



NIRB Application for Screening #125626

Char Habitat Restoration near Kugluktuk, Nunavut

Application Type: New

Project Type: Site Cleanup/Remediation

Application Date: 7/16/2021 12:00:24 AM

Period of operation: from 0001-01-01 to 0001-01-01

Proposed Authorization: from 0001-01-01 to 0001-01-01

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DETAILS

Non-technical project proposal description

English: Community members from the Hamlet of Kugluktuk have observed low water levels and cases where Arctic Char become stranded as they travel upstream during their fall migration. We propose to restore stream channels at two locations selected by the community to facilitate the fall migration of Arctic Char and reduce the number of stranded fish. The two proposed locations are Nakyoctok River (Richardson Islands) and Kimikyoak River (Read Island). The objective of the restoration is to create channels that are deep enough to allow adult fish to pass easily upstream. We propose to use the natural environment, instead of artificial structures, and we will use hand tools and manual labour instead of heavy machinery. Small material like sand, gravel, and small rocks will be removed using shovels. Boulders will be removed using pry bars. Larger boulders will be winched towards the bank using an ATV (on-shore). If a boulder is too large to be removed by pry bar or winch, we will drill holes in the boulders and pour a non-toxic material (Dexpan) into the holes. The material expands when it dries, and will crack the boulder into smaller pieces so the pieces can be safely removed. In areas where widening or braiding of the river channel occurs, weirs will be constructed from small boulders and on-site materials. These weirs will be similar to those historically constructed by Inuit for fishing and used recently at Read Island by local community members. The weirs will direct fish passage away from the braided or shallower channels and toward the deeper, restored channels. Similar restoration methods have been successfully used in the region, both by independent community members (past efforts at Kimikyoak River) and by Golder Associates Inc. at Nulahugyuk Creek, near Bernard Harbour. The work will be done by ten people for up to ten days at each site. If restoration takes a long time at the first site, we will spend another ten days at that site instead of moving to the second site. The work will be done between late July and mid-September 2021. The proposed stream restoration is part of a larger research and restoration project, funded by Fisheries and Oceans Canada Coastal Restoration Fund, and a collaboration between the Kugluktuk Hunters and Trappers Organization, Fisheries and Oceans Canada, and the University of Waterloo. Water samples and fish samples may be collected opportunistically, to support the larger research project efforts.

French: NA

Inuktitut: NA

Inuinnaqtun: Nunaqatigiit Qurluqturmiut Hamletkuni ilihimaliramik imaup itinia aallangurmat Iqaluit mauyuuviginni, mayurungnaiqpakhutik ilangit ayuqhaqhutik imaq imaiqtitpallarpangmat ukiakhami mayuuliraangata. Ukturumayugut ihuaqharahuarlugu kuukat malruk naunaiqhimayuk Qurluqturmiutanit, ikayurahuarlugit Iqalukpiit mayuuyut ikiglinahuarlugit mayungittut ayuqharamik. Taapkuat kuukak Nagyutuktuut Kugaani (Richardson Island), talvanilu Kimiqyuaq Kuunga (Read Island).Ukturumayaqqut ihuaqhainniq itihinahuarlugit mayurvikhaita apqutikhaannik iqalukpiit mayuutaaqtut angiglihimayut mayurvikhaannik ayurnaittumik. Nuna tahamani aturlugu, hanayauhimagittuni, nunainnarmat aturluta algaptingnullu havagluta, algautinik atuqhimaattumik. Hiurarmik, uyaraliarmik, uyaqqaniglu mikkanik aturluta havagumayaqqut pualriharlugulu. Uyaqqat anitqiyait qaatirlugit qaatirutinut nuutiqpangniaqtavut. Anitqiyat uyaqqat nuhukhimaarlugit kuukap kiglinganungaqtirahuarlugit hondanut (hinaani). Uyarahugyuit angivallaarumik putuurlugit ikuutarmut imiqturlugit hivuuranaittumik (Dexpanmik) qupijjutikhaq uyaqqanik. Dexpan paniraangat angiliyuumiqhuni qupitiqpaktuq uyaqqanik. Ahiruqhuni aahiit qupigaangata, piiyaruminaqhivaktut uyarahuyuit qayangnaittumik.Kuukap ilangata hilikningani, ahiaguurutauningani mayuuyunik, hapuuliuniaqhimayut uyaqqanut mikitqaiyarnut, ingilraatut hapuliuqtauvaktunik. Hupuliurutauvangniaqtut uyaqqat, kuukap ilanganit, hanianillu Inuit pitquhirivaktainnik aturlutik, taimaa Qikiqtannayungmiut pitquhiraluangannut. Taapkuat hapuuliuqhimayut ikayuutainiaqtut iqalungnik apqtutiqaquplugit mayuutillugit hanguhimaattumik ahinut mayuriamingni, itiniq atuquplugu mayuriamingni.Taima havaaqahimayut taimaa Qitirmiuni, nunaqatigiiktut havaqatigiikhutik, tapuallu Golder Associates Inc. ikayuqhutik Qimikyuaq Kuungani, talvanilu Nulahugyuup kuugaani, Nulahugyup haniani.Tahamna havaakhaq qulinik inungnik havaqatigiiktukhanik pijjutauniaqtuq, qullinut upluni hivullirmi kuugangmi. Havaakhaq iniqtaungitkumi taapkunai qulini upluni, talvaniinginnarlutik uplunik qulinik aniguutifaarlutik iniqtitariamingni, nuutinnatik tuglianut kuugarmut. Havaakhat havaariyauniaqtut July min, September qitinganut 2021.Taapkuak kuukap ihuaqhainia ilaayut angitqiyarmut naunaiyaiyaunmik ikayuqtuiniirmik, kiinauyutigut ikayuqtauplutik

Iqaluit, Taryuplu Hinaani Ihuaqhainiup Kiinaiyaitigut. (Fisheries and Oceans Canada Coastal Restoration Fund), Fisheries and Oceans Canada, taapkuallu University Waterloomi. Imaup nalaumaninga nalunaiyautit, Iqaluit naunaiyautillu katitiqtautaaqtut atautiikut naunaiyautikhanut aallanut.

Personnel

Personnel on site: 10

Days on site: 28

Total Person days: 280

Operations Phase: from 2021-07-26 to 2022-09-24

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Kimikyoak River, Read Island	Site Cleanup/Remediation	Inuit Owned Surface Lands	This location is currently and historically used for fishing Arctic Char. Community members have done restoration work, similar to what we are proposing, in this river in the past.	Unknown. Project activities will avoid cultural sites if observed.	160 km north of Kugluktuk
Nakyoktok River, Richardson Islands	Site Cleanup/Remediation	Inuit Owned Surface Lands	This location is currently and historically used for fishing Arctic Char. An airstrip is located nearby, and a community member maintains a bear fence around a camp.	Unknown. Project activities will avoid cultural sites if observed.	190 km northeast of Kugluktuk

Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Information is not available			

Authorizations

Indicate the areas in which the project is located:

Kitikmeot

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Fisheries and Oceans Canada	Licence to Fish for Scientific Purposes, and Animal Care Permit	Applied, Decision Pending		
Kitikmeot Inuit Association	Certificate of Exemption to access Inuit Owned Lands	Applied, Decision Pending		
Nunavut Water Board	Approval to Use Water/Deposit Water Without a Licence	Not Yet Applied		
Nunavut Research Institute	NRI was contacted for a scientific research permit. NRI stated that a permit is not required, since the primary research is on fish.	Active		

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	Charter plane to transport equipment	
Water	Transport of personnel and equipment by boat	
Land	Limited transport on-site by ATV	

Project accommodation types

Temporary Camp

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
ATV	2	Utility, 2-up	ATV will be used to winch boulders out of stream channel and transport equipment around site
Boat	4	18-24 foot	Boats will be used to transport personnel and equipment to restoration sites
Generator	1	1500 W	Power emergency communication equipment

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Non-explosive boulder breaker (Dexpan)	hazardous	5	11	55	Lbs	Cracking boulders to facilitate removal. Product is nonhazardous.
Gasoline	fuel	30	5	150	Gallons	Fuel for boats, ATVs, and generator

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
1	Water jugs	Kimikyoak River and Nakyoktok River (streams where restoration activities are taking place)

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Camp	Greywater	3 gallons/day	Filtered and buried	Food particles will be filtered out. Grey water will be poured into shallow pit, dug > 50 m away from water.
Camp	Sewage (human waste)	40 gallons	Hamlet waste facilities	Human waste will be contained, transported back to Kugluktuk, and disposed in Hamlet facilities

Environmental Impacts:

Transportation of equipment by ATV will only occur on hard-packed substrate so minimal damage to wetlands and vegetation will occur. Travel overland will avoid cultural and archaeological sites. All fueling will be done away from water sources. All project activities will be conducted with minimal impacts to large mammals (terrestrial and marine). Wildlife will not be approached and participants will leave the area if wildlife show signs of being disturbed by human presence and/or project activities. Boulders and substrate removed from the stream channels will be deposited on hard-packed substrate and where substrate is unlikely to be transported by spring run-off. Dexpan (a non-toxic expanding powder that will be used to crack boulders) forms a hardened compound when set. This compound is nontoxic and will be disposed of with boulders and substrate. Unused Dexpan (either in original powder form or in mixed solution) will be transported to Kugluktuk for disposal at Hamlet facilities.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

No equipment, infrastructure, or supplies will be cleaned up. The site restoration refers to natural materials (e.g., boulders, stones) only. Natural materials will be relocated, to create deeper channels and directional weirs to assist migrating Arctic Char.

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

No roads or trails exist at either location. Cabins and camps are located at both locations and are used for hunting and fishing by community members.

Description of Existing Environment: Biological Environment

Arctic Char migrate through streams at both locations. Community members have observed low water levels and stranding of migrating Arctic Char. The objective of the project is to make deeper channels, to improve the streams for migrating Arctic Char.

Description of Existing Environment: Socio-economic Environment

Community members from Kugluktuk use these areas for recreation, as well as subsistence hunting and fishing.

Miscellaneous Project Information

Identification of Impacts and Proposed Mitigation Measures

Transportation of equipment by ATV will only occur on hard-packed substrate so minimal damage to wetlands and vegetation will occur. Travel overland will avoid cultural and archaeological sites. All fueling will be done away from water sources. All project activities will be conducted with minimal impacts to large mammals (terrestrial and marine). Wildlife will not be approached and participants will leave the area if wildlife show signs of being disturbed by human presence and/or project activities. Boulders and substrate removed from the stream channels will be deposited on hard-packed substrate and where substrate is unlikely to be transported by spring run-off. Dexpan (a non-toxic expanding powder that will be used to crack boulders) forms a hardened compound when set. This compound is nontoxic and will be disposed of with boulders and substrate. Unused Dexpan (either in original powder form or in mixed solution) will be transported to Kugluktuk for disposal at Hamlet facilities.

Cumulative Effects

No future projects are expected in this area. The project is of short duration and is not expected to have lasting cumulative effects.

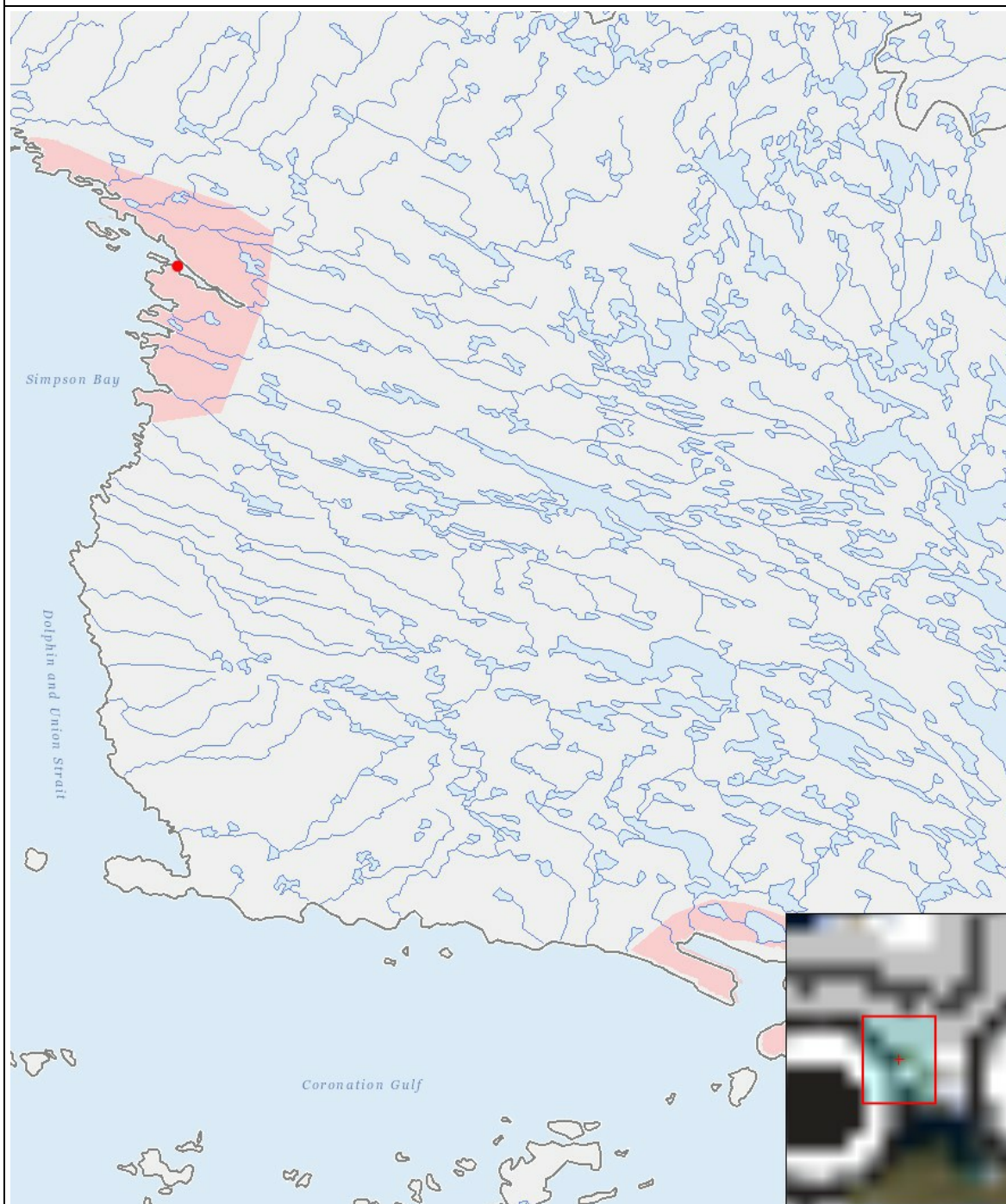
Impacts

Identification of Environmental Impacts

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO - ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction																									
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Operation																									
Site Cleanup/Remediation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	N	-	P	-	-	-	P	-	-	-	-
Decommissioning																									
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

- | | | |
|---|-------|-------------------------------------|
| 1 | point | Kimikyoak River, Read Island |
| 2 | point | Nakyoktok River, Richardson Islands |