wetland ecosystem?

Response: All classes of wetlands provide the stabilization of water flows, filtering/ purification of water, storage of carbon and the provision of wildlife habitat. Passive placer mining wetland reclamation transforms bog, fen and swamp wetland types to a mixture of low hills with marsh and shallow water wetlands. The transformation to these reclaimed uplands and wetlands will provide a greater diversity and productivity for most types of flora and fauna. They also will provide superior stream flow regulation/moderation because of their ability to store transfer surface water to and from groundwater reservoirs even during the late winter months. Post placer mined areas with underlying thawed gravels provide year-round groundwater storage and flow regulation which is not commonly found in permafrost areas.

- b. Are shallow water bodies and marsh wetland types over-represented because of reclamation and what is the cumulative effect?

Response: In the Indian River valley the proportion of shallow water and marsh wetlands generally increases from 4-5% of the land surface in the original peat land and swamp wetlands to 20-25% in the reclaimed wetland areas. The reclaimed wetlands would include a varied landscape, incorporating several ponds and lakes, wetlands, and interconnected drainage systems with vegetated uplands. In permafrost areas, deeper lakes and ponds which do not freeze to the bottom often provide greater daily and seasonal flow regulation than peat lands. Shallow water marsh wetlands contribute to more wildlife diversity/abundance and provide superior moderation and filtration of surface water flows. The new wetlands would also direct surface water to ground water reservoirs which would increase stream flows during the late winter/early spring (March/April) period of the year.

- c. How does the transformation affect wildlife?

Response: The reclaimed wetlands would be a mix of low hills with marsh and shallow water wetlands. Marsh and shallow water complexes which are by far the most significant wetlands in terms of wildlife diversity (National Wetlands Working Group, 1988). Research conducted in the Indian River Valley

indicated that many (50%) species of songbirds were common to both the undisturbed peat lands/swamps and to the post mined marsh/shallow water wetlands (Chevreux, 2014). Chevreux (2014) also found that all habitats including post mined areas hosted species of concern. A review of Chevreux's work by Settingington, Environmental Dynamics (EDI, 2017) confirmed these conclusions and indicated that the passively reclaimed wetlands had a greater abundance of threatened species than the original wetlands and thus had a higher ecological index. Earlier field research work by Settingington (2013) conducted for YESAB indicated that reclaimed placer mining areas in the White Gold area had a greater abundance of moose despite the better access from mining roads and trails and the increased pressure from hunters.

Waterfowl, shore birds, moose, beavers, muskrats, pike and grayling as well as a variety of other animals and insects thrive in the marsh and shallow water habitat. Moose derive most of their required minerals from Shallow Water Wetlands. Shallow Water Wetlands provide protection for moose from predators. Many species such as waterfowl, fish and aquatic insects are completely dependent on (open water) wetlands for breeding habitat and survival.

Local residents and miners report increase densities of moose, beavers, muskrats, waterfowl, shorebirds and songbirds in the passively reclaimed areas. Therefore, the transformation already has created a more diverse and productive habitat for almost all wildlife including song birds, waterfowl, shore birds, moose, beavers, muskrats, bears, lynx, porcupine, wolf, grayling, pike and other wildlife. These animals will not necessarily be where they were traditionally (100 years ago) but instead would tend to congregate around the reclaimed wetlands and uplands.

6. Can the utilization, development and conservation of wetlands be achieved using a management approach similar to the DFO watershed authorization model?

Response: The utilization, development and conservation of wetlands can best be achieved with flexible management approaches. For example, very limited basic information including a conceptual mining and reclamation plan should be required for renewals of existing licences and for traditional/historic or extensively mined areas. Additional information such as wetland mapping and wetland reclamation plans may be required for areas with extensive bogs and fens in which placer mining has never previously occurred. It is not necessary to require detailed wetland mapping and/or wetland reclamation plans in previously mined areas and/or areas with no bog and fen wetlands.

The DFO watershed authorization is based on the distance and gradient of streams from Chinook spawning and migration routes and thus their sensitivity to placer mining activities. Stream sensitivity classification maps were generated based on stream gradient and distance, two parameters that are easy to obtain from topographic maps. The authorization allows any prospective miner to determine the sensitivity of the stream and corresponding limits to sediment discharges and disturbances allowed in that classification before he gets involved in the licensing applications. The background information provides a methodology for determining flood events, designing stream diversions and for limiting the impacts of other activities on fisheries and fish habitat depending on the sensitivity of the streams. The documentation is written in common English and is user friendly and thus allows anyone with basic mathematical and literacy skills to complete the required DFO stream calculation sheets.

It is more difficult to create a map with the classification of wetlands on it than it was to create the DFO watershed maps. A qualified professional would have to complete a desk top review of satellite images and/or air photos followed by some field investigations as was done by McKenna (2018). Therefore, it would be much more difficult, time-consuming and expensive to create a watershed authorization for each placer mining watershed in the Yukon.

However, it would be useful to incorporate the flexibility of the DFO watershed authorization model in the management of wetlands. It would also be useful to produce DFO style documentation and training to assist in teaching miners and mines inspectors about the various classifications of wetlands, how to

identify them in the field, how to apply best management practices to enhance passive reclamation, and how to recognize changes in adjacent virgin wetlands.

7. How does the cost of reclamation for a placer operation in non-wetland areas compare to the cost of reclamation of wetlands?

Response: The KPMA BMPs for the reclamation of wetlands take advantage of a typical post-mining landscape. The BMP's use the existing mine pits and settling ponds for shallow water wetlands and the mounds of overburden for low surrounding hills. BMP's including the separate storage for stripped organic soils, the contouring of piles of overburden, the spreading of stored organic back over disturbed areas are examples. These would not be additional costs.

The additional work required for wetland reclamation would include sloping of the edges of the pits to form shallow slopes suitable for aquatic and sub-aquatic vegetation; and to make the edges irregular by filling or excavating the pit edges. The costs of this minor additional work for wetland reclamation is offset by the fact that a miner should not completely refill his/her open pits or settling ponds with overburden. This would be a cost saving.

It is necessary to ensure that the pits and settling ponds remain open and are allowed to accumulate up to 2 m depth of water from ground water and/or surface runoff. In any event, the costs of reclamation in wetland areas would only be slightly more expensive than the costs of reclamation in non-wetland areas, especially when the wetland reclamation BMP's are incorporated into the conceptual mining plan.

a. What is the economic impact of reducing mining in wetlands?

Response: Some preliminary mapping of wetlands has indicated that about 70% of the Yukon's placer mines have wetlands on their claims. Almost every placer mine, except those operating in heavily disturbed historic placer mining areas or those operating on high bench White Channel deposits are likely to have disturbed wetlands on some of their placer claims.

The placer gold production for 2020 is currently at about 83,000 crude ounces with a value of \$164 million, Cdn. (pers com Jeff Bond). About 50% of that gold is produced by Indian River valley placer mines.

Therefore, the direct economic impact of mining this year is greater than \$164 million. That does not include spin-off or multiplier effects due to the employment of goods and services industries which often increases the economic impact by 1.5 to 2.5 times (greater than Can \$246 to \$410 million). The Yukon's rural communities of Dawson City, Mayo and Haines Junction as well as the main city of Whitehorse are strongly impacted by placer industry spending.

It is difficult to assess the impact of reducing mining in wetlands unless the amount of the reduction is known. If the worst-case scenario with no mining allowed in undisturbed wetlands, then the impact would be somewhere greater than 50% (Indian River valley production) and probably less than 70% (total mines with wetlands). This assumes that miners would still keep investing in the remaining placer mining despite this greater regulatory uncertainty.

Assuming 60% of the placer gold production would be lost; this would be equivalent to about Can \$148 to \$246 million annually to the Yukon's private economy. This would not include the costs of litigation by miners who could sue the YG and/or the Yukon Water Board for a loss of their income.

The total GDP for the Yukon in 2019 was about Can \$2.6 billion including \$1.1 billion in Federal government transfers leaving a private economy of about \$1.5 billion. Therefore, the loss to the Yukon economy would be in the order of 10% to 16% of the Yukon's GDP. There would of course be large personal losses of income and investments by 60% of the existing placer miners, many of whom are 2nd to 4th generation family owned and operated businesses.

b. If security is required for a placer undertaking, what information is required to calculate it for reclamation of wetlands?

Response: Security should only be required for individuals or corporations with a clear record of non-compliance for reclamation. Security should not be based on third party (for profit) construction costs as miners already have heavy equipment on site and probably would earn a higher income at third party equipment rates than they do when mining. Security only has to be sufficient to convince a miner to actually do the required reclamation and therefore should be closer to his actual costs (not third party rates with mobilization/demobilization and included profit).

8. Can the use of adaptive management plans mitigate adverse effects to wetlands from placer mining?

Response: Adaptive management plans should be included in any wetland reclamation plan and included with the plan in any land use permit application. They can help to mitigate any adverse or unexpected effects from placer mining. The adaptive management framework should indicate what actions would be taken in the event that the wetland is not reclaiming as required and in the unlikely event that mining is impacting adjacent virgin wetlands.

9. Indigenous Knowledge (IK) was raised as a source of information to help understand landscape connectivity. Please provide information on how the Board could incorporate IK on an application-by-application basis and when IK should be provided.

Response: Every type of knowledge from First Nations peoples and non-First Nation residents and workers who have experience in the areas proposed for mining should be sought by the Board. Local residents often have invaluable experience with stream flows, groundwater tables, wildlife and plants that they encounter every day. This local knowledge can greatly broaden the scope of the information, detail rare events and provide a historical perspective.

6.9 VUNTUT GWITCHIN GOVERNMENT

Representation Summary

Mr. Brammer and Mr. Nijootli introduced themselves as representatives of the VGG and would be speaking about wetlands. To ensure that the important points raised by the VGG is accurate the following is taken directly from the Virtual Hearing transcript with no summarization or interpretation.

MR. BRAMMER

Good morning, everyone. My name is Jeremy Brammer, Fish and Wildlife Manager, Vuntut Gwitchin Government.

MR. NIJOOTLI:

Yes, I'm going to do a presentation on behalf of one of the boards and committees on behalf of the First Nation yesterday. Jeremy Brammer mainly speaking on wetlands, and a little bit about myself.

I like a little bit of gold. I like a little bit of salmon, and I like a little bit of moose meat. That makes me a Yukoner, and I hope you can all say the same for yourselves. And right now, to speak openly and directly, with the Placer Mining Act, that means you can start mining in British Columbia and you can finish [inaudible]. That's the legislation of this one. That has to change. Nevertheless, with out traditional territory here, Vuntut Gwitchin traditional territory, I think for many, many years before the land claims settlement, the elders were quite concerned about their traditional territory in terms of the ecosystem and what it means, and I think that their interest was protecting the watershed right from the headwaters in the mountains and we see that watershed and the water right down to the ocean. That's what they wanted.

So, in that sense, I think that's probably the most naturalist view one would have, that they spent some amount of time for their language and culture. I speak my language and understand it. So, looking at the watershed, we follow suit in terms of protecting some of the areas in our traditional territory, the

watershed and the basin. But we do what we can at this point. We looked at coplace. We've got a whole bunch of coplacers. 2,000 lakes here, shallow lakes. At this point in time in history, there were 250,000 waterfowl lakes. I spent years in that area, but there isn't that population any more, and some [inaudible] Lakes, the water level in the lakes is going down. A big question is that happening, a lot of whitefish with growth or ice melting and it's a combination of accumulation of [inaudible].

So, cumulative effects in terms of what's happening out there right on the moose population's – I would say – healthy in that area, and stream of wetlands and protecting wetlands. And speaking of ducks at this point [laughter].

The habitat changes, you know. Like, for example, a lot of moose are going out of the north slope side in that area of the land. The watershed is going north, comes into the Bearing sea watershed, going south. So, in the watershed going north, the moose are going up there in making that their valley, habitat near the basin. They just, like, walk and browse, bulls [inaudible], and they can feed off the willows in that area and that food source available to them. So, now they haven't, and they're moving up north. So, that's been going on. Where there used to be whale bones, there are now moose bones. They're probably migrating [inaudible] They're also migrating moose from Crow Flats [inaudible]. But the population of moose is going down. The numbers are down due to hunting predation and [inaudible].

Speaking of that, the wildlife and the habitat is gone; but as far as, like, so that's the coplanned area.

So, getting into these other areas, we also wanted to protect the headwaters of the Fishing Branch River, and that's before it was land use,, we had information from elders up there. So, the information and the decision came from the elders on that. They wanted to go in and to protect the area So, we've done that, and we did the best we could to protect the whole watershed, from the height of land. A chum salmon spawn there freshwater fish too. And we'd like to continue with that wildlife in the watershed of that area.

Well, you see what's happening at this point there's a lack of research in terms of the basin, plus Indian River system;; and we also have Ch'ihilii Chik the whitefish wetlands. We've got that are protected. So, we've gone to the extent to protect areas in our traditional territory for wildlife for the sake of our wetlands and all the other ecosystems in that area. Probably our goal in the future is ecotourism, that would create an opportunity. Generally for a pristine area I would say the [inaudible] River is a pristine area affected by climate change and other effects. So, we can look at other effects on this area to say, 'Well, this is a pristine area, and this is what happens when there are outside effects on this area.' So, in terms of [inaudible] That would be idealistic to look at.

So, how does legislation affect the whole watershed. That would be a navigable water. The Toad river and Porcupine River are navigable water, they're basically no mans land. But the lakes on settlement land are under the Final Agreement and that's everything that's on settlement land. So, other than the area within a watershed protecting the watershed, we should re-jig the whole system of wetlands because they're wetlands under that preexisting establishment as a protected area.

Now, what does all this mean? If there is a placer miner on Crown land within our traditional territory – let's just say at some point in time, there is placer mining, how would that affect the navigable water? How would that affect the wetlands? What is that really like? Protect the wetlands [inaudible]. What is the socioeconomic benefit and the impact, the environmental impact, the economic impact, social impact? Consideration for nature probably won't evaluate that. At this point, that's a broad term. And there's no definition for that at this point.

We can put a definition in for our own traditional territory, and it being a ruling definition for now and into the future as the [inaudible]. At this point, we'd like to keep it as probably like keep that area as it is for now. We haven't done any analysis on that area to the extent that an upstream user has an effect on a downstream user if they're industrial activity upstream on the Porcupine River it just happens to be located on the river system 16 miles [inaudible]. So, in a practical sense, other than the legislation itself, how would

an upstream industrial development affect downstream user, how would that effect us? We wouldn't know that at this point, because we have never had a history [inaudible] of [inaudible] measuring arsenic and other metals in the water. [inaudible] we wouldn't know.

So, we need probably to do some research down there and do a database collection of the river system in terms of what's in there so we can have a healthy river. That would be, like, a good kind of project for the Yukon. For example, we don't know what's going on with Yukon River and the effects from mining in that area and placer mining. Lets just say, with placer mining, at this point in the stage move a fair bit of overburden to get down into the coarse rock to do some placer mining. Then what is in that overburden and then where does that go? Do they monitor, with a water monitor? and specially right in the creek? that goes downstream, and how is that effect the whole watershed? What's in that overburden at this point in time?

So, when it comes to placer mining, I placer mined for one whole season. So, I've got a good idea what that's about in essence. And I've been involved in land claim settlement. I've been a part of that and I've a clear understanding of the main chapters. So, I think that the effect of that [inaudible] the wetlands and the water gets affected by mining and what changes need to be made. The fact that we need environmental studies to say 'well how do you continue with mining and how do you still protect watersheds? The Indian River, the same thing. It's probably more complex thing to do, but it is more complex right now with the lack of [inaudible]. The question is: How are you going to keep a ma and pa operation going and still have healthy river system? At the end of the end of the day that's what it's all about. How do you do the socio-economic environmental impacts to watershed system or a creek?

For example, if you take Black Hills and Water Creek. I call it 'Water Creek'. That's from Black Hills down to Stewart River. In 1995, that was a pristine creek, all the wilderness was there. It's not there anymore. It's a tailings pond right from start to finish. So, if you look at that area, and then, the socio-economic environmental impact of that river system there. It's one big, like, mine from 1997 to 2000. So, how many years did that take? From wall-to-wall to the hill, like, having tailings ponds all the way down to the mouth. Now, the miners have moved in there and wanted to placer mine. One of them went in there and started cutting firewood so he could start making money. What does that really say? We're talking about bureaucracy, about legislation, and the effect of mining, you've got to look at the lay of the land when that's done, and what's that ecosystem system in the Yukon? And what can we do about it?

We live here, and we're probably going to be here for a while, and what do we want the Yukon to look like in 20 years from now or 30 years from now? What can we do with the big sand piles that's all along the headwaters of the watershed up the dome, King Solomon Dome and all the waters coming out of there. What can we do about that? And the other pristine watersheds, some of the watersheds that are flowing out and the possibility of the effects of mining on those areas?

And in the Yukon, how many mines are being monitored right now on their tailings? And where is the economic benefit to Yukon? And I think that's basically – how do we, like, keep the economy going for placer mining but still have it done in a viable way for the ecosystem, and do the mining at the same time? There's like, still a fight going up Hunker Creek, and there's other, like, placer mines that are, if you look at it after 1993, how much overburden? So, as the mining carries on or placer mining in some of these areas, just an example, all the areas that re mineable have been mined, now they're going to move more and more overburden to get to the [inaudible] gold. So, what happens with all that overburden? Its like it gets pushed into the whole system watershed, and I think that has to change. So, protecting wetlands is important, but also, enhancing wetlands. There's migrating birds. There's freshwater fish, variety of them, plus there's other areas that are salmon-spawning areas. So, the history of the Tr'ondëk people and the headwaters of the Klondike River, and the population of salmon species that spawn up in that area and the devastation to those spawning areas. To turn that around, there's just no real interest by government to basically restore that area to a point where there is viable salmon spawning up there.

So, what do we change? What is the definition of impacts and the benefits from the negative impacts? So, [inaudible] traditional territory we'd like to keep it the way it is right now in terms of – until we can do some more research in this area. So, I think we're fortunate, and we took advantage of the political climate and protected the water in the watershed and some of the wetlands protected. We've had experts working on it and pushing and protecting [inaudible] and were involved in doing this. Especially the Ni'iinlii Njik, Fishing Branch River. And that's really a unique area up there. Its possibly going to take legislative change in terms of the Acts that effect water systems, and waters that effect fish, salmon, and habitat. Anyway, that involves [inaudible] and peoples expertise. And the fact that we could have [inaudible] is the main thing. If you could have six people in a room agreeing to a plan, there's always going to be compromises going to be made. But change [inaudible]. Not everyone will agree with it, but it's a best effort. That's my experience being involved in plans and negotiations. So, thank you very much. Are there any questions or any comments from anyone out there?

Mr. Brammer asked if there were any questions and indicated that Councillor Esay Scahfer was also present to respond to questions from the Board.

Board Questions

BOARD MEMBER: CHAIR, MR. MCDONALD

I have a quick question. I wonder if you could comment on your sense of the state of mapping and the quality of information that you have about the wetlands in the Vuntut Gwitchin traditional territory. Do you have any thoughts about that? Is there a lot of work to be done? Do you feel confident that you understand where the wetlands are and what the quality of the wetlands is and what activity is taking place?

RESPONSE: MR. NIJOOTLI

That information is definitely accessible to the public through the Wildlife Branch system or basically [inaudible] history. There's the area of the co-plan, There's the north half of the park, which is a federal park, the north half. The south half of co-plan is settlement land, but they're managed in conjunction under the same principles and philosophies of the parks. So, there is consistency there, and then, also with the [Gwich'in] Eagle River area, and that's Ch'ihilii Chik. So, that's that whitefish wetlands; also, the Fishing Branch River, that's the south part of our traditional territory, and that's Ni'iinlii Njik. So, some information is available, yes.

RESPONSE: MR. NIJOOTLI

The interesting part about Ni'iinlii Njik is that the whole watershed is protected from the height of land around Ni'iinlii Njik?

BOARD MEMBER: MR. WARNSBY

Thank you, Mr. Chair, and thank you, Mr. Nijootli, for the presentation from Vuntut Gwitchin. I would like to ask one quick question I had, because I think Mr. Nijootli made a comment that kind of hits to the heart of a lot of what I think the Water Board is going to struggle with: How do we protect the river without putting too much pressure on mom and pop, and I'm just wondering if Vuntut Gwitchin – from that – has any idea of what we can do in terms of additional information that may be needed with projects or in terms of reclamation that can help balance those two very important objectives. Thank you very much.

RESPONSE: MR. NIJOOTLI

Yes, I think what we've done, as an example, is to look at one creek system in Tr'ondëk traditional territory, the Blackhill Creek. They mined that area out, and we didn't exact that legislation around it. So, [inaudible] traditional territory.

So, we want to look at how we can protect some of these areas. So, we've done it with the Fishing Branch river. And because there was no other legislation that will allow us to protect that whole area to keep it in a state of pristineness and to keep the ecosystem intact without protecting a whole area and having a tougher legislation than the Placer Mining Act itself. That's what we had to do, not oppose anything, but the goal is to protect that area. In a sense, basically, if you look at it as a pilot project and you look at the Blackhill Creek; if you look at that area and assess that into a pilot project to see what are the negative impacts to that area, the environmental impacts versus what the socioeconomic benefit was of that whole area to who and to what entity, an individual with a capitalistic view and how does that change?

Like, you're impacting other – probably the private sector in a sense. So, it gets complicated in that manner. So, in a sense, how do you still protect that ecosystem and let ma and pa operate?

The point is that it takes time and money. How would you ever know if there was gold down there or there's no gold there at all to sustain itself and make it sustainable? So, that's a complicated one. But we never solved that issue or the Yukon has to say, 'Well, let's just wait until we solve some of these issues.' It's just like we've got a blindfold on and going forward with a 1898 Placer Mining Act, you know, was for that area.

Whereas, in today's world, there is much bigger equipment to move dirt a lot faster and extract a lot more and expand a lot more geographically on the surface of the bedrock and extract as much gravel and move it to the side, and then, extract the gold. So, basically, how do we see that benefit? I know with some hard-rock mining, there's a lot of drilling and a lot of analysis to go through just to see that it's viable to do that. And if it's not viable, they won't do it. So, it has to be viable to get investors to come in and hard-rock mine basically through that investment mine. That profit has to be there.

And the other part about that is when you basically hear a presentation from a geologist about hard rock mining and mining and how can they can extract the gold and how they can basically do all that's been assessed in terms of of drilling in that area. There's some real extreme calculation as to how they can extract the minerals from that area and make a profit, and they're really intelligent in that sense.

But when it comes to the other side to look at what's going to be in the tailings pond in terms of the fallout from that, they don't seem to know very much, you know. All of a sudden, they don't know much at all. So, basically, what's up with that? They're extremely intelligent in one area because there's a profit. Then on the other hand, like, there's a fallout maybe on tailings pond, then, all of a sudden, they're unintelligent. So, that's just some sarcasm there in terms of some humour, but that's what it is. Basically, in some sense, it's devastating.

But look at the people doing it, its all kind of laughable. The question is: Look at the assessment of what's going to be in the tailings pond after hard-rock mining, what's going to be there and how does the Board get involved with that and what goes into the river system after that, because the water doesn't stop flowing.

And that's based on a hypothesis as to what's going to flow out of that tailings pond into the water system afterwards. Basically, test for what's really in there and test for some certain things, you've got to take the water and test it. And there's always legislatively a way to find a way around that to do that.

There's not very much said about what's going on in Fort McMurray with the oil sands and what they put into the river system. If you go where the water flows through the Athabasca Lake around Fort McMurray and the river that flows through that lake, you can see where the water flows and where the lake water is, and there's a difference in colour. It's very different in colour. But there's no policy or regulation to define what's in the no mans land of that water, what's coming out of the tailings pond from the extraction of tar sands and what's naturally in that lake system. So, there's nothing in policy or regulations to define both, and that's something that we probably need to do in the Yukon.

So, that might mean maybe some hard-rock miner can still make money, [inaudible] but they might make less profit. If there was a little more stringent environmental guidelines for the Yukon, so for the Waters Act and for the Placer Mining Act, yes, hard-rock mining.

So, anyway, that's my thoughts. So, does anybody else have more questions, or do you want to have a discussion on this?

Closing Remarks

The following Closing Comments are taken directly from the Virtual Hearing transcript.

MR. NIJOOTLI

Okay, some closing comments, I think there was a lot said about the Indian River, and the Yukon – my previous mine is 190-something square miles, 190,000 square miles, somewhat land, so there's a lot of land out there.

So, that's the case, so I think maybe there's got to be a different basis to look at how we could look at another river system and how the mining takes places with that and the effects that it has. But if you look at the Indian River, what has never been shown is the last four river bends on the Indian River going into the other system there. And those last four bends on the Indian River have never been mined, but I think they want to get in there. So, I think if there's anything that needs to be left to its natural state is those last four river bends on the Indian River.

I think that would be something of value to keep. Also, I've looked at other areas, but I think all in all, my point of comments, I hope we can work out and find a balance of what the economy would be for the Yukon and what placer mining would be and all the decision-makers that are involved and what does the Yukon look like, like, 20, 30 years from now.

All the First Nations and YG and the Federal Government have jurisdiction in terms of making decisions over some of these areas that are wetlands and how we're going to protect our wetlands, you know, the original wetlands. The wetlands have been reclaimed and how that affects the whole ecosystem of the areas, and basically, how placer mining really affects the north nowadays.

If you look at the Indian River there, they can't mine millings, it's already been mined. So, they're going into the hillside. Now they've got to move 30-to-20 feet of overburden. They call it 'overburden'. So, 30-to-20 feet of soil they've got to move. That's the depth. The width, I don't know, but that's the depth they've got to go. So, where does all that soil go to, you know, and what happens with all that soil? And what kind of effects that has on that ecosystem there, the silt getting into the water, the soil getting into the water, the soluble solids getting into the water; and how this affects the whole ecosystem? I think there's got to be some measure of legislation for all that.

Change is inevitable. So, how is that affecting wetlands and what that's going to be for the future, that's inevitable. That's going to happen. So, how do we do it? We do it collectively and protect some of the original wetlands as is, and basically, the rest they can mine.

You know, there are other things said globally in the world. As George W. Bush would say: 'We're addicted to oil', the previous president of the United States. So, we're looking at a number of people who are addicted to gold. So, historically, that's been proven from 1898. So, the question is: What's reasonable for the Yukon in terms of the economy and the environment in that regards? So, nevertheless, that's my closing comments, and thanks for holding this hearing, and we'll talk again soon. Have a nice meeting.

6.10 LIARD FIRST NATION

Representation Summary

Mr. Stewart thanked the Board Chair and the members of the Board for the Virtual Hearing and initiating this important discussion. LFN appreciates that the Board is charged with the most important of tasks of safeguarding Yukon water. Mr. Stewart asked their legal counsel Mr. Mildon to continue with the presentation.

Mr. Mildon thanked the Board and started with the question of why LFN is at the Hearing. He summarized there is no placer mining in Kaska Territory but historically there has been placer mining on tributary creeks to the Liard River. Given this history, placer miners may return one day to Kaska Territory which is a grave concern for LFN. The presentation was based on Kaska rights and title as one of the three First Nations in Yukon that do not have final agreements. This fact leaves legislative holes for the Kaska. The following are summary points made during the presentation:

- The Kaska filed a claim to aboriginal rights and title for the entirety of their territory through legal action in 2010 with the Court which is in abeyance but this action is an assertion of rights and title in the entire territory.
- The Kaska never ceded, surrendered or extinguished their original title or their associated rights to make decisions about the land, rights to the natural resources on the land and to carry out their traditional practices.
- This will require a 'policy renewal' for an independent tribunal's responsibilities for consultation or the Crown's responsibilities for consultation.
- Placer mining in wetlands collides with fundamental aspects of the Kaska world, and it heightens LFN's elevated concern for the changes occurring across Yukon landscapes due to climate warming and loss of lands to development, both large and small.

Hearing Questions

QUESTION 1. WHAT INFORMATION SHOULD BE REQUIRED TO SUPPORT A WATER LICENCE APPLICATION FOR PLACER MINING IN WETLANDS?

In response to the Board's first question:

- This requires the need to know what the rights are that are exercised in an area.
- This requires strong evidence that the wetland placer development will not compromise ecosystem function or Kaska rights associated with wetland use.
- There will need to be identification of adverse impacts on Kaska rights including consideration of ecosystem effects and impacts on specific species.
- Kaska rights can't be described accurately without the involvement and direction of the Kaska themselves.

Territorial decision makers should not approve a licence until proponents provide several years of comprehensive baseline information that includes:

- The species present in the area and the frequency and timing of use of the area.
- The quality of water before disturbance.
- Cumulative impacts from all regional developments.
- The nature and quality, volume and variability of the water at risk.
- The results of the analysis of the effects of a Crown decision on LFN's ability to ensure the exercise of Kaska rights.

- Decision-makers need reliable information about the ecological thresholds of the watershed, and it needs to be informed by the Kaska perspective.
- The Courts have been specific about the need to take into account the indigenous perspective on an infringement to understand how serious it will be. There is too often a reliance on scientific evidence and not on traditional knowledge or an indigenous perspective.

QUESTION 2. WHAT SHOULD THE WETLAND CONSERVATION, DEVELOPMENT AND UTILIZATION OBJECTIVES BE ON A WATERSHED BASIS AND HOW CAN THEY BE BALANCED ON AN APPLICATION BASIS?

In response to the Board's second question:

- The effectives for wetland conservation within a watershed should be no net loss and ecosystem function.
- This means no immediate or long-term effects from development that may undermine the exercises of Kaska rights now or in the future, including the enjoyment of Kaska title.
- Development should only be permitted in wetlands when the risks to ecosystem health are well understood and the benefits of development clearly outweigh the risk.
- Land use zoning needs to be in place before wetland development. There are no initiatives underway to do any land use planning that are grounded in Kaska indigenous land use patterns and traditional knowledge.
- LFN's position is that there shouldn't be any developments authorized in a watershed or near wetlands at all until that kind of regional planning is undertaken and there is some understanding of the broad-based impacts.
- As a result, it is very difficult to balance anything on an application-by-application basis without credible baseline information and an understanding of the cumulative effects of all existing and proposed development within a watershed.

QUESTION 3: WHAT WETLAND RECLAMATION OBJECTIVES SHOULD BE CONSIDERED DURING THE WATER LICENSING PROCESS?

In response to the Board's third question:

- LFN's position is that reclamation must restore ecosystem functions to a condition that supports the ongoing and meaningful exercises of Kaska rights.
- Those methods should be accepted only where the evidence proves their efficacy and where authorizations provide for ongoing monitoring and reclamation results, including that Kaska rights will remain meaningful post-decision.
- Reclamation should include the restoration of pre-development water discharge and flow patterns, nutrient composition, chemistry and benthic communities.
- Reclamation must create conditions for the successful regrowth of native species, where reducing the risk that invasive species will proliferate.
- No amount of human ingenuity can replace wetlands that take thousands of years to form naturally. So, we should be avoiding damaging those fragile ecosystems in the first place.

Mr. Mildon also briefly summarized the duties of the Board with respect to common law aboriginal rights and title in its role as independent tribunal and as a designate of the Chief under the *Placer Mining Act*. An independent tribunal may not be the Crown, but their decisions will attract a duty to consult. LFN is expecting the Board to look at the consultation that the Crown has done and as part of their decision, make a determination, about whether the consultation was sufficient or not as an independent tribunal.

Mr. Stewart also summarized that the Kaska have never ceded, surrendered or extinguished their aboriginal title or their right to make land management decisions. There are no Renewable Resource Councils or land use planning commissions to facilitate and guide public policy. The Yukon Environmental and Economic Assessment Board has never addressed the unique constitutional obligations of the Crown associated with Kaska aboriginal rights and title.

The Kaska are of the belief that the legislation that gives rise to and empowers the Board is unhelpful when addressing the legal, political and cultural realities of the existence of Kaska aboriginal rights, including aboriginal title.

LFN supports development within Kaska traditional territory where the exercise of aboriginal rights will remain meaningful over time. This requires careful consideration of harmful effects on Kaska aboriginal rights and the availability of mitigation to avoid or reduce those effects. This requires deep consultation with LFN to provide its free prior and informed consent.

LFN also believes that the Board cannot make significantly and legally-sound decisions without comprehensive baseline information about the watersheds where development is proposed. The Board must also understand how the Kaska traditionally use and manage watersheds and the citizens that call them home. Before issuing licences, the Board should develop a systematic approach to evaluating and monitoring the efficacy of licence conditions and other accommodations to ensure these measures are protecting the meaningful exercise of Kaska Aboriginal rights.

Closing Remarks

On behalf of LFN, Mr. Mildon thanked the Board for providing this opportunity, and also thanked to everyone who provided their thoughtful input and time. He also indicated that the new LFN Chief and Council really look forward to the opportunity to work with the Board and look at creative ways to solve the issues that face us together.

6.11 OTHER PARTY INTERVENTIONS

Readers Note:

The following summaries of interventions are taken directly from the information that was provided by the Parties. To keep the summaries of reasonable length only parts of the interventions are included and where appropriate paraphrasing is used. Please note that these summaries do not reflect opinions of the Board, nor has the Board sought to verify the information presented.

ED PEART, OCTOBER 27, 2020

Summary: No new regulations or revisions to current legislation is required. Water licensing process is expensive, inefficient and is redundant with YESAA. New Water Board processes are unrealistic and may unintentionally harm Yukon's placer mining industry.

MARK FEKETE, OCTOBER 27, 2020

Summary: Concern about the legal context for the Hearing. Wetlands are not strictly "waters", but rather an ecosystem flooded by water. A wetlands review is not entirely within the jurisdiction of the Yukon Water Board. This is a matter in which full deference should be paid to the Minister under Section 11 of the *Waters Act*. No new regulations or revisions to current legislation is required. Water Licensing process is expensive, inefficient and experiences numerous redundancies between the Water Board and YESAA.

RICHARD MUELLER, OCTOBER 30, 2020

Summary: No direct or indirect inflow or outflow disruptions to wetlands be permitted. Gold mining both hard rock and placer mining in Yukon should be discontinued.

ALAN LEBEDOFF, NOVEMBER 4, 2020

Summary: No new regulations or revisions to current legislation is required. Simply enforcing the rules that already exist will suffice. Water licensing for placer mining is expensive, inefficient and is redundant with YESAA. New Water Board processes are unrealistic and may unintentionally harm Yukon's placer mining industry.

KAREN MCKENNA, NOVEMBER 19, 2020

Summary: Ms. McKenna summarized the definition of a wetland as follows: "land that is saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic vegetation and various kinds of biological activity which are adapted to a wet environment (National Wetlands Working Group 1988)".

As the Yukon Water Board is responsible for all water, surface and subsurface, it is responsible for any water use or change which causes or is otherwise related to changes in water quantity and quality in wetlands.

Ms. McKenna summarized the changes in wetlands in placer mined areas as the follows:

- Mining changes include vegetation and soil removal of surface organics and organic rich silty loess and reworked (by cryoturbation, slope movement, fluvial processes) loess. Current guidelines specify stockpiled separately from the gravel overburden which is also removed to reach gold bearing gravel and bedrock around the bedrock contact.
- In the Indian River valley, often 80-100% of the area mined prior to mining was wetland consisting mainly of fens and swamps. Mined areas, once reclamation is complete, contain upland and maybe 40 % wetlands (shallow open water and in the tailings area marsh). This constitutes a major reduction in the cover of wetlands following reclamation.
- Non-mined areas adjacent to mine cuts and stockpiles are also significantly affected. As Randy Clarkson (YT Chamber of Mines) noted there are fen wetlands mapped which abut disturbed zones, however these are not exactly the same as their undisturbed counterparts as water levels in the wetlands are usually affected, even though they are still mapped as wetlands. Any stockpiling or mining disturbance across the slope or the creek dams the upstream wetland creating raised water levels and in some cases causes ponding. Lower water levels result in the below wetland.
- Winter roads especially older ones and ones used frequently have effects as the permafrost table is depressed under the road creating a deeper channel in the surface of the permafrost which diverts and changes water flow within the wetland.
- Dewatering of settling ponds into adjacent non-mined wetlands has resulted in layering of silty and sandy sediment in the peat of the wetlands.
- Some wetland water tables have been lowered significantly below old stream diversions.

The following are some suggestions for interim Board decisions:

- All applications in wetlands should be paused until adequate information including that on significance status, watershed thresholds, wetland benefits, and heritage values is available.
- As reclamation usually results in a reduction of wetland area, offsetting should also be required.
- Under the Umbrella Final Agreement, Canada, Yukon and First Nations agreed to plan areas prior to development. In the past 20 years mining has continued without planning. This needs to stop.

- Proven reserves on a claim should be absolutely required and results assessed by qualified person before a water licence is issued and before any disturbance to undisturbed wetlands can proceed.
- New innovative techniques could be developed such as potentially preserving some natural wetlands to help with sediment filtration.
- The destruction of mostly fen and swamp wetlands which compose 80-100% of the land surface of the valleys occurs with replacement by 20-50% shallow open water in the pit area and a small amount of marsh in the tailings pond area is not a valid equivalency. This reduction (not discussed at the hearing) is a significant reduction in the cover of wetlands, resulting in significant modified functions due to different classes of wetlands.
- We can not afford to continue to mine undisturbed wetlands until we know more about the wetland ecosystems and have collected enough information to fully assess the trade-offs we make when converting these wild and natural wetland ecosystems to man-made landscapes.

MAYO RENEWABLE RESOURCES COUNCIL, DECEMBER 8, 2020

Summary: The Mayo Renewable Resources Council supports the caution and concerns expressed about placer mining in wetlands. The Northern Boreal Forest are home to most of the remaining undisturbed wetlands which are carbon holding areas. There are environmental and biological values including biodiversity and water quality. Disturbance of these primary biodiverse ecosystems have massive effects on the larger territorial system. The productivity of wetlands for First Nations peoples includes fish, water, animals and plants. The Mayo Renewable Resources Council recommends extreme caution in allowing any development in or around wetlands until wetland policy, mapping and classification, cumulative impact studies and disturbance restrictions and requirements are developed and placed in regulation/legislation.

YUKON BIRD CLUB SUBMISSION, DECEMBER 5, 2020.

Summary: We encourage all parties to work together to help shape our shared future through land claims implementation and reconciliation, including land use planning processes, inventories and research that consider traditional knowledge, finding and adapting best practices in restoration and reclamation technologies, and creating and implementing important policy for wetlands and biodiversity.

The Arctic Council's Conservation of Arctic Flora and Fauna (CAFF) working group is, for the first time, conducting a major study to support policy work and management strategies to conserve biodiversity and ecosystem services provided by wetlands. Its findings and recommendations from across the circumpolar world may be helpful in moving forward Yukon wetlands protection and management.

In the interim, the recommendations made to the Yukon Water Board to not permit mining in undisturbed wetlands should be respected; there should be a "pause" to carry out required land use planning, as Tr'ondëk Hwëch'in First Nation, the First Nation of Nacho Nyak Dun, and other Parties have recommended.

Wetland degradation and destruction in any landscape cannot continue. In moving forward, there must be a thoughtful process of identifying the diversity and values of wetlands, and as part of land use planning processes. The precautionary principle, and consideration of cumulative effects are essential. There must be a full assessment of all viable options for adaptive management, and continued monitoring and compliance tools to ensure the solutions chosen benefit future generations.

STUART SCHMIDT, DECEMBER 8, 2020.

Summary: Mr. Schmidt invited the Board to spend time with gold miners and Randy Clarkson in the Indian River Valley in both the mined and unmined areas. This would help with the decision-making process to see firsthand what has been talked about by experts. He also asked the Board to press a "reset button" when comes to the wetland and placer mining issue.

SUSIE ROGAN, DECEMBER 10, 2020

Summary: Ms. Rogan expressed support for a full pause on placer mining in Yukon wetlands until land use planning and proper reviews are complete.

LINE GILLESPIE, DECEMBER 10, 2020

Summary: Placer mining is destructive to the environment and should be stopped.

DEREK, CHRISTY, JUSTICE BROWN, DECEMBER 11, 2020

Summary: We encourage the Yukon Water Board to forego its current approach to its limited-focus and independently produced guidelines, and instead work within existing legislation and participate in inclusive policy development with assessors, regulators, First Nations governments and industry to ensure clear, simple and enforceable guidelines for the benefit of all Yukoners and our territory.

DEREK BROWN, DECEMBER 11, 2020

Summary: Mr. Brown raised the issue of imposing expensive legislation that puts miners out of business. He asked for a simpler solution for environmental issues and wetlands with a deal that is fair for both sides of the table.

CARMEN DANA, DECEMBER 11, 2020

Summary: We cannot afford to lose more wetlands to keep global warming below 2 degrees. No more miners in wetlands.

RORY FARRELL, DECEMBER 11, 2020

Summary: Mr. Farrell lives year-round in Dawson and is concerned that the changes to the Water Licence application process by introducing Wetland Plan Guidelines that could put him out of a job as well as his friends and co-workers. He summarized that the mine he works at has won multiple reclamation awards and they take great pride of the state of the land after mining. They regularly observe wildlife and hunting parties.

MIKE BEAUDRY, DECEMBER 11, 2020

Summary: The Board should adhere to its legislated mandate and do everything in its power to eliminate duplication and encourage efficiency. Timelines for applications have been growing well beyond reason for a number of operators, particularly in the Indian River, and have become entirely unacceptable from a business development standpoint.

In addition to these unsustainable timelines, the new guidelines that were implemented earlier this fall by the Board and without industry consultation which are entirely unrealistic from an operational or cost perspective. The costs associated with the new guidelines, whether related to hiring multi-disciplinary environmental consultants or ecosystem mapping that exceeds anything the public government has previously undertaken, are beyond the capacity of independently owned family operations.

Furthermore, the guidelines at best needlessly duplicate and at worst predetermine or even potentially conflict with other yet-to-be-completed initiatives currently under development by the appropriate regulatory bodies, such as the department of Environment's territory and industry-wide Wetland Stewardship Policy, Umbrella Final Agreement sanctioned Dawson Regional Land Use Planning, and various mapping exercises.

JEAN-PAUL FAVRON, DECEMBER 11, 2020

Summary: Jean-Paul Favron is a third-generation placer mine and expressed concern about the Wetland Plan Guidelines and that they could put him out of a job, He expressed concern that people who have never seen a placer mine can have negative opinions that carry the same weight as his. He is hoping to own a placer mine one day like his father and grandfather but with the new regulations it could put him out of business.

BRIAN MCCAUGHAN, DECEMBER 8, 2020

Summary: This letter expressed how important placer mining in wetlands is and that when done properly it can leave a positive footprint for future generations.

MIKE FRIESEN, DECEMBER 12, 2020

Summary: This letter summarized his mine on Maisy May Creek spent \$ 500,000 in fuel, \$ 30,000 in groceries, \$ 200,000 in payroll and \$ 100,000 in camp costs. The changes being proposed to the Water Licensing process by introducing Wetland Plan Guidelines could put him out of business.

DEBORAH JAMES, DECEMBER 13, 2020

Summary: This letter summarizes that the information the Board is seeking is under the jurisdiction of the Yukon Government Department of Energy, Mines and Resources (EMR), and is well beyond the Board's mandate. Timelines for applications are increasing and have become entirely unacceptable from a business development standpoint. Historically, the Board has long, solely and rightfully focused on the impact of the proposed use of water, or the deposit of waste in water, and on water quality, quantity and flow. The effects of environmental conditions on ecosystems and wildlife as they relate to placer mining are squarely within the purview of EMR Compliance, Monitoring and Inspections (CMI) or other government entities.

JEFF CHRISTENSEN, DECEMBER 10, 2020

Summary: This letter expresses concern that shutting down placer mining in wetlands until effective protection and reclamation measures are implemented will shut down the entire industry.

KARL KNUTSON, DECEMBER 13, 2020

Summary: The information the Board is seeking is already available and under the jurisdiction of the Yukon Government Department of Energy, Mines and Resources (EMR), and is well beyond the Board's mandate. Historically, the Board has long, solely and rightfully focused on the impact of the proposed use of water, or the deposit of waste in water, on water quality, quantity and flow. The effects of environmental conditions on ecosystems and wildlife as they relate to placer mining are squarely within the purview of EMR Compliance, Monitoring and Inspections (CMI) or other government entities.

Timelines for applications have been growing well beyond reason for a number of operators, particularly in the Indian River, and have become entirely unacceptable from a business development standpoint. In addition to these unsustainable timelines, the new guidelines that were implemented earlier this fall by the Board and without industry consultation are entirely unrealistic from an operational or cost perspective.

The costs associated with the new guidelines, whether related to hiring multi-disciplinary environmental consultants or ecosystem mapping that exceeds anything the public government has previously undertaken, are beyond the capacity of independently owned family operations. The Board in its line of questioning seems overly focused on potential detrimental effects as opposed to also considering benefits that provide balance to the discussion. In the absence of permafrost, reclaimed post-mined areas enable

prolific deciduous vegetation growth and encourage a greater diversity of plant and animal life, as well as introduce shallow open water wetlands in a region where they are less common, supporting this diversity.

MIKE MCDUGALL, DECEMBER 13, 2020

Summary: Much of our mining has occurred in areas that were previously mined and we subsequently re-mined them. We have restored these areas after almost a century of placer mining. Other areas we mined were indeed under the cover of various types of wetlands, in our area these were primarily frozen monoliths which had a thin covering of moss but were essentially frozen blocks of mud and gravel, none of the features you would associate with southern wetlands were present.

These areas once mined and restored then became different from the original but curiously began to take on some of the features which characterize wetlands in southern Canada such as ground water flows and storage, filtering of water flows and a different more diverse mix of vegetation due to the subsoils now being thawed. We have also observed the regrowth of permafrost in some previously mined areas.

A vanishingly small area of the Yukon hosts these economic deposits of this placer gold and somewhat less than 0.5% of the Yukon land mass is covered by placer claims. The decision to mine in a wetland is a policy decision best left to the Yukon Government and the balanced public process they have begun. There is also an overarching land use planning process (Dawson Land Use Plan) for the area coming out of the UFA, I suggest we let both do their work, join the process and add constructively to the final plan. Mining should be allowed to occur in wetlands subject to the Dawson Land Use Plan and the Wetland Policy policies. Miners should be licenced for and encouraged to do the best reclamation they can and if they do not then utilize the current statutes to penalize and further to apply appropriate bonds to non-compliant operators to ensure completion.

Members of the regulatory and licensing bodies should attempt to visit the placer fields yearly or semi-yearly to see first hand the activities and successes of the industry. No changes should be undertaken or contemplated on Waterboard policy until a multi party committee has been formed with members of Government, First Nations and industry to review and implement the suggestions arising out of the Land Use Plan and the Wetlands Policy. The Yukon is a big place and there is room for all here. I encourage all to pull back and view the Yukon as a whole, look for context, look for balance.

Tom Fenton, December 10, 2020; Allen MacGregor, December 11, 2020; Darrell Wall, John Alton, December 12, 2020 Peter Brokking,; Mike Mickey, Brian MacDonald, Hank Van Reisen, Ron Peck, James Tatlow, December 13, 2020; (Note: these submissions all contain similar content)

Summary: The information the Board is seeking is already available and under the jurisdiction n of the Yukon Government Department of Energy, Mines and Resources (EMR), and is well beyond the Board's mandate. Historically, the Board has long, solely and rightfully focused on the impact of the proposed use of water, or the deposit of waste in water, on water quality, quantity and flow. The effects of environmental conditions on ecosystems and wildlife as they relate to placer mining are squarely within the purview of EMR Compliance, Monitoring and Inspections (CMI) or other government entities.

Timelines for applications have been growing well beyond reason for a number of operators, particularly in the Indian River, and have become entirely unacceptable from a business development standpoint. In addition to these unsustainable timelines, the new guidelines that were implemented earlier this fall by the Board and without industry consultation are entirely unrealistic from an operational or cost perspective.

The costs associated with the new guidelines, whether related to hiring multi-disciplinary environmental consultants or ecosystem mapping that exceeds anything the public government has previously undertaken, are beyond the capacity of independently owned family operations.

The Board in its line of questioning seems overly focused on potential detrimental effects as opposed to also considering benefits that provide balance to the discussion. In the absence of permafrost, reclaimed post-mined areas enable prolific deciduous vegetation growth and encourage a greater diversity of plant and animal life, as well as introduce shallow open water wetlands in a region where they are less common, supporting this diversity.

CHARLIE BROWN, DECEMBER 13, 2020

Summary: As a third-generation placer miner and prospector, claim holder and operator, I have had the pleasure of mining wetlands on Dominion Creek, the Indian and Klondike Rivers. Placer mining has captured my heart and soul, yet now we see how misinformation hurts us to the bone. My father's (John Brown) reclaimed ponds and mined out areas on Dominion were home to wildlife like cow moose and calves, along with bull moose, lynx, rabbits, wolves, coyotes, beavers, bears and muskrat all came back. More animals returned post-mining than before mining. One reason is we brought back the proper foliage for these creatures to graze on. Placer mining is composed of many families and small business ventures, who spend their money in the Yukon. This spring with COVID19, Dawson was shut down. Thanks in part to the Placer miners around Dawson, the Yukon stayed alive. An estimate of \$200,000,000-worth of gold was extracted in 2020 CAD – estimate of total production for Yukon.

ROB AND MARY ANN LEWIS, DECEMBER 13, 2020

Summary: The Water Board needs to stop issuing water licences to placer miners until land use plans are in place, reclamation standards are established, and the Yukon Wetlands Strategy is complete and implemented.

LABERGE RENEWABLE RESOURCES COUNCIL, DECEMBER 12, 2020

Summary: The Yukon Water Board ("YWB") specifically invited perspectives on the following items:

- The role of wetlands in the water cycle. Wetlands are found at the headwaters and alongside streams, rivers, and lakes across the Yukon. Wetlands perform hydrological functions to soak up water during wet periods, while releasing water during the dry periods. Wetlands also work to control floor flow and manage sediment and water quality. As defined in the Yukon Water Act, "water means any inland water, whether in liquid or frozen state, on or below the surface of the land". It is the YWB's mandate is to manage and regulate Yukon water from source, whether by rain, snow, or natural spring, to the outlets. By these articles, wetlands management and use are the responsibility of the YWB.
- Mining legislation- As proposed in the Mineral Development Strategy process, mining legislation should be updated and harmonized with the Umbrella Final Agreement and First Nations Final Agreements.
- Wetlands policy- it would be prudent to wait for an updated wetlands policy prior to making decisions or requirements for the management of placer mining in wetlands.
- Hearing Question1: What information should be required to support a water licence application related to placer mining in wetland areas?
 - It is difficult to develop site specific information requirements without knowing the attributes of the location under consideration.
- Wetlands are critical habitat for a variety of water, land and avian wildlife which live in or around wetlands. Currently the quantity and quality of wetlands across Yukon is unknown.
- Hearing Question 2: What should the wetland conservation, development and utilization objective be for a watershed and how can they be balanced on an application-by-application basis?

- Conservation, development and utilization objectives at all levels should guide us toward intact ecosystems and sustainable use of natural resources.
- Hearing Question 3: What wetland reclamation objectives should be considered during the water licensing process?
 - As recognized by the Mineral Development Strategy process, there is broad support for stronger financial safeguards and incentives to ensure that reclamation is undertaken by project proponents.
 - Accordingly, the YWB must consider the risk of non-compliance when deciding to authorize placer mining in wetlands and implement provisions for mining companies to fulfill their reclamation requirements.
 - Wetland reclamation objectives formulated through this process should recognize the challenges of reclamation and that wetlands, being a source of methane, are themselves a negative influence on climate change and ensuing global warming.
 - Accordingly, where the licencing process includes wetland reclamation objectives, the process should consider reclaiming a site with wetland features to achieve an appropriate ratio of upland and wetland communities.

JANET LOOKER, DECEMBER 13, 2020

Summary: Stop issuing licences for placer mining until new regulations are in place to protect wetlands.

JONA BARR, DECEMBER 12, 2020

Summary: The Water Board should cease issuing water licences to placer miners until there are land use plans in place.

CONCERNED SUPPORTERS OF PLACER MINING, DECEMBER 2020

Summary: We encourage the Yukon Water Board to forego its current approach to its limited focus and independently produced guidelines, and instead work within existing legislation and participate in inclusive policy development with assessors, regulators, First Nations governments and industry to ensure clear, simple and enforceable guidelines for the benefit of all Yukoners and our territory.

JON WILKIE, DECEMBER 12, 2020

Summary: I am a Yukon born second generation placer miner. I have been mining in the Yukon since birth in 1973. I really am very concerned as to the unfair attitudes and tactics that some groups and individuals have been using to try stop mining in Yukon wetlands particularly the Indian River. Perhaps if more of these people and groups actually lived in Yukon, they might see how much wildlife habitat is actually created by the settling ponds left behind by placer mining. I have seen trumpeter swans, geese, ducks, loons, jackfish and graying, moose, beaver and muskrats in many of the Indian River settling ponds as in many other creeks that have been supposedly devastated by placer mining.

SCOTT PETRIE, DECEMBER 12, 2020

Summary. Throughout my travels along the creeks, I have been a firsthand witness to all stages of a placer mining claim, from stripping to reclamation and everything in between, and I am always impressed by the forethought required to get the job done. In fact, this past season, many of the miners discussed reclamation budgets and plans with me and how the landscape would look once completed.

The costs they will incur to put the land back are quite substantial but they know it needs to be done, not only because it is required but because they cherish and respect the environment as well. Tourism was basically abolished, and this had negative consequences to many businesses throughout the territory but

the placer mining industry was able to keep the lights on for many of them. I would guess that the miners annually spend millions of dollars at local stores, restaurants, hotels, and bars.

One can speculate that if this industry continues to be decimated by legislation and regulations, the economic and social problems in the urban and surrounding areas will increase immensely due to lack of industry stimulus. Before you, the Yukon Water Board, make your final recommendations, I hope that all evidence is studied carefully and weighted accordingly, that all directly affected parties are heard, that all pressures from organizations not directly related are alleviated, and that all parties have exhausted every available option to an agreed upon solution.

JENNIFER DAGG, DECEMBER 12, 2020

Summary: I would like to express my concern about ongoing issuance of licences for placer mining in wetland areas leading to fragmentation of habitat, loss of carbon storage and reduction in water quality. The lack of land use planning means that development is occurring in a sporadic and ad-hoc nature. There are no thresholds on disturbance locally or regionally. The current goals for reclamation in licences are not properly enforced and not achievable during the lifespan of a typical placer mine. I applaud the Yukon Water Board for holding the Hearing and inviting comments from parties. I hope that this process leads to concrete action to complete comprehensive land use planning and to update legislation. This will require significant effort from the Government of Yukon. As an arms-length agency, I encourage the Yukon Water Board to keep pressure on the Government of Yukon to achieve these tasks.

RICK RIEMER, DECEMBER 12, 2020

Summary: We encourage the Board just to sit back and ask yourselves: Where are we taking this? Ask yourselves: Out of all the correspondence and interveners, how many are being paid to provide you with this information? Then ask yourself: How many of the placer miners and affected people that have written are paying someone professionally to submit documents to the board?

That is why, people whose livelihoods will be affected are relying on the board to have a non-bias, non-political, and common sense approach to the board's decision making. A lot of these same people with businesses or workers in the industry are questioning the common sense of this public hearing, as the proponents that have a water licence before the board have went through the regulatory process of YESAB.

So, I ask the board as you sit back in your chairs: Are you taking the wetlands into your own hands with lack of respect for the processes that are in place already in the Yukon? Politics need to be set aside here.

In closing I will say it is a tough job trying to balance the environment/economy, but people need to stay employed. Placer gold deposits are only in certain small areas of the Yukon. Wetlands are all over the Yukon in which many areas are protected already. Wetlands that have been mined, have changed into something different that still supports fish, wildlife, and provides natural water filtration.

NEIL LOVELESS AND FAMILY, DECEMBER 14, 2020

Summary: Placer mining has always been a vital part of the community of Dawson City as well as the greater Yukon. We are an industry that has endured the ups and downs alongside our communities and territory as a whole and we want this to continue into the future. In order to do so, we need a fair approach when it comes to dealing with wetlands that allows for sustainable mining and reasonably friendly reclamation practices to be adapted over time between industry and stakeholders.

This is vital as I estimate that 60-70 % of the Yukon placer gold reserves lie under a wetland. It is the Board's role to assess the impact of water usage and ensure miners applications meet the expectations where it relates to water quality and quantity. It is up to the Yukon Government to determine the acceptable

amount of wetland disturbance permitted, the specific information needed pertaining to wetlands and licensing and what reclamation techniques would be expected and enforced.

As of October, all placer claims, and leases covered a total of .56 % of the Yukon. In heavily mined areas, the total amount of mined areas are less than 50 % which a placer disturbance of .28 % of the Yukon in over 120 years. Of this area that has been affected by placer mining a large portion has undergone passive reclamation or modern reclamation as a shallow water wetland or marsh. Reclaimed placer areas are adding to biodiversity. Placer mining is not a long-term occupant of the land and has a minimal footprint.

MARTIN KNUTSON, DECEMBER 11, 2020

Summary: The changes that are being proposed to the Water Licence application process by introducing the Wetland Plan Guidelines could put me out of business. I am a long-term Dawson resident that usually employs 8-9 people at our family mine. We are all Yukoners, and the majority are Tr'ondëk Hwëch'in First Nations members. I was not consulted when it came to developing these Guidelines and they could cost tens of thousands of dollars for baseline studies.

DALE BULMER, DECEMBER 12, 2020

Summary: I feel that it is important you understand this about me because the changes you are proposing to the Water Licence application process by introducing the Wetland Plan Guidelines could put the company I work for out of business.

I was not consulted when it came to developing these Guidelines. I don't understand why you're asking for this information which could easily cost the company tens of thousands of dollars to do baseline studies. There has been no communication with us or other placer miners that I know of about these Guidelines.

Some of the data you ask for in the guidelines, like water flow information, has already been covered through other aspects of our water licence application, in this case using the DFO worksheets. They were developed in consultation with the industry, so we know what is proposed is achievable and is the type of work all miners should aim for.

SALLY DERRY, DECEMBER 14, 2020

Summary: Having reviewed the information available to the public regarding the possible denial of water licences to certain mining operations in the Indian River area, we believe it would be of minimal benefit to the environment to restrict mining on a wetland. It is our understanding that regulations already in place are the most practical balance for the environment and the local economy. Our involvement with the mining community has allowed us to build relationships with many of the owners and managers of operation in the Klondike. It is obvious to anyone that has engaged in discussion regarding this industry that they take their stewardship very seriously. The implications of allowing this application to be approved could have serious repercussion economically for the whole Klondike area.

DAVE PROCEE, MORRIS GEORGE, DECEMBER 14, 2020

Summary: Post-mined claims and settling ponds are magnets for all manners of wildlife. As naturally occurring ponds and open water are relatively rare in the Klondike compared to other parts of the territory, birds and waterfowl flock to the vegetation the ponds support in droves. They regularly attract moose cows and calves, and in the fall, bulls and the hunters that pursue them, providing crucial cultural value and sustenance for the community.

The value of this otherwise uncommon habitat for both wildlife and society is too often overlooked, or outright discounted as "artificial," yet the presence and abundance of the attending flora and fauna demonstrate its significance. Indeed, reclaimed shallow open water wetlands have greater biodiversity

than the bogs and fens that were there before as stated by the Board's specialist in the Virtual Hearing and echoed by Ducks Unlimited. It would be far more practical and efficient to maintain the current arrangement of the department of Energy, Mines and Resources, Compliance, Monitoring and Inspections, to oversee and enforce reclamation requirements.

The delegations of authority that are already in place from the Yukon government to the Water Board have long led to confusion among proponents and regulators alike, and further overlap will lead to inefficiency, inconsistency and uncertainty. We encourage the Yukon Water Board to forego its current approach to its limited-focus and independently produced guidelines, and instead work within existing legislation and participate in inclusive policy development with assessors, regulators, First Nations governments and industry to ensure clear, simple and enforceable guidelines for the benefit of all Yukoners and our territory.

HAROLD SCHMIDT, DECEMBER 12, 2020

Summary: I feel that it is important you understand this about me because the changes you are proposing to the Water Licence application process by introducing the Wetland Plan Guidelines could put the company I work for out of business. I was not consulted when it came to developing these Guidelines. I don't understand why you're asking for this information which could easily cost the company tens of thousands of dollars to do baseline studies. There has been no communication with us or other placer miners that I know of about these Guidelines. Some of the data you ask for in the Guidelines, like water flow information, has already been covered through other aspects of our water licence application, in this case using the DFO worksheets. During the Virtual Hearing I listened to people from Whitehorse and experts from other provinces (or countries in some cases) talking about my back yard, about how important wetlands are, and how bad mining is. I have a hard time understanding why people who have never seen a modern placer mine can have such negative opinions given the same (or more) weight as mine. I feel like the Water Board is trying to put mining out of business because you don't understand what we do, how we do it or why we love doing it. I hope you can take more time to consider who you are affecting with your changes before it's too late and we are forced out of business by not being able to obtain a water licence with reasonable terms and conditions.

SYVANNA SCHMIDT, DECEMBER 14, 2020

Summary: My name is Syvanna Schmidt and I am married to a fifth generation placer miner. I have been involved with Schmidt mining for over 15 years. My family of 5 depends on placer mining for our livelihood and our way of life. I am deeply concerned about the Water Board's motion to impose new regulations and rules, on the already lengthy and costly process for obtaining water licences.

I am deeply concerned about the presentations that were brought forward during the Water Board Hearing earlier this year and the lack of unbiased transparency and balanced expert opinions and evidence that was brought forward to share with the public, the government, the First Nations and the mining community.

Schmidt Mining takes pride in taking care of the environment, pride in collaborating with local governments and First Nations, pride in our community, pride in the sustainable work that we do placer mining, pride in teaching our children what it looks like to be caretakers of our land, pride in being a locally owned and operated business that has history in the land stemming generations in time, providing for our families and the creeks we call home.

For the sake of my three sons, the sake of the workers I consider my extended family and for the sake of Schmidt Mining, I strongly urge the Water Board to reconsider their position as a governing body and reconsider the major impacts new regulations would in pose on Yukon Mining families.

NONA LOVELESS, DECEMBER 14, 2020

Summary: I am a third generation First Nations placer miner. My father, John Brown, had a mine of his own for years in the Klondike. The placer mining industry is a vital component of the Yukon economy as it brings in money and job opportunities for the small communities. In my opinion, it would be beneficial to have Yukon government officials see firsthand the product of reclamation and the potential it has in creating an environment that lends itself to the diverse species and wilderness of the Yukon. In order for this to be successful, I feel it is necessary to implement visits to the mine sites and physically walk the grounds opposed to creating rules and regulations based solely on photos and maps seen in an office setting. I accept the responsibility I have to my community and environment as a placer miner, and am willing to put the effort in and comply with the rules and regulations as long as they are clearly defined and not constantly subject to interpretation. In addition, it's important these rules consider all parties involved and work to balance the interests of these different groups.

PARKER SCHNABEL, DECEMBER 14, 2020

Summary: The current approach from the Yukon Government and the Water Board has been extremely frustrating, to the point of our 2020 exploration budget was spent in Alaska rather than the Yukon. Alaska is a very difficult place to operate in, but we are at least given clear concise rules and standards for reclaiming different classes of lands and the reclamation standards that those areas must be reclaimed too. Currently in the Yukon that is not happening, and the Indian River operators are singled out and, on this track, we will all be prematurely put out of business. I ask you to consider what the impact will be on many small businesses if you close down the Indian River to future mining. I ask that YG, the Water Board, and First Nations work together to find a solution that keeps us in business, as the existence of our business is what is at risk if the Indian River is shut down to placer mining.

MARK MATHER, DAWSON CITY GENERAL STORE, DECEMBER 14, 2020

Summary: The placer mining industry has been instrumental to the growth of the Dawson City General Store which employs 18-20 employees year-round and expands to 36 staff in spring, summer and fall. The Dawson City General Store has supplied to date over \$ 250,000,000 in sales to the Klondike Region and a further contribution to the work force of over \$ 28,750,000. The scale and impact of shutting down mining in wetlands would force us to scale back, which will have trickle down effects to other businesses. We corporately feel that the Yukon Water Board is looking to implement a process that is unrealistic and may harm unintentionally all Yukon placer mining.

TARA CHRISTIE, DECEMBER 14, 2020

Summary: When the wetlands issue became the "issue of the day" in 2014, that income and lifestyle ended when we were trapped as one of the first few to have our permits delayed as government tried to figure out what to do. Specifically, our Indian River property, our family had invested in since 1992. Twenty-eight years of investment and work in a property, which with a simple administrative idea to change rules, wiped out a family's main means of income and investment.

There is no business which I can think of which would be treated this way, and in the whole history of placer mining regulation, this has not been the process and it is not a fair or well thought out process. Whether it was the Mining Land Use regulations in 1998, the Yukon Placer Authorization (1993), the implementation of YESAB, or the new placer regime with DFO, there has always been an inclusive development process which included the industry to be regulated in a meaningful way. The changes were clearly developed, communicated, and time was given to be implemented so that businesses could adapt and plan their investment/costs. There was also a clear process that considered existing operations that had significant investment and lessened the immediate impact and the uncertainty on their businesses.

This should be a requirement of any new regulation or requirement, to be clearly developed in an inclusive way that the industry can reasonably implement, communicated and timelines set for implementation, and then a phased in approach that lets businesses adapt and modify their operations over time.

It is the job of the Yukon Government to develop the Wetlands policy and regulation, as they are given the responsibility over regulating issues related to land, including reclamation, and the Water Board is given the responsibility to make decisions on water. The Water Board should not be forced or feel that it needs to fill a void left by governments and enter into areas beyond its mandate of water. The delegation the Water Board has been given to issue Mining Land Use permits, requires the permits to be in accordance with the Decision documents issued by Yukon Government and additional policy or requirements should also come from policies set by the Yukon Government.

The current manner which wetlands have been approached by Yukon, including the Water Board, had resulted in significant and unfair economic and social impacts on family-owned businesses that have been operating in Yukon for 30+ years. We urge the Water Board to continue to issue placer licences, including in wetlands where CMI must approve wetland reclamation plans, and demand that the Yukon Government provide clear guidance on a clear policy related to placer mining in wetlands, that enables placer mining, particularly existing businesses to continue to operate, supporting Yukon businesses and employing Yukoners in this lifestyle business that is a cornerstone of our economy and society.

We urge the Water Board to diligently focused on the Waters Act mandate to regulate water and avoid the costs, time and uncertainty which would be created with the duplication of Yukon Governments responsibility to provide guidance for reclamation of and rules around wetlands.

DAVE MARSTERS, TD OILFIELDS LTD., DECEMBER 14, 2020

Summary: I employ 20 people per season and have been operating in the Klondike for over 20 years. Every season we spend upwards of \$ 1,000,000 locally to operate the gold mine, that includes fuel, groceries, parts, accommodation, and shipping. The new regulations to placer mining in wetlands would inhibit or have a negative impact on our operations going forward. Potentially this could completely shut down our operations, putting many out of employment and my family's future in the Klondike at risk.

PETER JENKINS, DECEMBER 14, 2020

Summary: Thank you for the opportunity to submit my thoughts to the topic of placer mining in the Indian River wetlands. At the outset, I endorse and support the call by the Tr'ondëk Hwëch'in's Chief that the time is long overdue for the Yukon Legislative Assembly to proceed with the adoption of wetlands- specific legislation. I share the Tr'ondëk Hwëch'in's frustration with the failure by our Legislative Assembly to deal with the subject, but a freeze on placer mining would affect more than a handful of placer miners, it would have a devastating socio-economic impact on the entire community. Doing so would be as unreasonable and as irresponsible as it would be to put a freeze on the use of all fossil fuels pending legislation to combat climate change. In closing, allow me to reiterate that it is beyond the Board's mandate to apply a doctrine of its own to fill a legislative void. The Board's mandate is to provide an optimum benefit not for some, but for all, and to do so within the Yukon's legislated framework.

JONAS SMITH, DECEMBER 14, 2020

Summary: The placer mining industry has put a lot of food on my family's table over the years. It produces approximately \$100M worth of gold per year and almost 90 percent of its total operating expenses are paid to Yukon-based companies. With approximately half of the workforce consisting of family members, that also means the wages stay in the community, further supporting Yukon businesses and citizens. The Tr'ondëk Hwëch'in-owned Chief Isaac Group of companies are heavily invested in freight hauling, road construction and fuel distribution, simultaneously both supporting – and benefiting from – placer mining.

Modern placer mining converts relatively barren permafrost areas into lush, productive habitat which is a magnet for all kinds of wildlife. It is among the most environmentally-friendly of all resource extraction industries; gold is separated from naturally eroded mineral sources and there are no chemicals or cyanide used – just water and gravity. The Yukon Water Board's new conditions threaten placer mining's ability to continue to provide such overwhelming value for Yukoners. These conditions are redundant, unnecessary, and well beyond the technical or financial capacity of these modest family operators, which as an entire industry are collectively smaller than a single publicly traded corporate hard rock mine. I urge the Yukon Water Board to stick to its mandate concerning water quality and quantity, and let the appropriate government agencies enforce and develop reclamation regulations in partnership with affected First Nations governments and industry.

JAMES CHRISTIE, DECEMBER 14, 2020

Summary: I have been involved with placer mining in the Yukon since the early 1980's and specifically in the Indian River from 1992 when we purchased the claims which we were mining in 2014 when the issues around Wetlands were first raised. It is concerning that we have a Yukon assessment and regulatory/licencing processes that have so much duplication and lack of clarity on boundaries of authority.

As you know, the initial pre-licencing review of all proposals at YESAB is very comprehensive and includes review by all affected parties and opportunity for public comment before a Decision Document is issued. No project goes ahead without YESAB recommendations and a Yukon Government Decision Document. There are already specific conditions to be part of the reclamation plan, and thereafter the Chief of Mining Land Use (EMR) must approve the wetland reclamation plans before the operation can go ahead. At this stage Land Use and Wetlands issues have been thoroughly considered in the process and there is no need for further consideration by the Water Board of anything but their mandated water issues.

Should the Water Board start encroaching on land and reclamation issues as in their proposed Wetlands Plan Guidelines, a redundant extra layer of difficulty, complexity and delay will be added to the licencing process for placer. The proposed requirements are far beyond what should be required for water licencing, and beyond the capability of placer miners without a lot of time and expensive professional help to complete even the application part. The current situation in Yukon with the Water Board trying to implement measures to regulate placer mining land use and reclamation of Wetlands without a mandate to do so or any consultation with industry is an affront to all concerned and is especially so to the Placer Industry which cannot function without Water Licences being issued pursuant to the current regulations.

The Government of Yukon, Mining Land Use is the authority for governing activities on land, and they should be objecting to this situation and doing something to fix it. I think that it is wrong for the Water Board to be refusing to issue licences at Indian River for example, where I am told proponents licences have been delayed for over a year. It is entirely unfair to the proponent, many who are family-owned businesses that have operated for 30+ years, and negative for economic stability and growth in Yukon. It took 20 months to renew a water licence after 10 years of operation at our existing mine near Indian River which had no compliance issues with either land use or water licences. There were substantial holding costs during the two-year delay period, all of our long-term employees were lost and our family members had to find other work elsewhere. These costs have severely damaged our family business, after 28 years of investment in this property and over 35+ years of placer mining in the Yukon. This was very harsh undeserved treatment of a small business that had supported the community and hired many locals each year.

There were never any specific problems identified and many high-quality wetland areas had been created over the years by reclamation. In closing, I respectfully suggest that the Water Board implement their own

service standards and timelines for issuing licences and narrow the licences to their mandated scope of water use, per the Waters Act.

The delegation to issue the mining land use permits should adhere to the Decision Document requirements and established policies and mining land use regulations of the Yukon Government. The Water Board should not try to fill or duplicate the role of the Yukon Government in establishing reclamation guidelines for wetlands, or disrupt their process, if additional guidelines are needed. Additional redundancy and duplication of process will not be helpful to any of the regulators or industry and will add costs for all involved.

JESKA GAGNON, FISHERIES AND OCEANS CANADA, DECEMBER 14, 2020

Summary: Fisheries and Oceans Canada (DFO) has followed the Yukon Water Board (YWB) Wetland Hearings and noted several references to the Fish Habitat Management System (FHMS) for Yukon Placer Mining.

DFO is providing the following information on the design and implementation of the FHMS for the Board's reference. The FHMS is an integrated regulatory regime that was developed collaboratively over five years by DFO, the Yukon government, and the Council of Yukon First Nations (CYFN). It also included involvement from Yukon First Nation Governments, and input from industry and other nongovernmental organizations. The goal of the FHMS is to balance the objectives of conservation and protection of fish and fish habitat supporting fisheries and a sustainable placer mining industry.

The FHMS includes standards and guidelines that are science-based, incorporates local and traditional knowledge, and supports a harmonized regulatory system for permitting. The standards and guidelines are based on risks to fish and fish habitat with a goal of avoiding, mitigating and offsetting potential effects.

Fish habitat suitability maps were developed for each watershed using a predictive analysis model that used juvenile Chinook salmon as the valued ecosystem component. The watersheds were first classified based on their sensitivity to the effects of placer mining and then each stream reach was assigned a habitat suitability based on physical and biological indicators (e.g. watercourse gradient, proximity to Chinook salmon production areas or lake trout lakes, water quality, previous development).

Building the model required significant baseline information and data as well as extensive ground-truthing of the outputs. In addition, ongoing maintenance of the model and GIS platform is required.

The System also includes the ability to establish Areas of Special Consideration which represent watercourses that contain ecologically or culturally important habitats or fisheries. These areas can be identified based on Indigenous Knowledge or science.

In order to achieve compliance with the Watershed-based Authorizations, a placer mining proposal must meet the requirements outlined in the Fish Habitat Design, Operation and Reclamation Workbook and Worksheets for Placer Mining in the Yukon Territory for the habitat suitability where the activities are proposed to occur. The workbook defines the works authorized in the various habitat types and outlines the reclamation activities required.

Streams that flow through or adjacent to wetlands are considered within the FHMS as watercourses, and the associated design, operation and restoration requirements are focused on the stream channel and riparian habitat.

DFO does not maintain an inventory or classification system for wetlands in the Yukon, and the FHMS does not include specific design, operation or restoration techniques for wetlands.

Furthermore, wetland restoration that results in access by fish to newly constructed or existing shallow open water wetland areas is not covered by the FHMS, nor is it promoted within this framework as the FHMS does not include guidance on how to undertake this type of restoration.

Fundamental to the FHMS is an adaptive management process intended to enable changes based on the results of effects monitoring, new information, and Indigenous Knowledge. An effective adaptive management process is dependent upon a robust monitoring program that can identify project caused changes. The adaptive management process is crucial for the effective management of placer mining activities and the mechanism to enable changes to the standards of the Watershed-based Authorizations.

LISA FAVRON, DECEMBER 14, 2020

Summary: Favron Enterprises has always been a family operation that has operated for 43 years. This season, we employed 12 people which helped support 6 local families. Reclamation is as much a part of mining as the extraction of the gold. The job of the Water Board is the proposed use of water, the deposit of waste into water and water quality, quantity and flow. Determining the environmental impact on ecosystems and wildlife and reclamation of placer mining is the responsibility of Yukon Government working with Federal and First Nations government agencies. The expectation for an individual placer mine operation to create their own reclamation of wetlands criteria is unreasonable. In addition to not having the experience to create policy, the costs associated to hire environmental consultants and complete the ecosystem mapping are beyond the capacity of independently owned family operations.

DR. HILARY COOKE, WILDLIFE SOCIETY CANADA (WCS), DECEMBER 14, 2020

Summary: WCS Canada urges the Board to respect the spirit and intent of First Nation Final Agreements and only authorize mining in wetlands once effective measures are in place to protect and reclaim wetlands, including:

- The identification and protection of areas of high value through collaborative mechanisms, such as approved land use plans or other mechanisms agreed upon by the Yukon Government (YG) and Yukon First Nations;
- A wetland policy agreed upon by YG and Yukon First Nations, including disturbance thresholds by watershed;
- Wetland reclamation standards agreed upon by YG and Yukon First Nations; and
- Mechanisms to guarantee that funding will be available for reclamation and that reclamation will be successfully completed.

Question 1. What information should be required to support a water licence application for placer mining in wetlands?

Wetland mapping, biodiversity inventory, adaptive management framework, cumulative effects mapping and assessment.

Question 2. What should the wetland conservation, development and utilization objectives be on a watershed basis and how can they be balanced on an application basis?

Wetland conservation objectives cannot be achieved on an application-by-application basis in the absence of regional land use planning and a precautionary and ecosystem-based approach to management.

We recommend these principles for wetland conservation in the Yukon: completion of Regional Land Use Planning, Precautionary principle in all decision making and an ecosystem approach to management.

Question 3. What wetland reclamation objectives should be considered during the water licensing process?

Wetland reclamation cannot restore the complex abiotic and biotic interactions of an intact wetland, particularly peatland ecosystems that have developed over long periods of times.

Given the absence of information to manage risk to wetlands and their functions and values, we should be first focused on inventory, monitoring, and protection.

However, in areas where wetlands have been identified for placer mining based on a wetland policy and regional land use plans, reclamation should be invested to the highest standards.

This requires measurement and mitigation of wetland functions, and long-term investment in monitoring.

This report provided a review of scientific information for wetlands relevant to the testimony heard at the Virtual Board Hearing including biodiversity and wetland functions and values. There is also a summary of the impact of placer mining on wetland biodiversity including the following: Yukon species at risk, impacts on bird populations, risk to fish and aquatic systems and cumulative effects. There is also a summary of management and conservation of wetlands in Yukon including the development of the Wetlands Policy, regional land use planning, the Interim Approach in the Indian River drainage, the DFO Watershed Authorization Model, the Yukon Forest Management Branch Planning Standards, and wetland reclamation following placer mining.

TRISH HUME, DECEMBER 12, 2020

Summary: The affected First Nations should not be able to expropriate placer mines by means of the Self Government Agreements. Expropriation without due process or financial compensation is unlawful anywhere else in The Yukon. Why would it be acceptable in Dawson and Mayo? What will prevent this practice from inundating all mining properties in the Yukon? It is my opinion that no new regulations or revisions to current legislation is required. Simply enforcing the rules that already exist will suffice.

Question 1. What information should be required to support a water licence application for placer mining in wetlands?

Worksheets like the DFO watershed classification would make sense for surface water flows.

Question 2. What should the wetland conservation, development and utilization objectives be on a watershed basis and how can they be balanced on an application basis?

Not all ground has economic gold deposits, therefore not all wetlands need be disrupted.

There needs to be exploration ahead of excavation. Mitigations such as drilling in the winter through the frozen wetlands. Ground Penetrating Radar over the frozen wetlands, airborne GPR data is in development. Science and exploration need to keep evolving for this purpose.

Question 3. What wetland reclamation objectives should be considered during the water licensing process?

How wildlife, fish, and humans interact with the redesigned landscape is the measure of success.

Since mine plans invariably change over the mines life the mine reclamation plan will change too.

New technologies may become available for mining and reclamation. The mine and reclamation plan must have a degree of flexibility over the 10-year permit.

JON RUDOLPH, DECEMBER 14, 2020

Summary: My perspective on this matter is one informed by my long experience as a Yukon Contractor and that of 6 years as an owner/operator of the largest placer mine on Dominion Creek. Mining in the Dawson area occurs primarily on permafrost. My recommendation is that Yukon Government, First Nations, and industry representatives come together to identify a workable solution to this issue.

A solution that will take into consideration the economic impacts of the new regulation and find the best solution to achieve the environmental objectives of dealing with the wetlands. Personally, one of the greatest advantages that Land Claims and Devolution provided all Yukon residents is having the ability to define Yukon solutions to Yukon problems. In my opinion, the Water Board must show its leadership by shepherding this process.

SHANE BIGGS, DECEMBER 14, 2020

Summary: I recently purchased an Industrial supply store in Dawson City that supplies a wide selection of mining equipment for our local miners. My business is very dependent on the mining community here and without them I would not be able to continue day to day operation. This would mean putting 2-3 people out of work and for some of them would mean moving away from Dawson City. You need to put A LOT more thought into your decision and hold more community information meetings before making such a decision.

MARTIN GEHRIG AND DIANA ANDREW, KLONDIKE PRINTING, DECEMBER 14, 2020

Summary: Post-mined claims and settling ponds are magnets for all manners of wildlife. As naturally occurring ponds and open water are relatively rare in the Klondike compared to other parts of the territory, birds and waterfowl flock to the vegetation the ponds support in droves. They regularly attract moose cows and calves, and in the fall, bulls and the hunters that pursue them, providing crucial cultural value and sustenance for the community. The value of this otherwise uncommon habitat for both wildlife and society is too often overlooked, or outright discounted as “artificial,” yet the presence and abundance of the attending flora and fauna demonstrate its significance.

Indeed, reclaimed shallow open water wetlands have greater biodiversity than the bogs and fens that were there before as stated by the Board’s specialist in the Virtual Hearing and echoed by Ducks Unlimited. When looking at the scope of wetlands in the Territory, placer mining occurs on only a small percentage of land, therefor a small percentage of wetlands overlay known gold bearing deposits.

The Board must consider the broader implications of limiting mining in wetlands with size of the Territory in mind. The Yukon Water Board has never visited many of our operations, nor has the Palmer Group who was retained to provide advice for the Secretariat on the development of the guidelines, and yet our homes and livelihoods are being considerably affected by those with absolutely no first-hand experience.

The Yukon government department of Environment is currently developing a Wetlands Stewardship Policy that will affect the use of all wetlands across the entire territory, not just those affected by the placer industry. The Dawson area is currently engaged in regional land use planning as prescribed by the Umbrella Final Agreement.

By implementing guidelines at this stage, prior to completion of the aforementioned larger and broader processes, it opens the door for inconsistent application of policy from one industry or region to another and introduces additional uncertainty, when there is already so much in the world today. It will be significantly cost-prohibitive to meet the criteria requested in the guidelines, from collecting the data to mapping, and will likely require retaining specialist contractors to undertake the work.

The lack of financial capacity for small, family-owned operations to hire professionals qualified for such specialized work cannot be understated. Despite the significant cost and effort, it will likely have little bearing on the operational realities of evolving mine planning and the established practice of adaptive management. It would be far more practical and efficient to maintain the current arrangement of the department of Energy, Mines and Resources, Compliance, Monitoring and Inspections, to oversee and enforce reclamation requirements. The delegation of authority that are already in place from the Yukon government to the Water Board have long led to confusion among proponents and regulators alike, and further overlap will lead to inefficiency, inconsistency and uncertainty.

Timelines relating to the permitting process continuum for placer mining, particularly in the Indian River, are already a considerable disincentive, and contrary to multiple permitting and regulator agencies mandates to ensure efficiency and avoid duplication. Implementing these guidelines will only exacerbate this situation, further delaying the process, and discourage investment in the Yukon.

CANADIAN WILDLIFE SERVICE, DECEMBER 14, 2020

Summary: Environment and Climate Change Canada – Canadian Wildlife Service (CWS) responsibilities include the conservation and protection of migratory birds, as defined in the Migratory Birds Convention Act (MBCA); the protection of species at risk under the federal Species at Risk Act (SARA); and coordinating the effective implementation of the Federal Policy on Wetland Conservation (FPWC).

In relation to these responsibilities, CWS would like to provide feedback to the Yukon Water Board (YWB) on its Wetland Information Guidelines. In January 2020, CWS met with the YWB to provide feedback on the draft YWB Wetland Information Guidelines. At that time CWS noted that the YWB Guidelines did not include information requirements on the ecological aspects of wetlands, for example impacts to fish and/or wildlife or their habitat. CWS understands that fish and wildlife and their habitat are not the mandate of the YWB; however, disturbance and or destruction of wetlands may have impacts on fish and/or wildlife and their habitat, as well as on water quality, quantity and flow.

CWS does not have any further suggestions to the content of the YWB Wetland Information Guidelines but does suggest that the information be required during the YESAA process, as it would assist in the consideration of impacts to fish and/or wildlife and their habitat.

In terms of wetland conservation, development and utilization objectives for a watershed and wetland reclamation objectives, CWS recommends that development of these objectives be guided by the Yukon Wetland Policy

TROY TAYLOR, DECEMBER 14, 2020

Summary: The timelines for water licences applications have been growing, particularly in the Indian River and become entirely unacceptable from a business development standpoint. In addition, these new guidelines that were implemented earlier this fall by the Board without industry consultation are entirely unrealistic from an operational or cost perspective. The licence applications have become more complicated and expensive to obtain. The costs associated with the new guidelines are beyond the capacity of independently owned family operations. The Water Board should also consider the environmental benefits of placer mining. For example, as a result of placer mining, permafrost is replaced with well drained ground that allows for rapid revegetation and a greater diversity of plant and animal life. The Yukon Water Board can remain focused on water quantity, quality and flow while also providing certainty to the placer industry by keeping applications and licences simple in order to foster compliance and enable consistent enforcement.

TINA GREEN, DAWSON HOME HARDWARE, DECEMBER 14, 2020

Summary: My business is very dependent on the mining community and without their support would be severely crippled. I implore you to put ALOT of thought into your decision and more community information meetings before making such a decision.

YUKON PROSPECTORS ASSOCIATION, DECEMBER 13, 2020

Summary: Responsible exploration and mine development is good and should be encouraged. The regulatory authorities, including yourselves, the Water Board, need to ensure that regulations, process, procedures and policies are really necessary to enable and encourage responsible exploration and mine development to thrive and to protect the water and the environment, The rules should be efficient and effective, allowing all to use best practises. Best practises for reclamation should be developed and agreed upon collaboratively with First Nations, Yukon Government and persons in the Industry using their first-hand experience and knowledge over generations of placer mining in the Yukon.

Regarding the Water Board Wetlands Information Guidelines: The draft "Guidelines" include requirements for information already required and included in the application to YESAB and the Water Board.

Question 1. What information should be required to support a water licence application for placer mining in wetlands?

The basic information on water and water flow on all claims to be mined, including both wetlands and on drier land that needs to be included in the YESAB assessments application should be included automatically in the Water Licence application.

Question 2. What should the wetland conservation, development and utilization objectives be on a watershed basis and how can they be balanced on an application basis?

As economic gold deposits are only located in a very small percentage of the land (including wetlands), those deposits (pay channels) should be allowed to be mined efficiently and responsibly with ongoing reclamation, so that the areas disturbed in the watershed will allow wilderness and its values to return.

Question 3. What wetland reclamation objectives should be considered during the water licensing process?

- Objectives should be to allow efficient responsible mining, with the exception of specific locations with special uses or where rare flora or fauna is located.
- The focus/requirement should be on good, best practices reclamation so the land, including wetlands, after mining, would allow for wilderness and its values to return, with biodiversity maintained or enhanced.
- Regulated low impact exploration and responsible mine development should be allowed.
- Economic mines are only located at very limited locations - less than 1% of the Yukon.
- Prospecting has already be prohibited in over half of the Yukon, and discouraged by other restrictions in even more of the Yukon.
- These restrictions are unnecessary for low-impact prospecting activities.
- Placer mining is a temporary disturbance to the land and responsible reclamation, using best practices does allow the wilderness to return and biodiversity maintained.
- After disturbances, like placer mining and best practices reclamation, the landscape is sometimes changed, but after reclamation, the wilderness and its values do return and the maintenance or enhancement of biodiversity should be considered acceptable, even if different, in the areas where mining does occur.
- There has been confusion regarding the overall process of obtaining permits. Regulations and processes and procedures change unexpectedly causing great discouragement in the Industry.
- More detailed regulations, procedures and hoops to jump through isn't needed to achieve good reclamation.
- Responsible mining and reclamation, including good management and monitoring, can and does achieve the objectives.

7 APPENDICES

Appendix A. Public Hearing Exhibit List

| Exhibit Number | Submission Date | Submitted By | Name of Document |
|----------------|-----------------|-------------------------------|--|
| 1.1.1 | Mar 10, 2020 | Yukon Water Board Secretariat | Hearing Notification Letter |
| 1.1.2 | Mar 10, 2020 | Yukon Water Board Secretariat | Preliminary Hearing Agenda |
| 1.1.3 | Mar 18, 2020 | Yukon Water Board Secretariat | Notice of Hearing Cancellation Letter |
| 1.1.4 | Aug 21, 2020 | Yukon Water Board Secretariat | Virtual Hearing Notification Letter |
| 1.1.5 | Aug 21, 2020 | Yukon Water Board Secretariat | Preliminary Virtual Hearing Agenda |
| 1.1.6 | Oct 9, 2020 | Yukon Water Board Secretariat | Preliminary Hearing Agenda - Update |
| 1.1.7 | Oct 23, 2020 | Yukon Water Board Secretariat | Draft Hearing Agenda |
| 1.2 | Oct 5, 2020 | Yukon Water Board Secretariat | Administrative Pre-Hearing Conference Notice |
| 1.2.1 | Oct 15, 2020 | Yukon Water Board Secretariat | Administrative Pre-Hearing Conference Summary and Directions |
| 1.3 | Mar 10, 2020 | Yukon Water Board Secretariat | Wetland Information Guidelines |
| 3.1 | Mar 6, 2020 | Yukon Water Board Secretariat | Advertising |
| 3.2 | Aug 19, 2020 | Yukon Water Board Secretariat | Advertising |
| 3.3 | Aug 24, 2021 | Yukon Water Board Secretariat | Advertising – What We Heard Report Release |
| 4.1 | Mar 10, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to the Minister October 7 2019 |
| 4.2 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to TH March 10, 2020 |
| 4.2.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to TH August 21, 2020 |
| 4.3 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to KPMA March 10, 2020 |
| 4.3.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to KPMA August 21, 2020 |
| 4.4 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to Ducks Unltd March 10, 2020 |
| 4.4.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to Ducks Unltd August 21, 2020 |
| 4.5 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to CYFN March 10, 2020 |
| 4.5.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to CYFN August 21, 2020 |
| 4.6 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to YCS March 10, 2020 |
| 4.6.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to YCS August 21, 2020 |
| 4.7 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to YG March 10, 2020 |
| 4.7.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to YG August 21, 2020 |
| 4.8 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to DFO March 10, 2020 |
| 4.8.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to DFO August 21, 2020 |
| 4.9 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to ECCC March 10, 2020 |
| 4.9.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to ECCC August 21, 2020 |
| 4.10 | Mar 11, 2020 | Yukon Water Board Secretariat | Yukon Water Board letter to YCM March 10, 2020 |
| 4.10.1 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to YCM August 21, 2020 |
| 4.11 | Mar 18, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter - Notice of Hearing Cancellation |
| 4.12 | Aug 21, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to FNNND August 21, 2020 |
| 4.13 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to CPAWS 2020 11 09 |

| Exhibit Number | Submission Date | Submitted By | Name of Document |
|----------------|-----------------|-------------------------------------|---|
| 4.14 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to DUC 2020 11 09 |
| 4.15 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to FNNND 2020 11 09 |
| 4.16 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to KPMA 2020 11 09 |
| 4.17 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to LFN 2020 11 09 |
| 4.18 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to TH 2020 11 09 |
| 4.19 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to VGG 2020 11 09 |
| 4.20 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to YCM 2020 11 09 |
| 4.21 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to YCS 2020 11 09 |
| 4.22 | Nov 9, 2020 | Yukon Water Board Secretariat | Information Request to YG 2020 11 09 |
| 4.23 | Aug 24, 2020 | Yukon Water Board Secretariat | Yukon Water Board Letter to the Minister - Placer Mining in Wetlands Public Interest Hearing – “What We Heard Report” |
| 5.1 | Sep 29, 2020 | Yukon Conservation Society | YCS Summary |
| 5.1.1 | Oct 27, 2020 | Yukon Conservation Society | YCS Presentation Material |
| 5.1.2 | Nov 30, 2020 | Yukon Conservation Society | YCS Response to IR |
| 5.1.3 | Dec 14, 2020 | Yukon Conservation Society | YCS Written Submission |
| 5.2 | Sep 30, 2020 | Yukon Government | YG Summary |
| 5.2.1 | Oct 27, 2020 | Yukon Government | YG Presentation Material (1/3) |
| 5.2.2 | Oct 27, 2020 | Yukon Government | YG Presentation Material (2/3) |
| 5.2.3 | Oct 27, 2020 | Yukon Government | YG Presentation Material (3/3) |
| 5.2.4 | Nov 30, 2020 | Yukon Government | YG Response to IR |
| 5.3 | Sep 30, 2020 | Klondike Placer Miners' Association | KPMA Summary |
| 5.3.1 | Oct 28, 2020 | Klondike Placer Miners' Association | KPMA Presentation Material |
| 5.3.2 | Nov 30, 2020 | Klondike Placer Miners' Association | KPMA Response to IR |
| 5.3.3 | Dec 14, 2020 | Klondike Placer Miners' Association | KPMA Written Submission |
| 5.3.4 | Dec 14, 2020 | Klondike Placer Miners' Association | KPMA Group Written Submission |
| 5.4 | Sep 30, 2020 | First Nation of Na-Cho Nyak Dun | FNNND Summary |
| 5.4.1 | Oct 28, 2020 | First Nation of Na-Cho Nyak Dun | FNNND Presentation Material (1/2) |
| 5.4.2 | Oct 28, 2020 | First Nation of Na-Cho Nyak Dun | FNNND Presentation Material (2/2) |
| 5.4.3 | Nov 30, 2020 | First Nation of Na-Cho Nyak Dun | FNNND Response to IR |
| 5.4.4 | Dec 14, 2020 | First Nation of Na-Cho Nyak Dun | FNNND Written Submission Cover Letter |
| 5.4.5 | Dec 14, 2020 | First Nation of Na-Cho Nyak Dun | FNNND Written Submission |
| 5.5 | Sep 30, 2020 | Ducks Unlimited Canada | DU Summary |
| 5.5.1 | Oct 28, 2020 | Ducks Unlimited Canada | DU Presentation Material |
| 5.5.2 | Nov 30, 2020 | Ducks Unlimited Canada | DU Response to IR |
| 5.5.3 | Dec 14, 2020 | Ducks Unlimited Canada | DUC Written Submission |
| 5.5.4 | Dec 14, 2020 | Ducks Unlimited Canada | DUC Written Submission Reference |
| 5.6 | Sep 30, 2020 | Yukon Chamber of Mines | YCM Summary |
| 5.6.1 | Oct 28, 2020 | Yukon Chamber of Mines | YCM Presentation Material |
| 5.6.2 | Oct 29, 2020 | Yukon Chamber of Mines | YCM Presentation Material - Closing Comments |
| 5.6.3 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR |

| Exhibit Number | Submission Date | Submitted By | Name of Document |
|-----------------------|------------------------|---------------------------------------|---|
| 5.6.3.1 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App A |
| 5.6.3.2 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (1/16) |
| 5.6.3.3 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (2/16) |
| 5.6.3.4 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (3/16) |
| 5.6.3.5 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (4/16) |
| 5.6.3.6 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (5/16) |
| 5.6.3.7 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (6/16) |
| 5.6.3.8 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (7/16) |
| 5.6.3.9 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (8/16) |
| 5.6.3.10 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (9/16) |
| 5.6.3.11 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (10/16) |
| 5.6.3.12 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (11/16) |
| 5.6.3.13 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (12/16) |
| 5.6.3.14 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (13/16) |
| 5.6.3.15 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (14/16) |
| 5.6.3.16 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (15/16) |
| 5.6.3.17 | Nov 30, 2020 | Yukon Chamber of Mines | YCM Response to IR App B (16/16) |
| 5.6.4 | Dec 14, 2020 | Yukon Chamber of Mines | YCM Written Submission |
| 5.6.4.1 | Dec 14, 2020 | Yukon Chamber of Mines | YCM Written Submission Appendices |
| 5.7 | Oct 2, 2020 | Liard First Nation | LFN Summary |
| 5.8 | Sep 30, 2020 | Tr'ondëk Hwëch'in | TH Summary |
| 5.8.1 | Oct 27, 2020 | Tr'ondëk Hwëch'in | TH Presentation Material (1/5) |
| 5.8.2 | Oct 27, 2020 | Tr'ondëk Hwëch'in | TH Presentation Material (2/5) |
| 5.8.3 | Oct 27, 2020 | Tr'ondëk Hwëch'in | TH Presentation Material (3/5) |
| 5.8.4 | Oct 27, 2020 | Tr'ondëk Hwëch'in | TH Presentation Material (4/5) |
| 5.8.5 | Oct 27, 2020 | Tr'ondëk Hwëch'in | TH Presentation Material (5/5) |
| 5.8.6 | Nov 30, 2020 | Tr'ondëk Hwëch'in | TH Response to IR |
| 5.8.7 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission |
| 5.8.7.1 | Dec 14, 2020 | Tr'ondëk Hwëch'in | Th Written Submission Appendix A |
| 5.8.7.2 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix B |
| 5.8.7.3 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix C |
| 5.8.7.4 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix D |
| 5.8.7.5 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix E |
| 5.8.7.6 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix F |
| 5.8.7.7 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix G |
| 5.8.7.8 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix H |
| 5.8.7.9 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix I |
| 5.8.7.10 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix J |
| 5.8.7.11 | Dec 14, 2020 | Tr'ondëk Hwëch'in | TH Written Submission Appendix H Audio File |
| 5.9.1 | Oct 27, 2020 | Canadian Parks and Wilderness Society | CPAWS Presentation Material |

| Exhibit Number | Submission Date | Submitted By | Name of Document |
|-----------------------|------------------------|---------------------------------------|--|
| 5.9.2 | Oct 29, 2020 | Canadian Parks and Wilderness Society | CPAWS Presentation Material - Closing Comments |
| 5.9.3 | Nov 30, 2020 | Canadian Parks and Wilderness Society | CPAWS Response to IR |
| 5.9.4 | Dec 11, 2020 | Canadian Parks and Wilderness Society | CPAWS Further Response to IR |
| 5.10 | Oct 27, 2020 | E Peart | E Peart Written Submission |
| 5.11 | Oct 28, 2020 | G Fekete | G Fekete Written Submission |
| 5.12 | Nov 30, 2020 | R Mueller | R Mueller Written Submission |
| 5.13 | Nov 5, 2020 | A Lebedoff | A Lebedoff Written Submission |
| 5.14 | Nov 19, 2020 | K McKenna | K McKenna Written Submission |
| 5.15 | Dec 8, 2020 | Mayo Renewable Resources Council | Mayo RRC Written Submission |
| 5.16 | Dec 9, 2020 | Yukon Bird Club | Yukon Bird Club Written Submission |
| 5.17 | Dec 10, 2020 | S Schmidt | S Schmidt Written Submission |
| 5.18 | Dec 10, 2020 | S Rogan | S Rogan Written Submission |
| 5.19 | Dec 10, 2020 | L Gillespie | L Gillespie Written Submission |
| 5.20 | Dec 11, 2020 | D Brown | D Brown Written Submission |
| 5.20.1 | Dec 11, 2020 | D Brown | D Brown Written submission (email) |
| 5.21 | Dec 11, 2020 | C Danae | C Danae Written Submission |
| 5.22 | Dec 11, 2020 | R Farrell | R Farrell Written Submission |
| 5.23 | Dec 11, 2020 | M Beaudry | M Beaudry Written Submission |
| 5.24 | Dec 11, 2020 | JP Favron | JP Favron Written Submission |
| 5.25 | Dec 10, 2020 | B McCaughan | B McCaughan Written submission |
| 5.26 | Dec 13, 2020 | M Friesen | M Friesen Written Submission |
| 5.27 | Dec 13, 2020 | D James | D James Written Submission |
| 5.28 | Dec 10, 2020 | J Christensen | J Christensen Written Submission |
| 5.29 | Dec 13, 2020 | K Knutson | K Knutson Written Submission |
| 5.30 | Dec 14, 2020 | M McDougall | M McDougall Written Submission |
| 5.31 | Dec 14, 2020 | P Brokking | P Brokking Written Submission |
| 5.32 | Dec 14, 2020 | M Mickey | M Mickey Written Submission |
| 5.33 | Dec 14, 2020 | B MacDonald | B MacDonald Written Submission |
| 5.34 | Dec 14, 2020 | H Van Riesen | H Van Riesen Written Submission |
| 5.35 | Dec 14, 2020 | C Brown | C Brown Written Submission |
| 5.36 | Dec 13, 2020 | R & MA Lewis | R M A Lewis Written Submission |
| 5.37 | Dec 13, 2020 | Laberge Renewable Resources Council | Laberge Renewable Resources Council Written Submission |
| 5.38 | Dec 13, 2020 | J Looker | J Looker Written Submission |
| 5.39 | Dec 12, 2020 | J Barr | J Barr Written Submission |
| 5.40 | Dec 12, 2020 | D Wall | D Wall Written Submission |
| 5.41 | Dec 12, 2020 | J Wilkie | J Wilkie Written Submission |
| 5.41.1 | Dec 12, 2020 | J Wilkie | J Wilkie Written Submission email |
| 5.42 | Dec 12, 2020 | S Petrie | S Petrie Written Submission |
| 5.43 | Dec 12, 2020 | J Dagg | J Dagg Written Submission |

| Exhibit Number | Submission Date | Submitted By | Name of Document |
|----------------|-----------------|--|--|
| 5.44 | Dec 12, 2020 | J Alton | J Alton Written Submission |
| 5.45 | Dec 12, 2020 | R Riemer | R Riemer Written Submission |
| 5.46 | Dec 11, 2020 | D Roberts | D Roberts Written Submission |
| 5.47 | Dec 14, 2020 | E Jamieson | E Jamieson Written Submission |
| 5.48 | Dec 14, 2020 | J Sands | J Sands Written Submission |
| 5.49 | Dec 14, 2020 | A Green | A Green Written Submission |
| 5.50 | Dec 14, 2020 | S Rushforth | S Rushforth Written Submission |
| 5.51 | Dec 14, 2020 | L Bulmer | L Bulmer Written Submission |
| 5.52 | Dec 14, 2020 | M Heisey | M Heisey Written Submission |
| 5.53 | Dec 14, 2020 | K Marsters | K Marsters Written Submission |
| 5.54 | Dec 14, 2020 | C Marsters | C Marsters Written Submission |
| 5.55 | Dec 14, 2020 | N Loveless | N Loveless Written Submission |
| 5.56 | Dec 14, 2020 | M Knutson | M Knutson Written Submission |
| 5.57 | Dec 14, 2020 | D Bulmer | D Bulmer Written Submission |
| 5.58 | Dec 14, 2020 | S P Derry | S P Derry Written Submission |
| 5.59 | Dec 14, 2020 | D Procee | D Procee Written Submission |
| 5.60 | Dec 14, 2020 | M George | M George Written Submission |
| 5.61 | Dec 14, 2020 | H Schmidt | H Schmidt Written Submission |
| 5.62 | Dec 14, 2020 | Syvanna Schmidt | Syvanna Schmidt Written Submission |
| 5.63 | Dec 14, 2020 | Nona Loveless | Nona Loveless Written Submission |
| 5.64 | Dec 14, 2020 | P Schnabel | P Schnabel Written Submission |
| 5.65 | Dec 14, 2020 | M Mather | M Mather Written Submission |
| 5.66 | Dec 14, 2020 | R Peck | R Peck Written Submission |
| 5.67 | Dec 14, 2020 | J Tatlow | J Tatlow Written Submission |
| 5.68 | Dec 14, 2020 | A MacGregor | A MacGregor Written Submission |
| 5.69 | Dec 14, 2020 | T Fenton | T Fenton Written Submission |
| 5.70 | Dec 14, 2020 | T Christie | T Christie Written Submission |
| 5.71 | Dec 14, 2020 | D Marsters | D Marsters Written Submission |
| 5.72 | Dec 14, 2020 | P Jenkins | P Jenkins Written Submission |
| 5.73 | Dec 14, 2020 | J Smith | J Smith Written Submission |
| 5.74 | Dec 14, 2020 | J Christie | J Christie Written Submission |
| 5.75 | Dec 14, 2020 | Department of Fisheries and Oceans Canada | DFO Written Submission |
| 5.76 | Dec 14, 2020 | G L Favron | G L Favron Written Submission |
| 5.77 | Dec 14, 2020 | Wildlife Conservation Society Canada | Wildlife Conservation Society Written Submission |
| 5.78 | Dec 14, 2020 | T Hume | T Hume Written Submission |
| 5.79 | Dec 14, 2020 | J Rudolf | Late filing - J Rudolf Written Submission |
| 5.80 | Dec 14, 2020 | S Biggs | Late filing - S Biggs Written Submission |
| 5.81 | Dec 14, 2020 | M Gehrig | Late filing - M Gehrig Written Submission |
| 5.82 | Dec 14, 2020 | Environment and Climate Change Canada | Late filing - ECCC Written Submission |

| Exhibit Number | Submission Date | Submitted By | Name of Document |
|-----------------------|------------------------|-------------------------------|---|
| 5.83 | Dec 14, 2020 | T Taylor | Late filing - T Taylor Written Submission |
| 5.84 | Dec 14, 2020 | T Green | Late filing - T Green Written Submission |
| 5.85 | Dec 15, 2020 | Yukon Prospectors Association | Late filing - Yukon Prospectors Association Written Submission |
| 10.1.1 | Nov 5, 2020 | Yukon Water Board Secretariat | Recording of Public Hearing 2020 10 27 AM |
| 10.1.2 | Nov 5, 2020 | Yukon Water Board Secretariat | Recording of Public Hearing 2020 10 27 PM |
| 10.1.3 | Nov 5, 2020 | Yukon Water Board Secretariat | Recording of Public Hearing 2020 10 28 AM |
| 10.1.4 | Nov 5, 2020 | Yukon Water Board Secretariat | Recording of Public Hearing 2020 10 28 PM |
| 10.1.5 | Nov 5, 2020 | Yukon Water Board Secretariat | Recording of Public Hearing 2020 10 29 AM |
| 10.1.6 | Nov 5, 2020 | Yukon Water Board Secretariat | Recording of Public Hearing 2020 10 29 PM |
| 10.2 | Dec 17, 2020 | Yukon Water Board Secretariat | Transcript of Hearing |
| 10.3 | August X, 2021 | Yukon Water Board | Public Interest Hearing on Placer Mining in Wetlands – What We Heard Report |

Appendix B. Public Interest Hearing on Placer Mining in Wetlands Agenda

AGENDA
(October 23, 2020)
PLACER MINING IN WETLANDS PUBLIC INTEREST HEARING
October 27-29, 2020 (virtual)

October 27, 2020

| # | Time | Minutes | Item |
|-----------|---------------|---------|--|
| 1. | 9:00 - 9:05 | 5 | Introductory Remarks and Opening Prayer |
| 2. | 9:05 - 9:10 | 5 | Introductions |
| 3. | 9:10 - 9:30 | 20 | Opening Statement / Procedural Matters |
| 4. | | | Context Presentations |
| 4.1 | 9:30 - 9:45 | 15 | Legal Framework - Mara Pollock |
| 4.2 | 9:45 - 10:45 | 60 | Wetlands in Yukon - Scott Smith |
| | 10:45 - 11:00 | 15 | <i>Break</i> |
| 5. | | | Representations from Participants |
| 5.1 | 11:00 - 11:30 | 30 | Yukon Conservation Society |
| 5.2 | 11:30 - 12:00 | 30 | Canadian Parks and Wilderness Society |
| | 12:00 - 13:30 | 90 | <i>Lunch</i> |
| 5.3 | 13:30 - 15:15 | 105 | Government of Yukon |
| | 15:15 - 15:30 | 15 | <i>Break</i> |
| 5.4 | 15:30 - 17:30 | 120 | Tr'ondëk Hwëch'in |

October 28, 2020

| # | Time | Minutes | Item |
|-----------|---------------|---------|---|
| | 8:45 - 9:00 | 15 | Opening Matters |
| 5. | | | Representations from Participants Con't. |
| 5.5 | 9:00 - 11:00 | 120 | Klondike Placer Miners' Association |
| | 11:00 - 11:15 | 15 | <i>Break</i> |
| 5.6 | 11:15 - 12:15 | 60 | Ducks Unlimited Canada |
| | 12:15 - 13:45 | 90 | <i>Lunch</i> |
| 5.7 | 13:45 - 15:45 | 120 | First Nation of Na-Cho Nyak Dun |
| | 15:45 - 16:00 | 15 | <i>Break</i> |
| 5.8 | 16:00 - 17:00 | 60 | Yukon Chamber of Mines |

AGENDA (con't)
 (October 23, 2020)
PLACER MINING IN WETLANDS PUBLIC INTEREST HEARING
 October 27-29, 2020 (virtual)

| October 29, 2020 | | | |
|------------------|---------------|---------|---|
| # | Time | Minutes | Item |
| | 8:45 - 9:00 | 15 | Opening Matters |
| 5. | | | Representations from Participants Con't. |
| 5.9 | 9:00 - 9:40 | 40 | Vuntut Gwitchin Government |
| 5.10 | 9:40 - 10:25 | 45 | Liard First Nation |
| | 10:25 - 10:40 | 15 | <i>Break</i> |
| 6. | | | Participants Closing Remarks |
| 6.1 | 10:40 - 10:55 | 15 | Yukon Conservation Society |
| 6.2 | 10:55 - 11:10 | 15 | Canadian Parks and Wilderness Society |
| 6.3 | 11:10 - 11:25 | 15 | Government of Yukon |
| 6.4 | 11:25 - 11:40 | 15 | Tr'ondëk Hwëch'in |
| 6.5 | 11:40 - 11:55 | 15 | Klondike Placer Miners' Association |
| | 11:40 - 13:10 | 90 | <i>Lunch</i> |
| 6. | | | Participants Closing Remarks (con't) |
| 6.6 | 13:10 - 13:25 | 15 | Ducks Unlimited Canada |
| 6.7 | 13:25 - 13:40 | 15 | First Nation of Na-Cho Nyak Dun |
| 6.8 | 13:40 - 13:55 | 15 | Yukon Chamber of Mines |
| 6.9 | 13:55 - 14:10 | 15 | Vuntut Gwitchin Government |
| 6.10 | 14:10 - 14:25 | 15 | Liard First Nation |
| | 14:25 - 14:40 | 15 | <i>Break</i> |
| | | | Closing |
| 7. | 14:40 - 14:55 | 15 | Water Board Closing Remarks |
| 8. | 14:55 - 15:00 | 5 | Closing Prayer |