



Baker Lake, NU
Sept 25- 26, 2017

[illegible]

ኖርዮጋኒኮቶኒክ

1. DFO - Fisheries Protection Program Mandate, legislation and policies.
2. Final Technical Comments and Recommendations:
 - Habitat Losses
 - Valued Components
 - Habitat Alteration
 - Changes to Lake Ecosystem Productivity
 - Water Quality & Flow Monitoring Plan
3. Conclusions
4. Questions or Comments

- [illegible]



DFO's Fisheries Protection Program - Mandate

The **mandate** of the Fisheries Protection Program is to maintain the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries.



ΔΛΓΔCΓΛΔΔΔΔΔΔ
ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ
ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ

ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ
ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ
ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ
ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ
ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ



DFO – Legislation

Fisheries Act

- Section 35
 - Prohibits serious harm to fish
 - Allows for authorization of impacts with conditions
- Sections 20, 21
 - Requirement for sufficient water, fish passage

Species at Risk Act

- Sections 32, 33, 58
 - Prohibits killing, harming, harassing, capturing or taking of listed species, destruction of residence, critical habitat

Nunavut Land Claims Agreement (Article 12)

ΔΛΓΔCΓΛΔΔΔΔΔΔ – ΔΔΔΔΔ

ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ

- ΔΔΔΔΔ 35
 - ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔ
 - ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ

- ΔΔΔΔΔ 20, 21
 - ΔΔΔΔΔ ΔΔΔΔΔ, ΔΔΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ

ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔ

- ΔΔΔΔΔ 32, 33, 58
 - ΔΔΔΔΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ, ΔΔΔΔΔΔΔΔΔΔ, ΔΔΔΔΔΔΔΔΔΔ, ΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ, ΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ, ΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ ΔΔΔΔΔΔΔΔΔΔ (ΔΔΔΔΔ 12)

DFO - Policy

$$\Delta L^{\epsilon} \Gamma \triangleright C c n^b d^c - \Lambda^{\epsilon} d \rhd \Delta^c$$

- **Fisheries Protection Policy Statement (2013)**

- Guidance on implementing the fisheries protection provisions of *Fisheries Act*

- **Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting (2013)**

- Guidance on measures to offset serious harm to fish

- **Δ⁹ἑλῆνιστίς < ἑλῆνιστίς**
Ἀῖδῶν Δ⁹ ἑλῆνιστίς (2013)

- $\Delta \text{C}_{\text{PL}} \Delta \text{C}_{\text{PC}} \Delta \text{C}_{\text{PD}} \Delta \text{C}_{\text{PE}}$
 $\Delta \text{C}_{\text{PL}} \Delta \text{C}_{\text{PC}} \Delta \text{C}_{\text{PD}} \Delta \text{C}_{\text{PE}}$
 $\Delta \text{C}_{\text{PL}} \Delta \text{C}_{\text{PC}} \Delta \text{C}_{\text{PD}} \Delta \text{C}_{\text{PE}}$
 $\Delta \text{C}_{\text{PL}} \Delta \text{C}_{\text{PC}} \Delta \text{C}_{\text{PD}} \Delta \text{C}_{\text{PE}}$

[illegible]

- $\Delta \nabla \Delta^c$
 $\dot{\Delta}^c \nabla^b \nabla^a \Delta^b \sigma^c$



Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.1 Habitat Losses

Δ⁹Ἰνδ^ῶς ἑλ^ῶς # 3.1 ἑλ^ῶς
ἑλ^ῶς ἑλ^ῶς

- **3.1.1 Request:** DFO requests that AEM provide detailed illustrations, prior to the commencement of the regulatory phase to demonstrate the habitat viability of the proposed 13% increased surface area of Whale Tail Lake. DFO notes AEM had agreed to this request following DFO's technical submission March 28, 2017.

- [illegible]



Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.1 Habitat Losses

- **3.1.2 Request:** DFO request s that AEM provide additional details outlining the potential mixing or non-mixing in the pit portion of Whale Tail Lake as there is insufficient information as adopted from Meadowbank's CREMP and Water Quality Monitoring Plan to do so. If sustainable water quality and habitat suitable for fish in the post-closure scenario cannot be demonstrated, DFO requests AEM provide DFO with contingency offsetting options located outside the Whale Tail Lake basin.

Δ⁹Ἰνδ^ῆς ἑλ^ῆς # 3.1 ἑλ^ῆς
Δ⁹Ἰνδ^ῆς ἑλ^ῆς

- [illegible]



Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.1 Habitat Losses

- **3.1.3 Request:** DFO requests that AEM provide additional and updated information on the evaluation of end pit lake scenarios, with references, to address DFO's concerns regarding long term water quality and physical habitat in the proposed end pit lakes. DFO notes this information was requested in it's Technical submission.

Δ⁹b⁹Γ▷C-η₂d^c#3.1 ነገር
Δ⁹Γ^cη₂▷d^c

- [illegible]



የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.2 Valued Components

ΔΛΓ▷Cεηδ^c#3.2▷Δη▷Cη<ε^b>ε^b
CΛ^aα CΔΛ^c>ε^b>σ^c σ^c<ησ^c
bLJ^aα>ηC

- **3.2.1 Request:** DFO requests that AEM give equal weights to species based on presence/absence in the offsetting calculation. DFO notes that the request to assign equal value to all fish species was part of Commitment #31 from the Technical Meeting in April 2017.

- [illegible]



Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.3 Habitat Alteration

ΔL⁹▷C_Cη^bd^c # 3.3
α⁹bC▷^c▷^c
9b.0⁹b^c▷C▷^aα^cσ^aρ^c

- **3.3.1 Request:** DFO requests AEM provide additional information to clarify the calculations respecting the 24 hectares and 3390 linear metres of habitat loss associated with impacted waterbodies in the post-closure scenario, and how the proposed June 17 offsetting plan accounts for these losses.

- [illegible]



Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.3 Habitat Alteration

$\Delta L^{\epsilon} \Gamma \triangleright C \ulcorner \alpha \urcorner^b d^c$ # 3.3

Q596C▷◁C

ፍፁም ፍቅር ነው።

- **3.3.2 Request:** DFO requests AEM clarify the calculated numbers for habitat losses for all phases of the project, including providing the rationale and raw data for the calculations.

- [illegible]



11

Canada

Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.3 Habitat Alteration

$\Delta L^q \Gamma \triangleright C \subseteq \mathcal{L}^b \mathcal{D}^c \# 3.3$

Q. 46. $\frac{1}{2} \times \frac{3}{4} \times \frac{5}{6} \times \frac{7}{8} \times \frac{9}{10}$

ፍጥነት ምሳሌ

- **3.3.3 Request:** DFO requests AEM provide more information regarding their plan to permanently flood Whale Tail Lake by raising the water level by 0.5m, including an analysis of the long-term sustainability of the higher water condition and a clear rationale for considering it a habitat gain.

- [illegible]



12

Canada

Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.4 Changes to Lake Ecosystem Productivity

$\Delta L^q \Gamma \triangleright C \text{--} \mathcal{L}^b d^C \# 3.4$

Δρ²ρ⁴σ²τ²ε²γ

ፍፁም ልማትና ፍጥነት

ΔΡ^{5b} < C < ΔL⁹ⁱ C

- **3.4.1 Request:** DFO requests clarification on whether the newly proposed changes to the project, specifically in the form of the phosphorus treatment, will still result in a change to the trophic status of the lake.

- [illegible]



13

Canada

Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.4 Changes to Lake Ecosystem Productivity

ΔL⁹Γ▷Cc₂λ^bd^c # 3.4

Δρ²ρσ²τ²ϕ²

$$\epsilon_b \Delta^c \dot{\zeta}_c - \epsilon_\sigma \dot{\eta}_c$$

$\Delta P^{fb} < \epsilon \leq \Delta L^{\text{q.i.c.}}$

- **3.4.2 Request:** DFO requests that the losses caused by a trophic change in the lake ecosystem from nutrient overloading be considered as losses in the calculations for offsetting.

- [illegible]



14

Canada

Final Technical Comments

ፖሊሲ ምክር ቤቱ ለፍጥነት ምክር ቤቱ

DFO # 3.4 Changes to Lake Ecosystem Productivity

$$\Delta L^{\frac{5}{2}} \triangleright C \subset \mathcal{N}^b d^C \# 3.4$$

Δρ⁷σ⁹τζ ερς

$${}^{\circ}\text{b}_m\Delta^{\circ}\text{C}-{}^{\circ}\text{C}^{\circ}\text{C}$$

AP^{9b} < ^c < ^d L⁹ⁱ C⁹

- **3.4.3 Request:** DFO requests clarification on whether AEM is planning on conducting a study in conjunction with University of Manitoba on the change in fisheries productivity due to a change in the lake ecosystem from oligotrophic to eutrophic and back again.

- 3.4.3 ኃሳብ:** ለፍጥር ሲሰራ
ኃሳብ ሲሰራ ለAEM
ቀጠለው ሲሰራ ለAEM-ወር ሲሰራ
ኃሳብ ሲሰራ ለሰራ ሲሰራ ሲሰራ
ሰራ ሲሰራ ሲሰራ ሲሰራ ሲሰራ
ሰራ ሲሰራ ሲሰራ ሲሰራ ሲሰራ
ሰራ ሲሰራ ሲሰራ ሲሰራ ሲሰራ
ሰራ ሲሰራ ሲሰራ ሲሰራ ሲሰራ
ሰራ ሲሰራ ሲሰራ ሲሰራ ሲሰራ
ሰራ ሲሰራ ሲሰራ ሲሰራ ሲሰራ



15

Canada

Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.5 Water Quality & Flow Monitoring Plan

ΔΛΓΠΔርሲፊሮ # 3.5 ΔΛΔር
Δፀሚሮ ለፈጋ ልዩሮና ምሥራዕ
ናፀፈጋ ምሥራር ናፀፈጋ ምሥራር

$$\Delta \triangleright \sigma^a \Gamma^c \triangleleft L L \triangleright \Delta^a \Gamma^c \sigma^a \Gamma^a$$
$$f_{b \rightarrow c} \leq f_{b \rightarrow d}$$

- **3.5.1 Request:** DFO requests that AEM place monitoring stations in Whale Tail South Basin, Mammoth Lake and Nemo Lake in the locations or similar to the locations described in the table provided in DFO's Final Written Submission. DFO also requests that multiple depths, temperature, Pressure, Dissolved Oxygen, pH, Salinity and Conductivity be sampled at all locations.

- [illegible]



16

Canada

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.5 Water Quality & Flow Monitoring Plan

$\Delta L^9 \Gamma \triangleright C c n^b d^c \# 3.5 \Delta L \Delta^c$

ΔΔσ²Γ^cΔ₄Δ

Δ⁹Τ⁹Σ⁹Τ⁹Δ

$$96 \triangleright 73 \quad 96 \triangleright 50 \quad 96 \triangleright 27 \quad 96 \triangleright 4$$

- **3.5.2 Request:** DFO requests that AEM include at least 2 control lake monitoring stations in the Water Quality and Flow Monitoring Plan and include rationale to as to why the reference lakes that are chosen are appropriate.

- [illegible]



Final Technical Comments

የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ

DFO # 3.5 Water Quality & Flow Monitoring Plan

$$\Delta L^9 \Gamma \triangleright C \subset \mathcal{L}^b d^c \# 3.5 \Delta L \Delta^c$$

$\Delta \triangleright \sigma^2 \Gamma^C \triangleleft L \cup \Delta^2 \Gamma^C \sigma^2 \Gamma^a _D$

$$f_{B \rightarrow \pi} \approx f_{B \rightarrow \rho} \approx f_{B \rightarrow \omega} \approx f_{B \rightarrow \eta}$$

- **3.5.3 Request:** DFO requests AEM ensure consistency in sampling frequency i.e. all stations as suggested by DFO are sampled each monitoring year rather than 1 station in year 4 and a different one in year 11 as is currently the case in AEM's Water Quality and Flow Monitoring Plan.

- [illegible]



Conclusion

Fisheries and Oceans Canada will continue to work cooperatively with the Proponent and stakeholders, including potentially impacted communities, to ensure that:

- appropriate mitigation measures, follow-up and monitoring programs are implemented;
- The proponent continues to work with Fisheries and Oceans Canada and the impacted communities to finalize the Fish Habitat Offsetting Plan, the Fish-Out plan, the Water Quality and Flow Monitoring Plan and the Fisheries and Offsetting Monitoring Plan

Δρ. Γ. Α. Σ.

ልሊናጋርር-ሲኔኮር ከዐርፍ
 ለርሲኮቦኔልግሊናጋርር ሲኔኮር
 ለሲኮቦኔልግሊናጋርር ሲኔኮር
 ለሲኮቦኔልግሊናጋርር ሲኔኮር

[illegible][illegible]

ལྷན་སྐྱོང་། Thank You

◀ ԳԾՈՒԿՆԷ? Questions?