Bernard Harbour, Nunavut
The Arctic Char Fishery at Bernard Harbour

**Bernard Harbour Restoration Project**

- Historical evidence of a thriving Arctic Char fishery (e.g. Canadian Arctic Expedition of 1913-18 describes large char runs in the summer) and significant Inuit use of Bernard Harbour
- However, community members have observed recent declines due to low water and ‘blockages’ in the creek

Reference: ‘Copper Inuits spearing salmon at Nulahugyuk Creek, Northwest Territories (Nunavut), Canadian Museum of History, 37080’
Bernard Harbour Restoration Project

- The Kugluktuk HTO originally proposed stream restoration initiatives at Bernard Harbour beginning in the early 2000s
- The HTO has since worked closely with Golder Associates and other partners (e.g. Environment Canada, GN Department of Environment, MMG) to advance this work
- Agreement to complete stream restoration work signed with Sabina in June 2014
  - Supports fisheries compensation activities for the Back River Project

Photos: Golder Associates
Bernard Harbour Restoration Project

• The Bernard Harbour restoration project includes:
  – A Traditional Knowledge (TK) study involving residents from Kugluktuk and Cambridge Bay
  – Baseline fieldwork and development of a fisheries offsetting plan
  – Stream restoration work
  – Monitoring and long-term management of restoration activities
• The Bernard Harbour restoration project is to remain a Kugluktuk HTO-led initiative; control and ownership of the project will ultimately reside with the Kugluktuk HTO

Photo: Golder Associates
Bernard Harbour TK Study

- Conducted in partnership between Sabina and the Kugluktuk HTO
- The Kugluktuk HTO remains the owner of all TK information collected
- TK collected for study will be made publically available, unless otherwise noted by study participants
- 11 individuals interviewed over 1.5 weeks in June 2014 in Kugluktuk and Cambridge Bay
- Results were reviewed and verified by the interviewees and Kugluktuk HTO
Bernard Harbour TK Study

Bessie Kukilukak  
David Enogaloak  
Frank Ipakohak  
Sam Angohiatok  

Roger Hitkolok  
David Epilon  
John Himiak & Agnes Allen  
John Ivarluk  

Simon Hogaluk

Sabina GOLD & SILVER CORP.
Traditional and Current Uses of Bernard Harbour

- Traditional use
  - An important gathering area for a number of Inuit families. Interviewees had fond memories of living in the area in the 1940s-1960s.
  - Most families lived at Bernard Harbour seasonally, in tents and cabins. Some people stayed year-round. Travel was generally by foot, dog team, and boat.
  - Fishing and hunting were very good at Bernard Harbour. Arctic Char, Lake Trout, caribou, seals, and birds were plentiful. Many families could be sustained.

- Current use
  - Bernard Harbour continues to be visited by Inuit, although not as frequently and long in duration as before. The focus of these visits remains on camping, fishing, and hunting.
Bernard Harbour TK Study – Summary of Results

Arctic Char

• Harvesting
  – Harvesting activities occurred primarily at a fish weir at the mouth of Nulahugyuk Creek when fish were migrating, using kakivaks. Jigging (in the winter) and use of fish nets also occurred (and continues to occur) in the ocean, at Hingittok Lake, and other local lakes.
  – Numerous fish (dozens to hundreds) would be caught at the fish weir and consumed or dried for later consumption.

• Migration
  – Main downstream migration (to the ocean) commenced in the spring after ice-out. Fish moving downstream were sometimes noted to be skinnier and smaller.
  – Main upstream migration (to the lake) occurred in the late summer/early fall. Fish migrated to Hingittok Lake to spawn.
  – Some interviewees suggested the fish were migrating at different times and directions (e.g. moving upstream at the time other interviewees said they were moving downstream, and vice-versa).
  – Fish generally had little difficulty migrating to / from Hingittok Lake in the past.
Bernard Harbour TK Study – Summary of Results

Arctic Char

• Spawning
  – Occurred in the fall, in Hingittok Lake.
  – Char turned red (‘red-bellied char’) when they were spawning.
  – Spawning beds (‘iglik’) were round structures, white or red in colour, where the fish stayed nearby. Some spawning locations were mapped.

• Health
  – Fish were generally in good health and were excellent to eat. Stranded fish were rarely seen.

• Changes that have been observed
  – Fish no longer move up Nulahugyuk Creek in the same numbers due to low water levels and obstructions. Some fish struggle to migrate, others simply return back to the ocean.
  – Some people have noticed more unhealthy fish in the region.
Traditional Knowledge Study on the Arctic Char Fishery in the Nulahugyuk Creek - Hingittok Lake Area (Bernard Harbour), Nunavut

Information obtained from June 2014 interviews with Bernard Harbour land users

LEGEND

Features mapped during interviews
- Fish nets
- Fishing (other)
- Fish weir (historic use)
- Other fish-related information
- Spawning area

Geographic features
- Shallow water
- Bog
- Rivers
- Lakes and ocean

FIGURE: NU_ENV_NA_IL_NulahugyukRiver_FishTheme
DATE: March 24 2015
PROJECTION: NAD 1983 UTM Zone 11N

Occasional Lake Trout caught here. Old kakivak parts also found here.

Spring
- Spring and fall
- Jigging - Spring

Summer
- Winter and spring

Fall
- Spring and summer

Jigging - Winter

Spring
- Fish nets

Bears may feed on fish in this pool.

Fish nets

August fishing

Likely resting place for Arctic Char

Arctic Char fishing and occasional Lake Trout. Used to walk along the creek up to the lake.

Likely resting place for Arctic Char

Fishing occurred on some other small lakes and streams in the Bernard Harbour area.

Bears may feed on fish in this pool.

Bears may feed on fish in this pool.

Hingittok Lake

Arctic Char - Fall
Traditional Knowledge Study on the Arctic Char Fishery in the Nulahuguyuk Creek - Hingittok Lake Area (Bernard Harbour), Nunavut

Information obtained from June 2014 interviews with Bernard Harbour land users.

LEGEND

Features mapped during interviews
- Walking route
- Fishing (other)

Fish nets
- Fishing (other)
- Other fish-related information
- Spawning area

Geographic features
- Shallow water
- Rivers
- Lakes

FIGURE: NU_ENV_NA_It_HingittokLake
DATE: March 24 2015
PROJECTION: NAD 1983 UTM Zone 11N
Nulahugyuk Creek
• Creek flows traditionally varied throughout the year, with deeper flows occurring around the time of ice breakup and lower flows occurring around the time of freeze-up.
• Nulahugyuk Creek used to be much deeper with few, if any, obstructions to fish migration. Nulahugyuk Creek is now very shallow, with many obstructions to fish migration.
• Some other creeks and rivers in the region have also experienced similar changes. Reduced snowfall in the winter, less rain, and climate change were suggested as potential causes.

Hingittok Lake
• Some other lakes and ponds in the region have become shallower or dried up. Reduced snowfall in the winter, less rain, and climate change were suggested as potential causes.
Bernard Harbour TK Study – Summary of Results

Other

• A number of stories and legends were described including those pertaining to Inuit land use, Hudson Bay Company activities, the nearby DEW line site, and the presence of ‘little people’, a giant, and human spirits.

• A number of grave sites are present in the Bernard Harbour area, some of which were mapped. It was noted these should not be disturbed and artifacts should not be removed.

Opinions of the proposed stream restoration work

• TK study participants were generally very supportive of the proposed stream restoration work and wished to see the Nulahuggyuk Creek Arctic Char fishery returned to its previous status.
Golder in partnership with the Kugluktuk HTO initiated a study in 2012 to address the following objectives:

1. **Increase community capacity, engage youth in community stewardship**
2. **Assess the baseline state of the Arctic char run using a 2-way trap at mouth of creek**
3. **Assess the use ‘low-flow channels’ for improving upstream migration**

2012 Pilot Study – Can we improve upstream passage?

1. Identify low-flow channel path
2. Remove boulders & direct flows
3. Align boulders to direct fish

Results (from Golder 2013):
- Depths increased by 44-102%
- Cost-effective ‘soft engineering’ method
- Problem locations (i.e., pinchpoints)
  - Five problem areas selected
  - All relatively short (30-60 m)
  - ‘Fixed’ with 2 to 10 people, working 1.5 to 3 hrs per location
Sabina Gold & Silver in partnership with the Kugluktuk HTO continued a baseline study in 2014 for the development of a Final Offsetting Plan

Goal:

- Continue community engagement initiatives and build on data collected in 2012 to provide:
  - a better understanding of current state of the run
  - a benchmark for evaluating ‘gains’ post-remediation of the entire creek
  - habitat data for developing a detailed plan of habitat remediation
2014 Baseline – Results

Juvenile-Downstream

Adult-Upstream

Adult-Downstream

2014 Daily Catch

- D/S Juvenile
- U/S Adult
- D/S Adult

June 24, 2015
2014 Baseline - Results

- Small (10-day) window of opportunity for upstream migration
  - Early summer only

- Migration of adults entering the creek after July 6 not successful

- Low success rate related to
  - Lower flows
  - Larger adults

- Unsuccessful migrants either die trying or try again next year
2012 pilot channels intact two year post-construction

At least 11 ‘pinchpoints’ remaining for offsetting
Will the offsetting option achieve “equivalency” for Back River? Offsetting Plan must show that:

- “gains” at Bernard Harbour exceed “losses” at Back River

Predicted to improve fishery (i.e., gains) through:
- Improved access to spawning lake
- Increase size of adult char run in Nulahugyuk Creek
- Increase population size (though recruitment)

*Note that assessment of losses is on-going*
Summary

- Recent baseline studies are consistent with Traditional Knowledge

- Offsetting option demonstrates that by improving access using simple engineering methods results in large gains in fisheries productivity

- Under DFO’s policy, offsetting could start at Bernard Harbour (prior to an Authorization application) with gains banked for future credit

- Past successes (Golder/Sabina/HTO) demonstrate that community-based offsetting at Bernard Harbour will work within DFO’s Policy

- The future looks promising for new partnerships between community and industry, and the novel solutions they provide
Bernard Harbour Restoration Project – Next Steps

- Distribution of TK study report
- Development of a fisheries offsetting plan (Sabina). Plan to be approved by the Department of Fisheries and Oceans Canada (DFO)
- Complete stream restoration work with the Kugluktuk HTO.
- Monitoring and long-term management of restoration activities. Project will continue to be managed by the Kugluktuk HTO.
Contact Information

**Kugluktuk HTO**
David Nivingalok (Chairperson) & Barb Adjun (Manager)
P.O. Box 309
Kugluktuk, Nunavut X0B 0E0
Phone: (867) 982-4908
kugluktukhto@qiniq.com

**Sabina Gold & Silver Corp.**
John Kaiyogana
Community Liaison Officer
10 Omilik Road
Cambridge Bay, Nunavut X0B 0C0
Phone: (867) 983-3033
Cell: (867) 446-2501
Fax: (867) 983-3133
jkaiyogana@sabinagoldsilver.com

Jason Prno
Community Relations Advisor
(519) 983-8483
jprno@sabinagoldsilver.com