



Fisheries and Oceans
Canada

Pêches et Océans
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MVEIRP Public Hearing

DeBeers Canada Gahcho Kué Diamond Mine Project

Fisheries and Oceans Canada

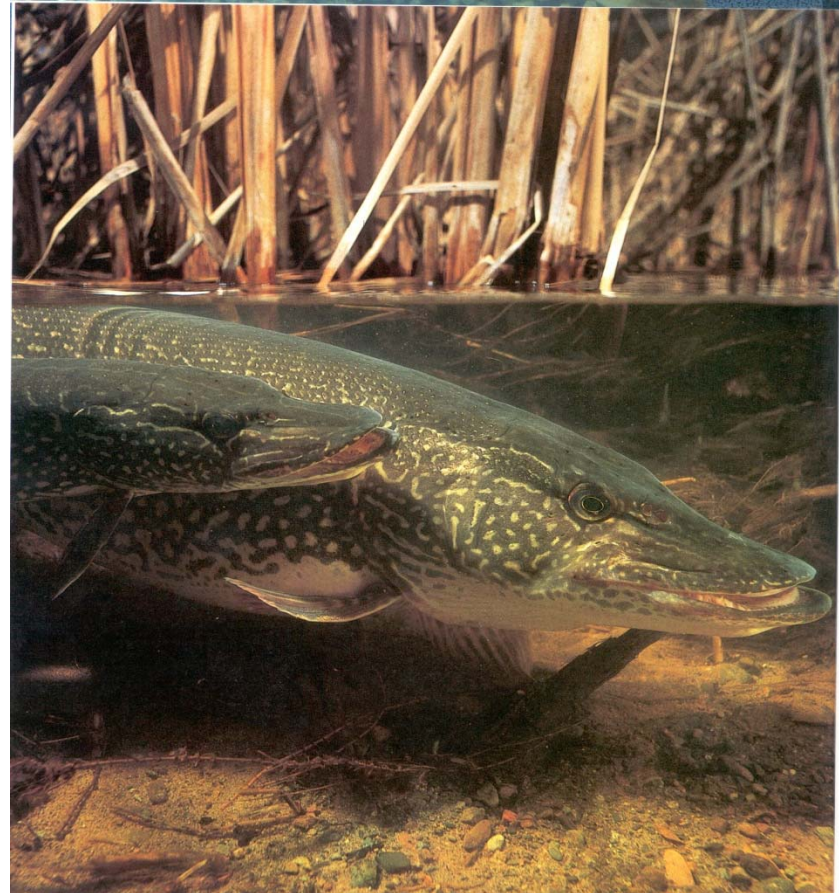
December 5-8th, 2012

Yellowknife, NWT



Overview

1. DFO Mandate
2. Technical Review
Conclusions and
Recommendations





DFO Mandate

- Responsible for developing and implementing policies and programs in support of Canada's scientific, ecological, social and economic interests in oceans and fresh waters
- Guiding legislation includes the Fisheries Act - confers responsibility to the Minister for management of fisheries, habitat and aquaculture





Fisheries Act

Section 22 – Sufficient water flow for the passage of fish

Section 30 - Fish guards and screens

Section 32 - Destruction of fish by means other than fishing

Section 35 – Harmful alteration, disruption or destruction (HADD) of fish habitat

Section 36 - Prohibits the deposit of deleterious substance into fish bearing waters (**administered by Environment Canada**)



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Technical Review Conclusions and Recommendations



Fish and Aquatic Baseline Information

Issue

- Inconsistencies in fish and aquatic baseline data collection including differences in sampling methodologies, data analyses, and detection limits





Fish and Aquatic Baseline Information

Recommendation

- The Proponent commit to adopting and using standardized, repeatable methods for baseline data collection, and ensure that appropriate data are collected prior to any development
- Baseline data should include:
 - Data from reference lakes
 - Assessment of the natural variability of plankton, both within and among years



Overwintering Habitat

Issue

- Overwintering is a sensitive time for fish and adequate overwintering habitat can be critical for fish survival
- Kennady Lake provides important overwintering habitat that may be otherwise limited in the watershed





Overwintering Habitat

Recommendation

- The Proponent provide a revised table to DFO that includes a summary of information pertaining to fish overwintering habitat (e.g. ice thickness, waterbody size, maximum depth, dissolved oxygen, sample dates)



Riverine Habitat

Issue

- Streams may be impacted by the project and therefore adequate baseline data are required in order track and monitor changes as a result of the project





Riverine Habitat

Recommendation

- The Proponent commit to providing a revised tabulated summary of the pre-impacted study area streams including a detailed description of the existing substrates within these streams



Alternatives Analysis

Issue

- Water levels throughout Kennady Lake are to be lowered or completely drained to facilitate construction of infrastructure and development of pits





Alternatives Analysis

Issue (cont.)

- Loss of overwintering habitat for Area 7 and Area 8 fish populations due to proposed dry dyke construction.
- Sediment release during dyke construction.





Alternatives Analysis

Recommendations

- The Proponent should further evaluate alternatives which allow Area 7 to be retained as it provides very important overwintering habitat for Valued Ecosystem Component (VEC) species in both Areas 7 and 8.
- Develop and implement a sediment management plan for dyke construction (such as the use of silt curtains) to prevent potential sediment release to fish habitat.



Dyke Construction and Dewatering

Issues

- Perimeter dyking to facilitate internal dykes and drawdown will negatively impact streams and lakes that flow into Kennady Lake and the fish habitat these waterbodies provide
- Sediment-laden waters from southern basins proposed to be pumped to the northern basins will delay habitat recovery





Dyke Construction and Dewatering

Recommendations

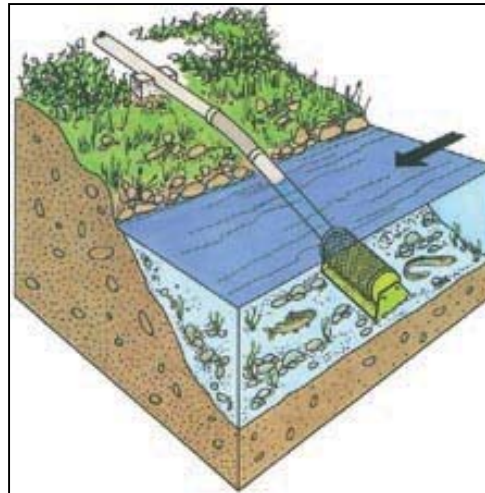
- The Proponent commit to addressing impacts to habitat in streams and lakes due to changes in drainage patterns due to loss of connection to Kennady Lake
- The Proponent is encouraged to assess and implement best management practices to further mitigate impacts of sediment to fish habitat resulting from the transfer of sediment laden water from the southern basins



Water Withdrawal, Diffusers and Intakes

Issue

- Potential impacts to fish and fish habitat resulting from water withdrawal for mine use from lakes including Area 8
- Potential for erosion from water discharge and loss of habitat use in the zone of turbulence





Water Withdrawal, Diffusers and Intakes

Recommendation

- Establish minimum water level thresholds with a mitigation action plan to be initiated should these thresholds be approached in order to protect littoral habitats in water-withdrawal lakes including Area 8



Downstream Effects – Impacts on Flow

Issue

- Changes in flow can have impacts on fish and fish habitat including limiting access to, and quality of, spawning and rearing area, and overwintering habitats





Downstream Effects – Impacts on Flow

Recommendation

- The proponent develop and implement a revised Flow Mitigation Plan that incorporates and details operational procedures and protocols. The plan allows for adjustments for site-specific changes and includes:
 - Measures to address changes in required flow volume, duration and timing for wet and dry years;
 - Detailed downstream flow measurements (N11, N1); and,
 - Plans to monitor downstream effects (part of AEMP)



Definitions for Impact Assessment

Issue

- Proponent's definition of **permanent** is not appropriate for assessing fish and fish habitat impacts.
- The terms **desired** and **persistence** are not quantifiable.





Definitions for Impact Assessment

Recommendations

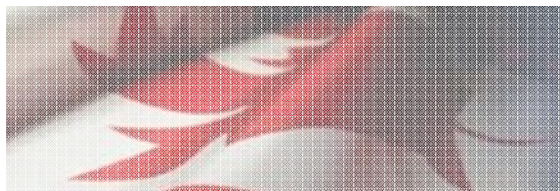
- The duration of the potential impacts to VECs should be defined in a manner which is relevant to the lifecycle of the VEC of concern; for e.g. impacts which would extend beyond the one generation of a fish within a given waterbody should be considered “permanent”
- The Proponent should provide a clear definition for "desired" (in terms of populations) and "persistence“



Closure

Issue

- Ensuring that Kennedy Lake can be re-established as a self sustaining ecosystem requires consideration of:
 - slow growth of aquatic and riparian vegetation
 - Condition of the aquatic ecosystem prior to re-introduction of fish





Closure

Recommendations

- All fish species and life stages should be excluded from Kennady Lake until the impacted areas are restored to the extent that they can support fish.
- A comprehensive aquatic and riparian re-vegetation plan should be developed and implemented as soon as possible to ensure that vegetation efforts are establishing as intended



Offsetting Losses to Fish Habitat

Issues

- A conceptual plan for offsetting losses of fish habitat (NNLP) was outstanding.
- The Proponent provided a revised document in November (Golder 2012). DFO will continue to work with the proponent and aboriginal groups to finalize the No Net Loss Plan for application in the regulatory phase.
- A combination of physical habitat enhancement projects and research options to reduce uncertainty are being discussed both with DFO and Aboriginal organizations



Concluding Remarks

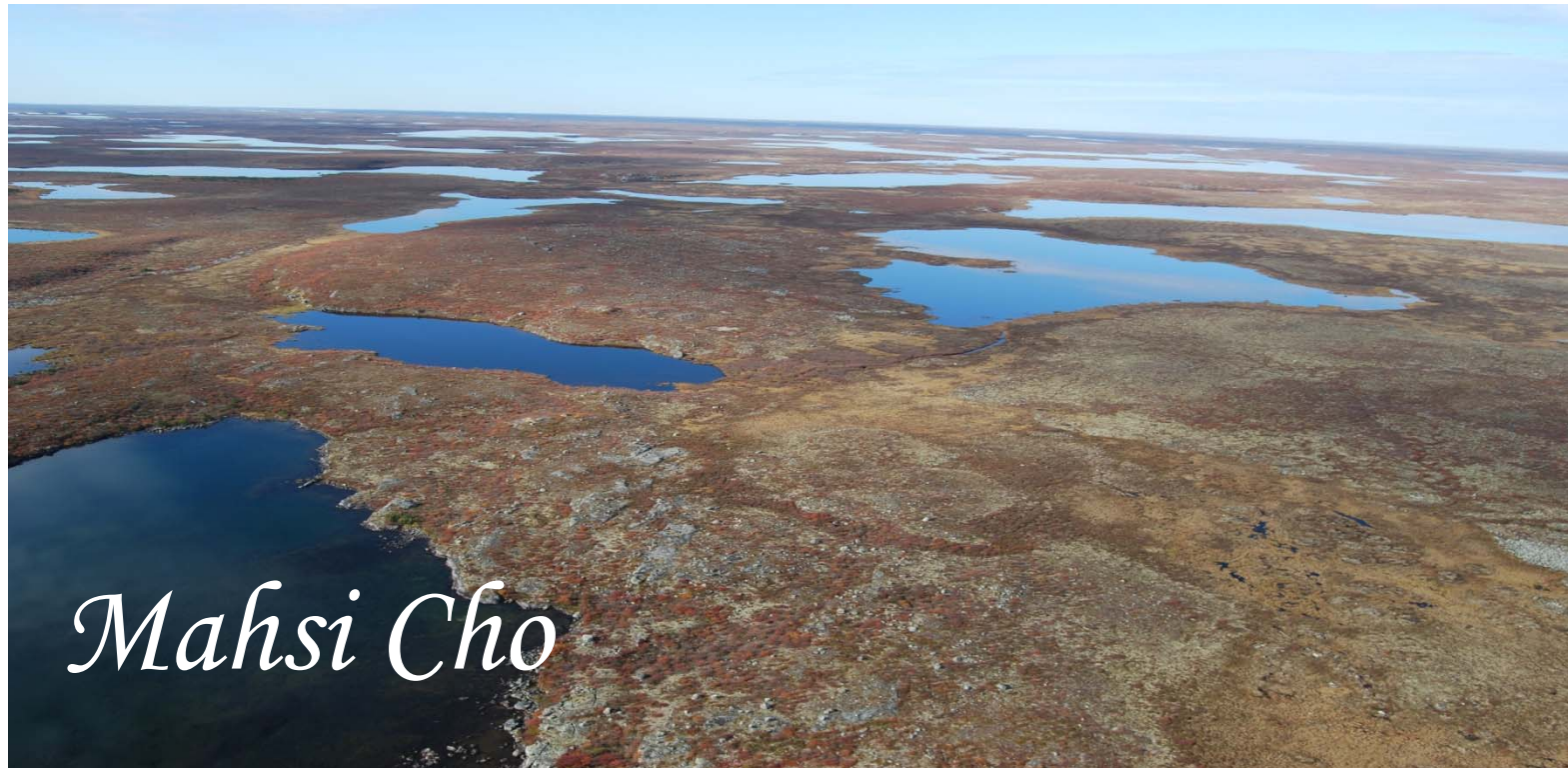
With the application of appropriate mitigation measures, follow-up and monitoring programs, and with the development of a plan to provide adequate compensation for residual habitat losses, impacts to fish and fish habitat can be addressed.



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Questions?



Mahsi Cho