SUBMISSION TO THE

NUNAVUT WILDLIFE MANAGEMENT BOARD

FOR

Information: **Decision: X**

Issue: Pond Inlet Emerging Arctic Char Fishery Application

Background:

Mr. Charlie Inuarak has requested an exploratory licence for Arctic Char from a number of points and coves in the Pond Inlet area. Mr. Inuarak consulted with the Pond Inlet Hunters and Trappers Organization (HTO) and received their support. Mr. Inuarak and his son Niko have also worked closely with Fisheries and Oceans Canada (DFO) to develop their plan. Koluktoo Bay is the only waterbody identified in this plan that has been fished under an exploratory licence in the past.

According to the application and previous correspondence with Mr. Inuarak, Arctic Char are abundant in the Pond Inlet area, especially at the points and coves he has identified (Figure 1; Table 1). Mr. Inuarak proposes to spread out the exploratory fishing effort in an attempt to minimize impacts on local subsistence fishers. Mr. Inuarak feels that all locations he has identified have the potential to develop into a viable commercial fishery.

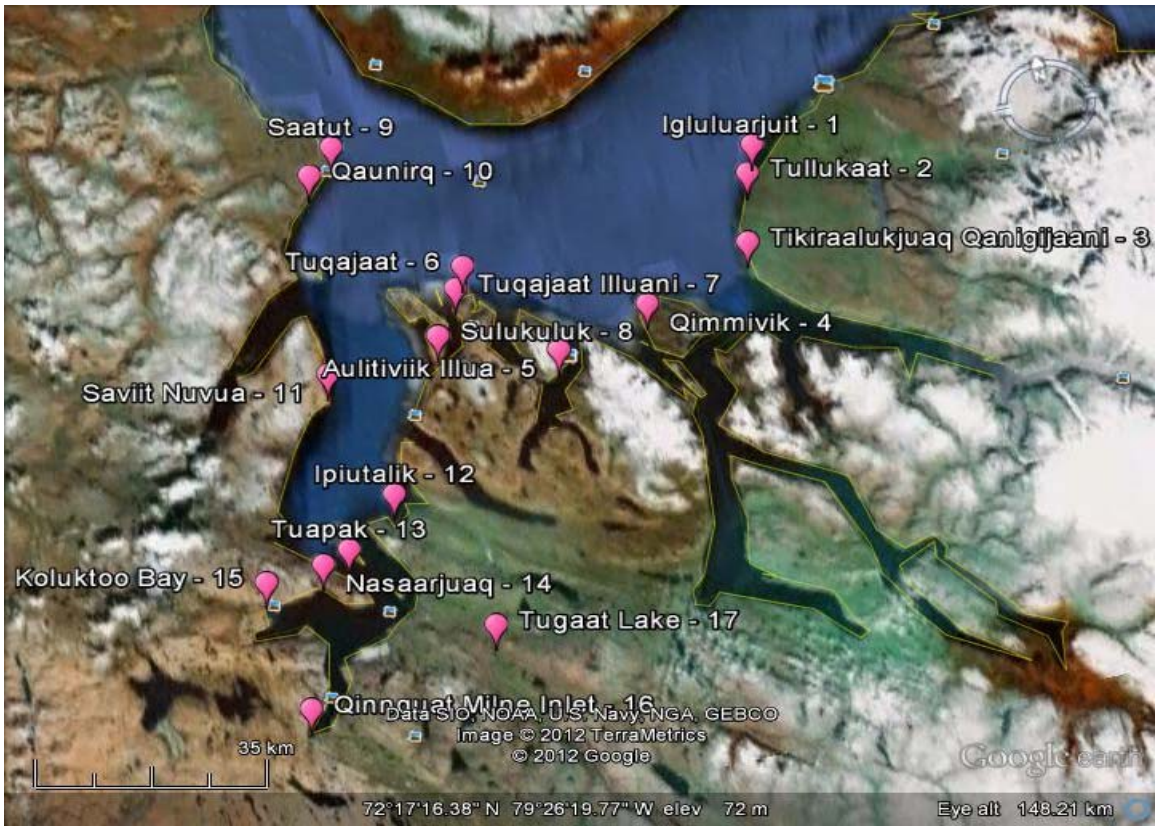

Figure 1. Map of the proposed exploratory fishing sites in Pond Inlet, Nunavut.

Table 1. Waterbody locations and requested exploratory harvest level by Mr. Charlie Inuarak.

Waterbody	Coordinates	Requested Exploratory Harvest Level
Igluluarjuit (Location 1)	72°35’38”N 78°24’26”W	500 fish
Tullukaat (Location 2)	72°33’12”N 78°27’51”W	500 fish
Tikiraalukjuaq Qanigijaani (Location 3)	72°27’02”N 78°33’08”W	500 fish
Qimmivik (Location 4)	72°23’31”N 79°03’30”W	500 fish
Aulitiviik Illua (Location 5)	72°21’06”N 79°29’27”W	500 fish
Tuqajaat (Location 6)	72°30’22”N 79°48’19”W	500 fish
Tuqajaat Illuani (Location 7)	72°28’31”N 79°51’42”W	500 fish
Sulukuluk (Location 8)	72°24’34”N 79°59’32”W	500 fish
Saatut (Location 9)	72°43’29”N 80°13’47”W	500 fish
Qaunirq (Location 10)	72°41’18”N 80°21’56”W	500 fish
Saviit Nuvua (Location 11)	72°23’20”N 80°30’07”W	500 fish
Ipiutalik (Location 12)	72°11’11”N 80°21’31”W	500 fish
Tuapak (Location 13)	72°07’01”N 80°36’43”W	500 fish
Nasaarjuaq (Location 14)	72°06’05”N 80°44’15”W	500 fish
Koluktoo Bay (Location 15) *(Fish Source: Robertson River PI035)*	72°05’27”N 80°59’49”W	500 fish
Qinnguat Milne Inlet (Location 16) *(Schedule V PI022*)	71°53’17”N 80°56’33”W	500 fish
Tugaat Lake (Location 17) *(Schedule V PI006)*	71°57’40”N 80°04’32”W	500 fish

Based on a review of the best available information and past Science advice, DFO recommends that a modified version of the proposed fishing plan is necessary. This is to ensure that the fishery is being sustainably harvested and the fishing pressure will not have a negative impact on Arctic Char stocks and subsistence fisheries in the Pond Inlet Area. Therefore, DFO is presenting our recommendations in form of this briefing note with the attached fishing plan to Nunavut Wildlife Management Board (NWMB) for decision.

DFO's view is that the fishing plan should be discussed and approved in two separate phases. Our recommendation is that Phase I of the fishing plan should start this summer (2013), and that Phase II of the plan could be rolled out as early as next year, after we have more information. Phase II of the fishing plan would be discussed with co-management partners and brought to an NWMB meeting in the future.

Note: The attached fishing plan Phase I was drafted based on information provided by Mr. Inuarak, present and past emerging fishery applications and licences, and information available from past Science advice and technical reports. Written support for this updated plan will be requested from Mr. Inuarak and the Mittimatalik HTO prior to the NWMB's June Meeting and a verbal update can be provided at this time.

Rationale for Phase I of the Fishing Plan:
(*For Fishing Plan - Phase I, see Attachment 1*)

We propose to take a precautionary approach and recommend that exploratory harvest levels are only set for some of the locations proposed by Mr. Inuarak at this time. We are suggesting that exploratory harvest is to be conducted at locations and levels that are considered moderate risk[1] of harm from fishing. For some locations (i.e., locations 13, 14, 15, 16, 17) requested by Mr. Inuarak, we have past scientific advice and have incorporated it into Phase I of the fishing plan. Moreover, based on this advice we are not recommending exploratory harvest to occur at locations that are considered high risk (see details in section "Exploratory Harvest Locations not Recommended by DFO"; Table 2).

The management of Arctic Char fisheries in the Canadian Arctic is based on the assumption that each river system supports a discrete fish stock which has a high fidelity rate to the population stock (Kristofferson et al. 1984). DFO Stock Assessment Science advice is structured to be provided on a stock-by-stock basis, not by fishing location (personal communication - DFO Science, Zoya Martin). For many of the fishing locations proposed, there is limited or no science information available; specifically, locations 1 to 12 (Figure 1; Table 1).

One of the major information gaps is that we do not know the source stocks for some of the fishing locations. The problem this presents is as follows: many of the closely located fishing sites may have one or multiple source stocks. In order to err on the side of caution and avoid overharvesting from any one stock we are suggesting that the exploratory harvest levels for some locations be grouped together in Phase I of this fishing plan. We expect that a future meeting with the Mittimatalik HTO and Pond Inlet elders would help fill in some of the gaps in our current knowledge and help all of us move forward with Phase II of this plan.

[1] Moderate risk: some information is missing which would allow for the assessment of the health of the stock. We think fishing at this level may not adversely affect the stock; however, it is very important to collect data from any harvest that occurs. It is also important to reassess the stock once biological data has been collected and analyzed.

Consequently, at this time, without this information or scientific information there is a potential for moderate to high risk of harm to these stocks, if exploratory harvest is to be commenced at the level and at all locations requested.

Due to lack of information, we want to make sure that we start the exploratory fishing at a scale that is small so that we can assess it first, and subsequently expand the exploratory fishing once we have more information. We also want to make sure that Mr. Inuarak has the proper supplies and refrigeration in place to avoid and minimize fish spoilage, as this is a concern for public health and safety. Therefore, we recommend exploratory fishing occurs only at the selected locations listed in Table 3 for Phase I (see Attachment 1).

Exploratory Harvest Locations and Levels Recommended by DFO

We have recommended initial harvest levels of 1500 kg per location in the attached fishing plan Phase I (Attachment 1; Table 3), which is consistent with previous exploratory harvest levels recommended by DFO for other areas in Nunavut. For Koluktoo Bay, we have issued previous exploratory licences (i.e., 95/96, 96/97, 97/98) and received past Science advice that supported a harvest level of 2500 kg. Past information stated that average fish size in the Koluktoo Bay area was 5.5 kg round weight and therefore, we are recommending an exploratory harvest level of 2500 kg at this location (Koluktoo Bay 72°05'27"N; 80°59'49"W). When fishing the Koluktoo Bay site, fishing should take place near the mouth of the Robertson River (or at the coordinates provided for Koluktoo Bay). This will reduce the risk of harvesting from sensitive fish stocks of the Tugaat River (PI006) and Phillips Creek (PI022) (see below for further justification).

Furthermore, the expectation is that Mr. Inuarak will follow a five-year exploratory protocol of collecting biological and catch-effort information that would allow DFO Science to evaluate sustainable harvest levels. DFO recommends the exploratory fishery begin with the 1st year of the 5-year approach due to the limited information currently available. DFO will work with Mr. Inuarak to provide support for the data collection requirements.

The five-year exploratory fishery protocol is intended to provide information on the viability of a fishery in a particular waterbody. The protocol requires effort be taken to annually harvest the full quota over the five-year period; the collection of biological characteristics of the fish (i.e., individual fork length, round weight, sex and sagittal otoliths for a minimum of 200 Arctic Char); catch-per-unit-effort (CPUE); and total harvest data should be collected every year for five years before stocks are assessed and recommendations are made. Changes to the population structure following continuous harvest of the maximum quota may indicate that the harvest level is not sustainable. However, if the harvest over that period does not change indicators of population health, then the existing level of harvest is likely sustainable. Harvest of the full quota annually is necessary for this approach.

Exploratory Harvest Locations not Recommended by DFO

DFO has assessed and recommends that harvest of both commercial and exploratory from the following fishing locations be considered high risk: Tugaat Lake/River (proposed location 17; Schedule V PI006); Tuapak (proposed location 13); Nasaarjuaq (proposed location 14); and Qinnquat Milne Inlet (proposed location 16; Schedule V PI022) (Table 3). Based on the past Science advice, Tugaat River is advised to remain as a subsistence fishery only, with no commercial quota. This is due to fact that the stock was unable to sustain both commercial and subsistence fisheries in the past. At

Tugaat River, Arctic Char is viewed by the Pond Inlet community as a superior stock compared to other areas, and consequently the subsistence fishing pressure is higher from this system (Read 2004). For Qinnguat Milne Inlet, the coordinates are the same as the Phillips Creek (PI022), which is a Schedule V waterbody. The most recent Science advice indicates that this waterbody was closed (Cosens et al. 1995).

As stated above, the source stocks specifically Tugaat Lake/River (PI006) and Phillips Creek/Qinnguat Milne Inlet (PI022) have been closed to commercial fishing. It is probable that on the summer feeding grounds, Arctic Char from Tugaat Lake/River, Robertson River and Phillips Creek are mixing. It has been documented that Arctic Char tagged in Tugaat Lake were recaptured in Milne Inlet some 20 km away from the mouth of Tugaat River (Read 2004).

Table 2. List of waterbodies (Summer Fishing Locations) that are recommended to remain closed for commercial/exploratory harvest and recommended non-quota limitations.

Waterbody – Summer Fishing Location	**Potential Waterbody Source**	**Coordinates**	**Exploratory Harvest Level**
Tuapak (location 13)	Tugaat River (PI006)	72°07’01”N 80°36’43”W	Not recommended; Remain closed
Nasaarjuaq (location 14)		72°06’05”N 80°44’15”W	Not recommended; Remain closed
Tugaat Lake (location 17) (PI006)		71°57’40”N 80°04’32”W	Not recommended; Remain closed
Qinnguat Milne Inlet (Location 16)	Phillips Creek (PI022)	71°53’17”N 80°56’33”W	Not recommended; Remain closed

Citations

Cosens, S.E., B.G.E. de March, S. Innes, J. Mathias and T.A. Shortt. 1998. Report of the Arctic Fisheries Scientific Advisory Committee for 1993/94, 1994/95 and 1995/96. Can. Manuscr. Rep. Fish. Aquat. Sci. 2473: v + 87 p.

Kristofferson, A.H., D. K. McGowan, and G. W. Carder. 1984. Management of the commercial fishery for anadromous Arctic charr in the Cambridge Bay area, Northwest Territories. Canada, p. 447-461. *In: L. Johnson and B. Burns [eds.] Biology of the Arctic Charr: Proceedings of the International Symposium on Arctic Charr.* University of Manitoba Press, Winnipeg, Manitoba.

Read, C.J. 2004. An assessment of the Arctic char population of Tugaat River, Nunavut. Can. Manuscr. Rep. Fish. Aquat. Sci. 2699: v + 35 p.

DFO Recommendations:

Based on a review of the available information, DFO's view is there would be a moderate risk of harm from fishing if the attached fishing plan – Phase I was approved.

The Pond Inlet fishery should be monitored to assess the effect of the exploratory fishery on the stocks and the following conditions implemented:

- Each fishery should follow the exploratory fisheries five-year approach, with all samples and data being submitted annually to DFO Resource Management as per the Exploratory Licence;
- Minimum gillnet mesh-size of 5 ½ inches employed.

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Zoya Martin, Aquatic Science Biologist – DFO Iqaluit
Charlie, Namen, and Niko Inuarak

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Date: May 7, 2013

Attachment 1: Pond Inlet Emerging Arctic Char Fishery Plan – Phase I.

Attachment 1. Pond Inlet Emerging Arctic Char Fishery Fishing Plan Phase I

Licence Applicant:
Charlie Inuarak, Pond Inlet, NU

Purpose:
To develop a sustainable commercial Arctic Char fishery and promote economic opportunities for Inuit in Pond Inlet.

Methods:
Most fishing activity will take place during the summer months between August and September. Mr. Charlie Inuarak will be the licence holder. The exploratory Arctic Char fisheries five-year approach for collecting biological and catch-effort data will be followed. A minimum gillnet mesh-size of 5.5 inches will be employed. Any harvested Arctic Char that is exported across Nunavut's territorial borders will follow the prescribed direction by the Canadian Food Inspection Agency as directed by the "Fish Inspection Act" and "Fish Inspection Regulations."

Location and harvest level:
Table 3. Recommended fishing locations and exploratory harvest levels in Pond Inlet, Nunavut.

Fishing Location	Coordinates	Exploratory Harvest Level
Igluluarjuit (1) and/or Tullukaat (2) and/or Tikiraalukjuaq Qanigijaani (3)	1) 72°35'38"N 78°24'26"W 2) 72°33'12"N 78°27'51"W 3) 72°27'02"N 78°33'08"W	1500 kg total
Qimmivik (4)	72°23'31"N 79°03'30"W	1500 kg
Aulitiviik Illua (5)	72°21'06"N 79°29'27"W	1500 kg
Tuqajaat (6) and/or Tuqajaat Illuani (7) and/or Sulukuluk (8)	6) 72°30'22"N 79°48'19"W 7) 72°28'31"N 79°51'42"W 8) 72°24'34"N 79°59'32"W	1500 kg total
Saatut (9) and/or Qaunirq (10)	9) 72°43'29"N 80°13'47"W 10) 72°41'18"N 80°21'56"W	1500 kg total
Saviit Nuvua (11)	72°23'20"N 80°30'07"W	1500 kg total
Ipiutalik (12)	72°11'11"N 80°21'31"W	1500 kg
Koluktoo Bay - PI035 (15)	72°05'27"N 80°59'49"W	2500 kg