

Ulukhaktok Iqalukpik (Arctic char - *Salvelinus alpinus*)

Community Fisheries Management Plan

Updated 2025

This 2025 edition of the UluKhaktok Iqalukpik Community Fisheries Management Plan was updated through guidance and leadership from the UluKhaktok Char Working Group, with significant contributions from Ellen Lea, Colin Gallagher, Red Clarke, Burton Ayles, Stacey Challinor, and Kiyo Campbell.

A condensed version of this Community Fisheries Management Plan has been made into a “back-pocket” pamphlet. The information in the “back-pocket” pamphlet is consistent with that in this Plan and meant to compliment it as an easily referenceable resource for harvesters while out on the land.

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1.0 - Introduction

This Community Fisheries Management Plan (CFMP) identifies the main objectives and measures for the conservation and management of Arctic Char (*Iqalukpik* - *Salvelinus alpinus*) fisheries, in the Ulukhaktok area of the Inuvialuit Settlement Region (ISR). The CFMP summarizes Arctic Char biology, describes the Arctic Char fisheries in the Ulukhaktok area, provides the latest information on the status of the Arctic Char stocks, describes community management measures, and outlines management issues.



Figure 1: Map of important Arctic Char fishing locations in the areas around Ulukhaktok, NT.

Arctic Char have been harvested in the Ulukhaktok area since 500-1000 A.D. (Condon, 1996) and remain essential to the residents of Ulukhaktok, providing subsistence, cultural, and nutritional benefits. Currently, the most important Arctic Char fisheries in the Ulukhaktok area are the mixed population summer coastal fishery and the winter fishery at Tatik Lake (also known as Fish Lake) (Table 1).

The Arctic Char population from the Kuujua River system is the most important Arctic Char stock in the area, which is harvested in both the summer coastal fishery and the winter fishery at Tatik Lake (Figure 1). Other important populations that contribute to the summer coastal fisheries and are also harvested directly, occur in the Kagloryuak, Kagluk, Kuuk, and Naloagyok river systems in Prince Albert Sound (Figure 1).

Anadromous and landlocked Arctic Char populations from smaller rivers and lakes are occasionally harvested at low levels, often on a rotating basis (HCWG, 2004).

The need for an Arctic Char fishing plan was first identified in 1987 when community members expressed concern about a decline in the size and abundance of Arctic Char harvested in the Kuujua River and Tatik Lake fishery. Biological assessments and tagging of the major Arctic Char populations (Appendix II), as well as a community-based fishery monitoring program, were undertaken to gather information on the harvest and biological characteristics of Arctic Char.

In 1996, the Holman Char Working Group (HCWG), now known as the Ulukhaktok Char Working Group (UCWG), was established to develop the CFMP and guide the management and monitoring of Ulukhaktok Arctic Char Fisheries. The UCWG continues to the present day with representatives from the Olokhaktomiut Hunters and Trappers Committee (OHTC), Fisheries and Oceans Canada (DFO), and the Fisheries Joint Management Committee (FJMC). The community of Ulukhaktok has significant involvement in the management of the Arctic Char fisheries, as part of the adaptive fishery co-management process in the ISR (Ayles *et al.* 2007). The UCWG meets annually, and includes a public meeting to gather input and receive feedback from Ulukhaktok community members.

The first CFMP was established in 1997 and has been revised in 2001, 2004, 2016, and this current edition in 2025 (HCWG 1997, 2001, 2004). The CFMP is a living document and can be amended at any time, upon request and agreement from the signatories. Information on the harvests and stocks are reviewed each year through an adaptive co-management process and changes to safe harvest levels and other measures may be made.

Goals of the Community Fishery Management Plan

1. **Conservation:** to preserve and protect Arctic Char populations and habitats in Ulukhaktok area lakes, rivers and seas.
2. **Sustainable use:** to manage and conserve Ulukhaktok area Arctic Char populations to ensure the subsistence needs of Ulukhaktok residents are met for today and the future.
3. **Stewardship:** to encourage co-operation among all users to ensure sound management and sustainable use of all Ulukhaktok Arctic Char populations.

2.0 - Background Information

2.1 - General Biology of Arctic Char

Arctic Char (*Iqalukpik* - *Salvelinus alpinus*) is closely related to Dolly Varden (*Salvelinus malma*) and they are both part of the salmon and trout family (*Salmonidae*). Arctic Char has a circumpolar distribution throughout much of the Arctic and is

considered an ecologically significant species in the marine waters of the Western Arctic (Cobb et al. 2020). In general, Arctic Char occurs in a number of river systems and coastal waters within the ISR, east of the Mackenzie Delta.

Both anadromous (sea-run) and landlocked populations of Arctic Char occur in the Ulukhaktok area (OHTC et al. 2016). Anadromous Arctic Char generally reside in freshwaters for the first five-or-so years of life, then migrate in late spring to coastal waters to feed, returning to freshwater in the fall to overwinter. This migration cycle is repeated from year-to-year and most anadromous Arctic Char return to their home streams to overwinter. Landlocked Arctic Char remain in freshwater systems throughout their life cycle. In general, Arctic Char spawn in August or early September in freshwater over gravel or rocky shoals in lakes, or in quiet pools in rivers (Scott and Crossman 1973). Current-year spawning fish generally remain in freshwater during the spring and summer preceding spawning. Only 5-10% of some populations spawn each year. Females usually spawn every second or third year (Johnson 1980), but this has not been assessed for anadromous Arctic Char in the Ulukhaktok area. In general, information about spawning locations for Arctic Char in the Ulukhaktok area is limited.

Tatik Lake, the site of the main winter fishery (October-November), is the primary overwintering site for Arctic Char in the Kuujjua River system, although they likely migrate further upstream as well (Harwood et al. 2013). It is thought that Arctic Char may spawn in Red Belly Lake, part of the Kuujjua River system. When the ice in the rivers and oceans break-up in late June, fish migrate downstream from Tatik Lake and other rivers to feed in highly productive coastal marine habitats in Minto Inlet, east Amundsen Gulf, and Safety Channel, with the return migration usually beginning in early August and peaking in the third week of August (DFO 2016a; Hollins et al. 2022).

Arctic Char from the Kuujjua, Kuuk, Kagluk, Kagloryuak and Naloagyok river systems have been tagged, and a few have been recaptured in the summer and winter fisheries (DFO 2016a; Lemieux 1990; Lemieux and Sparling 1989; Sparling and Stewart 1988; Stewart and Sparling 1987). Movement of Arctic Char among Prince Albert Sound rivers and between the Kuujjua River and Prince Albert Sound rivers appears to be very limited (Lemieux 1990; Hollins et al. 2022). Of about 1,800 fish tagged in the Prince Albert Sound rivers only one, from the Kagloryuak River, was recaptured in the Kuujjua River, and only one tagged in the Kuujjua River was recaptured in a Prince Albert Sound river, the Kagloryuak River (DFO 2016a; DFO unpublished data).

Arctic Char have a varied diet in marine waters, feeding on amphipods, fish and other species. Anadromous Arctic Char returning to the Kuuk and Kagluk rivers in 1987 had fed on marine amphipods and on some marine fish (cod, sculpin, and sand lance), fish eggs, and mysids (Stewart and Sparling 1987; Lemieux 1990). Small Arctic Char caught in the Kuuk River fed on chironomids and freshwater amphipods (Stewart and Sparling 1987). Observations by Ulukhaktok fishers and analyses have shown that the diet of Arctic Char caught in the summer fishery has shifted from mostly Arctic cod to other species such as Sand lance and other invertebrates (Harwood et al. 2015, J. Alikamik, J. Oliktoak pers. comm. 2016). In freshwaters, other species of fish, birds, and mammals eat

Arctic Char of various sizes. At sea, Arctic Char can be prey for Beluga and Ringed Seal, although evidence is limited.

Arctic Char are slow growing and slow maturing. Maximum size is reached after about 20 years. Arctic Char are usually recruited to fisheries at age 8–10 years, but fish as young as 4 years and as old as 25 years have been caught. The condition of Arctic Char is affected by the length of time spent feeding at sea; for instance, fish condition was lower in 2005 when break-up was late, and higher in 1998 and 1999 – El Niño years (Harwood et al. 2013).

Little information is available on contaminants, diseases and parasites in Ulukhaktok Arctic Char. Low levels of infections with ectoparasites, cestodes and roundworms were found in Arctic Char from the Kuujjua, Kuuk and Kagluk rivers (Sparling and Stewart 1988, Stewart and Sparling 1987).

2.2 - Biological Data from Harvests

Sound management of fish populations requires an understanding of the size and structure of a population, as well as trends over time. Allowable harvest levels are ideally based on these types of information and their responses to different harvest levels. Frequently, such data are not available and various indicators of population health are used instead, such as length, weight, age, size and age distributions, growth, sex ratios, maturity, and catch-effort metrics. The management of Arctic Char in the Ulukhaktok area relies on indicators of population health, as well as Inuvialuit Knowledge and local observations to help establish and change the Voluntary Harvest Level.

Information on length, weight, age, sex, maturity and catch-effort was collected from the winter Tatik Lake fishery in 1978, 1987, 1991, 1992 and 1994-present. The annual community-based collection of these data from the winter Tatik Lake fishery began in 1991 (Harwood et al. 2013; Gallagher et al. 2021). Based on the results from the previous peer-reviewed stock assessment of Arctic char in Tatik Lake, the fish had a wide range of sizes and ages where the average length and weight increased between 2008 and 2013, and have been relatively stable since then at levels similar to those observed in the early 2000s (DFO 2016b). Median age increased between 2010 and 2012 and has been stable since then. CPUE has been variable without trend with an increase in the frequency of relatively high values since 2006 (DFO 2016b). Arctic Char in Mayoklihok Lake were similar in length, weight, and age to those in Tatik Lake, but larger and older fish were present (DFO unpublished data).

Standardised collection of length, weight, age and catch-per-unit-effort (CPUE) data from the summer coastal subsistence fishery occurred from 1993–1997 and 2011-present, with similar data collected for the Stage I and II commercial fishery in 2010 and 2012–2016 (Lea et al. 2023a). The summer coastal subsistence and commercial fisheries harvest Arctic Char of a wide range in length, weight, and age. Data published up to 2015 revealed a significant increase in length and weight of fish in the summer coastal fishery between 1993–1997 and 2011–2015 and a higher prevalence of older fish in 2011–2015.

CPUE has also varied without trend. Arctic Char caught in the summer coastal fishery average slightly larger and older than those caught in the winter Tatik Lake fishery.

2.3 - Arctic Char Fisheries in the Ulukhaktok Area

2.3.1 - Subsistence Fisheries

The subsistence fisheries for Arctic Char in the Ulukhaktok area primarily use gillnets, although some angling occurs. The nets range in length from 20 m to 50 m. Net mesh sizes include 114 mm and 127 mm (4.5" and 5.0", respectively), but recently the 114 mm mesh nets are more common.

In 1998, there were 76 reported fishing locations in the Ulukhaktok area, 46 of which were located in the areas directly surrounding the community (Paylor 1998). Fishing activities peak at two separate times of the year, in the summer (usually July to September) in coastal areas near Ulukhaktok (broadly from Coast Point in the west to the area inside Safety Channel to the east) and in winter (usually October 12 and November 1) at Tatik Lake (Figure 1). Fishing can also occur at the mouths of rivers during the upstream and downstream migrations of Arctic Char.

The summer coastal fishery is a mixed population fishery of sea-run Arctic Char. Based on past tagging studies, it is assumed that 50% of the fish harvested are from the Kuujjua River while the remainder presumably originate from rivers flowing into Prince Albert Sound. Of the 1,478 Arctic Char tagged in the Kuujjua River in 1992 and 1993, 298 were recaptured in the summer coast fishery including in Safety Channel (DFO 2016a; DFO unpublished data). The mixing of populations in contemporary summer coastal fisheries has not been assessed formally, although Hollins et al. (2022) provides some insights on coastal char movements in the Ulukhaktok area.

Fishers from Ulukhaktok also periodically fish various rivers flowing into Prince Albert Sound (Lea et al. 2023b); the Kuuk River, including Tahiryok Lake, and the Kagloryuak River are fished occasionally but not regularly or annually, and the Kagluk River and the Naloogyak River receive very limited fishing pressure (Figure 1, Table 1). Recently, Mayoklihok Lake has been fished more frequently, and Kagloryuak River and Red Belly Lake also have been fished. Other Arctic Char stocks in the smaller rivers and lakes generally are harvested at low levels, often on a rotating basis and landlocked Arctic Char populations are an important component of Ulukhaktok's spring fishery.

Fishing effort on Tatik Lake has declined considerably since the late 1980s and greater use has been made of other winter fishing locations such as Mayoklihok Lake. In the 1960s and 1970s, the number of Arctic Char harvested in the Kuujjua River and Tatik Lake winter fishery was relatively stable at about 3,500 fish. From 1988 to 1992, the reported harvest at Tatik Lake ranged from 1,465 to 4,386 fish (Appendix I). There was a voluntary closure in 1993 and 1994 with only a harvest of 200 Arctic Char for monitoring (sampling) purposes. Since the introduction of the Fishing Plan in 1997, the harvest in Tatik Lake has ranged from 201 to 1,786 fish (Appendix I; Lea et al. 2023b), excluding years with incomplete harvest data, and has provided for an average of 23.5% of the

overall subsistence harvest for anadromous Arctic Char. The summer coastal fishery has for the most part provided 65%-77% of the subsistence harvest since the introduction of the fishing plan. Since the development of the first Community Char Fishing Plan in 1997, annual reported harvests among core fishing locations have been consistently less than the recommended safe harvest levels established within the plan. A breakdown of harvest numbers for Arctic Char in the Ulukhaktok area (1988–2020) can be found in Appendix I.

2.3.2 - Commercial Fisheries

Under the IFA, Inuvialuit subsistence fisheries are the first priority for fishery resources in the ISR. As such, consideration for developing commercial fisheries can only occur if they can be shown that they would not conflict with subsistence fisheries. This is reflected in the Beaufort Sea Integrated Fisheries Management Framework (DFO et al. 2014), which also outlines the process for making decisions for new commercial marine fisheries. Commercial or test fisheries have occurred for Arctic Char around Ulukhaktok since 1979. Under the IFA, Inuvialuit can trade and sell subsistence harvests to other beneficiaries, but not to non-beneficiaries. Consequently, a commercial licence is required to enable Arctic Char to be sold to non-beneficiaries such as visitors to the hotel and local store.

Early commercial quotas in ISR waters were primarily used as a licensing tool and not usually based on specific biological information. The first commercial quota in the Ulukhaktok area was for the Kuujua River and the Kagloryuak River in 1979 (Bodaly et al., 1992; Cosens et al., 1993, 1998; Yaremchuk et al. 1989). In 1982-84 test or commercial quotas were established for Prince Albert Sound and the test quotas were fished (Yaremchuk et al. 1989). Quotas for test fisheries on the Kagluk, Kuuk and Naloagoyaok rivers were established from 1984-87 (Lemieux 1990; Lemieux and Sparling 1989; Sparling and Stewart 1988; Stewart and Sparling 1987; Yaremchuk et al. 1989). Table 2 in Appendix I summarizes information on the quotas and the reported harvests.

In 2000, a small commercial fishery was established at the request of community fishers to enable Arctic Char to be sold in Ulukhaktok, the ISR, and the Northwest Territories. The OHTC applied for and received two Stage I (Feasibility) community commercial fishing licences under DFO's New Emerging Fisheries Policy (DFO 2009a; see Appendix III). The licences were for (i) the Ulukhaktok coastal area and Kuuk River system and (ii) the other for the Kagluk River. Each licence had a 500 Arctic Char catch limit. A limited number of Arctic Char were commercially harvested (all in the coastal area) in 2000. After the 2000 season, the Stage I fishery continued but only for the coastal area with a quota of 500 Arctic Char. The fishery used 114 and 140 mm mesh gillnets. Prior to 2016, the OHTC applied annually for a new licence from DFO for 500 Arctic Char. The OHTC allocated these tags amongst interested community members. Harvesters were required to collect harvest, catch, effort, and biological data from their catches (Lea et al. 2023a). The commercial harvest taken under the Stage I community commercial licence ranged from 100 to 500 Arctic Char per year for the period from 2000 to 2015 (Table 2), with no harvest recorded for 2004 and 2005 (Lea et al. 2023b). In

2016, the stock assessment of Ulukhaktok Arctic Char concluded that the biological data for the coastal fishery was sufficient to proceed to the next stage of DFO's New Emerging Fisheries Policy (DFO 2016b). As such, the fishery became a Stage II (Exploratory) fishery in 2016, with the quota increased to 700 fish. In 2020, the UCWG, with unanimous support from the community at the public portion of the UCWG meeting, made the decision to put a hold on the Stage II (Exploratory) fishery for a 5-year period, based on concerns related to declining subsistence harvest numbers.

2.3.3 - Sport Fisheries

Sport fishing can occur in the Ulukhaktok area, as long as it does not interfere with subsistence fishing. Few sport fishers visit the Ulukhaktok area to angle for Arctic Char. A 2001 angler survey recorded eight anglers fished along the coast and at inland lakes in the Holman area, and caught 58 Arctic Char.

Sport fishing is managed under the *Northwest Territories Fishery Regulations* and the IFA. Any non-beneficiary intending to angle for Arctic Char in the Ulukhaktok area must first obtain a Northwest Territories (NWT) Sport Fishing Licence validated for the ISR and register with the FJMC or the OHTC if they wish to fish on private 7(1)(a) or 7(1)(b) lands. Sport fishers must adhere to the Daily Catch and Possession Limits for Arctic Char established under the *Northwest Territories Fishery Regulations* and should review the latest Sport Fishing Regulations Guide for updates.

2.4 - Stock Assessment and Status

The first formal stock status assessment of Ulukhaktok Arctic Char populations occurred in 2016 through a Research Advisory Process (DFO 2016b) that focussed on the Kuujjua River population; using data collected from the summer mixed-stock coastal fishery and the winter fishery in Tatic Lake. The process reviewed and analyzed available harvest and biological data and explored the use of population modelling for the Kuujjua River population. Insufficient information existed to conduct assessments of the other stocks.

The Research Advisory Process concluded that “*Biological and catch indices indicate that the Kuujjua River population is not experiencing overfishing and the current stock status is healthy*” (DFO 2016b). It also concluded that “*The current level of harvest experienced by the stock appears to be sustainable*” (DFO 2016b). However, the total annual harvest of Kuujjua River Arctic Char is unknown because the proportion of Kuujjua River fish caught in the mixed-population summer coastal harvest is uncertain (DFO 2016b).

The conclusions from the assessment performed in 2016 were consistent with previous conclusions. The catch and biological data from the winter subsistence fishery at Tatic Lake for the period of 1991 to 2009 and in 2011 suggested the harvest level has been sustainable (Gallagher, report to UCWG February 2012; Harwood et al. 2013). Also, in 1997, community consensus was that the Tatic Lake fishery was sustainable (Paylor et al. 1998). A workshop for Kuujjua River Arctic Char was held in 1998 because some information (e.g., harvest levels of 40% population size based on tag returns) suggested that the population was being overharvested whereas other biological indicators (e.g.,

size-at-age) suggested it was not. The workshop concluded that the 40% harvest level was incorrect and proposed several studies be undertaken (Ayles 1998).

Currently, the main community concerns are related to the potential impacts of climate change on the char populations and habitats (spawning, rearing, overwintering, migratory, and foraging). These concerns include:

- Changing water levels and temperatures in both marine and freshwater environments;
- Changing extent, thickness, and duration of sea ice, as well as freshwater ice conditions; and
- Increasing numbers and uncertain impacts of previously uncommon species in the area, including Pacific salmon (*Oncorhynchus* spp.) and Orca (*Orcinus orca*).

There is still uncertainty on the impacts of these changes and whether some of them are a result of anomalous years or whether they are part of long-term trends, but years with ‘good fishing’ are seeming to be more sporadic.

2.5 - Management Issues

The major issues in the sustainable use and effective management of the Uluhaktok Arctic Char fisheries and populations are (1) population conservation, (2) habitat protection, and (3) climate and resultant ecosystem changes.

A common feature of these issues is a lack of detailed information on the Uluhaktok Arctic Char populations and their habitat requirements, and the lack of ability to make predictions on the effects of natural or human-induced changes, including harvesting, on the populations and their habitats. Continued collection of basic information and its analysis is required as is support for environmental modelling. Such information, analysis, and modelling would allow co-managers and stakeholders to make better decisions on population management and to better implement rule-based decision-making to ensure the sustainable harvest of the Arctic Char populations.

When adequate information is not available, a precautionary approach should be followed. The absence of adequate information should also not be used as a reason to postpone or fail to take actions to avoid serious harm to fish populations or their ecosystems when a decision is required. Inuvialuit Knowledge, as well as ‘western’ science, have a significant role to play. Fishers and other community members continue to provide valuable insights into the biology of the Arctic Char populations and to developing stressors. An effort should be undertaken to systematically gather Inuvialuit Knowledge so that it can inform decision-making (e.g., Pearce et al. 2024).

2.5.1 - Population Conservation

Although concern about the health of some Uluhaktok Arctic Char populations was the initial reason for the development of the Holman Char Fishing Plans (HCWG 1997, 2001, 2004), the current information suggests populations are relatively healthy. DFO (2016a) concluded that the Kuujua River population is not experiencing overfishing, the current population status is healthy, and the current level of harvest is sustainable. However, continued management of the fisheries using the precautionary approach is

required to ensure the conservation and sustainable use of the Arctic Char populations and to optimize harvest levels. Information on the status of other Arctic Char populations is required as well.

One issue is that the summer coastal fishery is a mixed population fishery. Populations of Arctic Char from the Kuujjua, Kagloryuak, Kuuk, Naloagyok, and Kagluk rivers contribute to the fishery. It is assumed that at least 50% of the harvest comes from the Kuujjua River, but this has not been assessed formally. When making harvest recommendations and other management decisions, the UCWG needs to consider the proportion of this harvest that originates from each river system to ensure the conservation of each population. Research is required to identify the origins of the fish caught in the summer coastal fishery to help ensure that no population is overharvested.

A second issue is that the subsistence and commercial fisheries, and sport fisheries if they occur, harvest the same populations. Safe harvest levels established for each population must ensure that all subsistence, commercial, and sport harvesting activities are considered.

Until data exist to establish safe harvest levels, management of Ulukhaktok Arctic Char stocks and fisheries will rely on indicators of population health, such as changes and trends in length, weight, age, CPUE, etc., and Inuvialuit Knowledge to help establish and change allowable harvest levels. A Traffic Light communication tool has been implemented in other ISR working groups (DFO 2019) and could help make the decision-making process more explicit, if implemented by the UCWG.

2.5.2 - Habitat Protection

Loss of critical fish habitat (e.g., spawning and overwintering habitats) would severely affect Arctic Char stocks. Areas important for Arctic Char are identified in the Olokhaktomiut Community Conservation Plan (OHTC et al. 2016). Within the Community Conservation Plan, the Kuujjua, Kuuk, Kagluk, and Kagloryuak rivers systems are all assigned a classification of being areas of “extreme significance and sensitivity” (OHTC et al. 2016). Other areas around Ulukhaktok that have Arctic Char stocks are considered areas of “some significance and sensitivity”, unless other cultural or renewable resources of higher value exist in the same area. The adjacent marine areas in Prince Albert Sound and Minto Inlet are considered areas of “extreme significance and sensitivity” to reflect their importance to Beluga (Beluga Management Plan Zone 1), and parts of the coastal areas also are recognized as important for Arctic Char feeding and migration.

Marine Ecologically and Biologically Significant Areas (EBSAs) and Ecologically Significant Species have been identified for the Beaufort Sea (DFO 2011; DFO 2014; Cobb et al. 2014; Cobb et al. 2020). The marine areas around Ulukhaktok are part of the Western Arctic Bioregion; proposed eco-units are Amundsen Gulf Bays, Amundsen Gulf Pelagic, and Amundsen Gulf Polynyas (Cobb et al. 2020). EBSAs in the vicinity of Ulukhaktok that are important for Arctic Char feeding and migration are Walker Bay,

Minto Inlet/Kuujjua River, Albert Islands/Safety Channel, and Kagloryuak River. These incorporate the marine parts of areas identified in the Community Conservation Plan.

No major habitat protection concerns are known around Ulukhaktok. However, to ensure the sustainable harvest of Arctic Char, critical habitats, especially spawning grounds, and nursery and over-wintering areas, should be identified and monitored. Also, any development that may affect Arctic Char habitats should be carefully reviewed to ensure that appropriate fish habitat protection requirements are implemented. Such reviews should incorporate the relevant ecosystem and habitat protection requirements of the Beaufort Sea Beluga Management Plan (FJMC 2024), Beaufort Sea Integrated Ocean Management Plan (Beaufort Sea Partnership 2009), and the Beaufort Sea Integrated Fisheries Management Framework (DFO et al. 2014).

2.5.3 - Climate and Ecosystem Change

Climate change may affect Ulukhaktok Arctic Char directly and indirectly, as it is projected to affect the physical environment (e.g., air and water temperatures, ice, etc.). In the Ulukhaktok area, days colder than -30°C are predicted to decrease from 91.0 days per year in 1976-2005 to 39.1 days per year by 2051-2080, under a low-carbon climate scenario, and the frost-free season to increase from 74 days a year to 103.1 days a year (University of Winnipeg, 2019). Such changes may affect Arctic Char and other species in the freshwater and coastal ecosystems.

Climate change related concerns include: northward shifts in the geographic distribution of Arctic Char and range expansion of species such as Pacific salmon (*Oncorynchus* spp.), which may become more numerous in the area and compete with or disrupt Arctic Char (harvesters first reported Pacific salmon caught in Fish Lake in 2020); Arctic Char habitat may become less suitable if bank and shoreline erosion cause changes in freshwater substrate composition and affect migration routes; the suitability of Arctic Char habitat if groundwater inputs change at spawning and overwintering sites upon which eggs, fry, and overwintering fish depend; changes in water levels may also have adverse effects on Arctic Char spawning grounds, nursery areas, and migration corridors.

However, climate change is also projected to enhance productivity in the offshore pelagic environment, which could provide Arctic Char with increased quantity and quality of food during the summer through decreased duration and extent of sea ice cover and ecosystem changes. Harwood et al. (2013) have shown that Kuujjua River Arctic Char harvested during fall have higher body condition in years of earlier spring break-up when they have longer to feed in coastal waters. Local observations and research on stomach contents have shown possible shifts in the diet of Arctic char in the Ulukhaktok area. The implications of any of these climate-related changes on Arctic Char populations are not well understood and may be positive and/or negative.

To the extent possible, the effects and implications of climate change on Ulukhaktok Arctic Char should be predicted, appropriate indicators developed and monitored, and considered accordingly in all management actions, especially through Inuvialuit Knowledge, the collection of more baseline data, and continued monitoring.

3.0 - The Management Plan

Ulukhaktok area Arctic Char populations, their habitats, and fisheries will continue to be managed through shared stewardship and adaptive co-management processes that incorporate precautionary and ecosystem approaches.

3.1 – The Fisheries

3.1.1 - Subsistence Fisheries

The main priority of this plan is to maintain culturally important subsistence fisheries while also ensuring conservation and sustainable practices. This includes encouraging and developing the means to harvest in distant areas not typically fished, in order to reduce stress on stocks contributing to fisheries near the community.

In conducting subsistence fishing activities, fishers will follow the Community Guidelines for Fishing in the Ulukhaktok Area (Section 3.2) and the relevant requirements of Ulukhaktok’s Subsistence and Commercial Harvesting General Guidelines (OHTC et al. 2016), as well as the *Fisheries Act*, the *Northwest Territories Fishery Regulations*, and the *Fishery (General) Regulations* (see Appendix IV).

Voluntary allowable harvest levels for Arctic Char in the Ulukhaktok area have been developed as part of this Plan (Table 1), which the OHTC may allocate among its members for the various subsistence fisheries. Allowable harvest levels are community-based recommendations agreed to by DFO and the FJMC. Their implementation is voluntary as, under the IFA, no enforceable harvest levels exist for the Ulukhaktok area. However, it is the responsibility of the OHTC to ensure the agreed upon harvest levels are not exceeded. Changes to safe harvest levels will be made with consideration of available Inuvialuit and scientific knowledge, and if implemented, make use of the developing FJMC Traffic Light Process (DFO 2019). Harvest monitoring should continue in order to provide data for management discussions and help ensure the subsistence fisheries are sustainable.

Table 1: The annual Voluntary Harvest Levels for Arctic Char at the various fishing locations in the Ulukhaktok area.

Fishing location	Allowable Harvest Levels
Coastal areas	4,000 char
Kuujjua River and Tatik Lake (Fish Lake)	50 char per household, for a total of 1,000 char
Ivitagohiovik (Red Belly Lake)	15 char per household
Kagloryuak River	1,500 char
Kuuk River and Tahiryuak Lake	1,500 char

Kagluk River	500 char
Naloagyok River	500 char
Mayoklihok Lake	No voluntary harvest level has been set for Mayoklihok

3.1.2 - Commercial Fisheries

1. There are currently no commercial fisheries for Arctic char in the Ulukhaktok area, given concerns related to the impacts to the subsistence harvest.
 - a. A previous Stage I coastal fishery operated successfully from 2000 to 2015, then became a Stage II (Exploratory) fishery in 2016. However, in 2020 the UCWG, with unanimous support from the community, made the decision to put a hold on the Stage II (Exploratory) fishery for at least a 5-year period.
2. Any development of a new commercial fishery would need to be consistent with the requirements of the Beaufort Sea Integrated Fisheries Management Framework and would have to follow the process of DFO's New Emerging Fisheries Policy.

3.1.3 - Sport Fisheries

1. Sport fishers who want to angle in the Ulukhaktok area require an NWT Sport Fishing Licence validated for the ISR and must register with the OHTC or FJMC if they wish to fish from private 7(1)(a) or 7(1)(b) lands.
2. Currently the sport fishing daily catch and possession limits for Arctic Char in waterbodies in the Ulukhaktok area is 4 and 7 respectively, although the FJMC and UCWG discourage sport fishing in the Kuujjua River system.
3. All other regulations pertinent to sport fishing apply, including the use of barbless hooks.
4. Sport fishers intending to angle in the Ulukhaktok area should review the latest Northwest Territories Sport Fishing Regulations Guide for updates.

3.2 - Community Guidelines for Fishing in the Ulukhaktok Area

For all fishing in the Ulukhaktok area, the UCWG recommends that harvesters practice the following:

- *Take only what you need.*
- *Use only 4.5" or 5" inch gill nets only and hooks (jiggling sticks or fishing rod) to catch char.*
- *Be respectful of other people's fishing areas and gear.*
- *Keep your own fishing areas clean; pick-up nets from the shoreline if you are not using them (so they cannot harm wildlife and so others can use those areas if they want to).*
- *Participate in the harvest surveys and monitoring programs, to ensure that information about their catches is available to the UCWG and community for management discussions.*
- *Be respectful of the land and what it provides for us.*

3.3 - Habitat Protection

The community of Ulukhaktok has identified the need to identify and protect important Arctic Char habitats, particularly spawning and overwintering habitats, from disruptive land uses (OHTC et al. 2016). Protecting the habitats of Ulukhaktok Arctic Char is essential for implementing the conservation goal, and hence supports the Total Allowable Harvest Objective.

Ulukhaktok Arctic Char stocks and their critical habitats will be protected from the adverse effects of development through the careful review of any development to ensure that appropriate fish habitat protection requirements are implemented under the provisions of the *Fisheries Act* and the Environmental Impact Screening Committee. Such reviews should incorporate the relevant ecosystem and habitat protection requirements of the Beaufort Sea Beluga Management Plan (FJMC 2024), Beaufort Sea Integrated Ocean Management Plan (Beaufort Sea Partnership 2009), and the Beaufort Sea Integrated Fisheries Management Framework (DFO et al. 2014).

3.4 - Research and Monitoring

Continued monitoring of the fisheries is imperative. The UCWG should ensure that the necessary information is collected, and that indicators and their use are appropriate for ensuring the long-term health of the fish stocks and the sustainability of the fisheries. Introduction of the Traffic Light Process (DFO 2019) would require that some or all proposed indicators be monitored for explicit and repeatable decision-making.

Under the guidance of DFO, the UCWG, and the OHTC, Ulukhaktok's Community Char Monitors will continue to monitor the summer coastal fishery, the Tatik Lake winter fishery, and the commercial fishery each year. Community Char Monitors will collect information on numbers of fish caught, the number of harvesters and their effort, as well as fish size, sex, and maturity. Monitors and harvesters may record other relevant observations, such as the numbers of migrating fish, numbers of overwintering fish, habitat changes, etc. Monitors should also record similar information for other subsistence fisheries whenever possible. Harvesters will provide requested information and samples, if possible, to the Monitors, and will return any tags, along with information on when and where the fish were caught, to DFO (ongoing).

DFO with the FJMC, OHTC and UCWG will develop and implement projects to improve the understanding, conservation and sustainable use of anadromous and landlocked Ulukhaktok Arctic Char populations. Documenting and knowing more about their biology and movement is a high priority for Ulukhaktok residents (OHTC et al. 2016). DFO (2016a) has identified the following research and data collection needs that should be undertaken.

- Characterize the genetic population structure of Arctic Char with a goal of conducting genetic mixed-population fishery analysis along the coast.
- Determine freshwater and marine habitats of importance to Arctic Char, and how they are used among all life stages.

- Utilize Inuvialuit Knowledge from the community to assess the levels of past harvest and catch rates, identify critical fish habitats, and document known fishing locations.
- Examine life history variation, such as the extent of residency versus anadromy, frequency of migration, extent of straying, the relationship between recruitment and spawning stock biomass, spawning timing and frequency, and fecundity.
- Monitor diet variation in conjunction with stock metrics and environmental conditions in order to enhance understanding of stock productivity and contribute to an ecosystem approach to management of these stocks.
- Examine the age structure from unharvested or lightly harvested Arctic Char stocks in the area to compare to the Kuujua River stock, in order to help indicate the level of natural mortality in these stocks and improve models.

Inuvialuit Knowledge should be incorporated into these projects whenever appropriate and opportunities should be made to promote the transfer of Inuvialuit Knowledge from Elders to younger harvesters. Local information and expertise will be used in the design, delivery and interpretation of all projects.

Potential longer-term projects include:

- Identification of Arctic Char populations that could support expanded or new fisheries, e.g., populations in Boot Inlet, Walker Bay, Mayoklihok Lake, Red Belly Lake, and Minto Inlet (see Ayles 1998; DFO 2016a, 2016b);
- Conduct a fish weir study at Uyakgaktok Lake, to determine if and how many char migrate into the lake;
- Collection and publishing of existing Inuvialuit Knowledge so it is accessible to managers and others;
- Development of opportunities for Elders to work with younger harvesters to share their char fishing knowledge;
- Refining of models for Arctic Char population dynamics;
- Monitoring of contaminant levels in Arctic Char and the environment;
- Monitoring and modelling the impacts of climate change so that they can be integrated into the conservation and management of the Arctic Char populations.

3.5 - Communication, Education, and Compliance

Achieving the goals and objectives of the CFMP requires a collective effort from the community and other stakeholders to protect and conserve Ulukhaktok Arctic Char and their habitats and ensure that fisheries are sustainable. Therefore, the UCWG, DFO and the FJMC will use appropriate opportunities to communicate to Ulukhaktok residents, especially fishers and youth, the role of the CFMP in protecting the Arctic Char, and the management measures being undertaken to help ensure sustainable harvesting. As an initial effort, a condensed version of this Plan has been made into a “back-pocket” pamphlet, that can be distributed to harvesters in the community and easily referenced whilst out harvesting. In addition, proactive communication will occur with fishers to ensure they remain aware of the CFMP and pertinent legislation. The OHTC will communicate to its members the importance of compliance, with the emphasis on voluntary actions.

DFO Fishery Officers will assist the OHTC as appropriate, and will conduct patrols, monitoring and surveillance throughout the year, with an increased presence during sensitive times. They will respond to and investigate complaints and reports of illegal activities. If there is evidence of non-compliance, enforcement action will be taken and may include warnings or prosecutions. Any reports of illegal sales of Arctic Char should be investigated.

4.1 - Management of the CFMP

Conservation and sustainable use of the Ulukhaktok Arctic Char stocks requires annual review to ensure that no conservation issues have arisen, that harvests are sustainable, and to incorporate new information. The effectiveness of the CFMP and its implementation should also be periodically assessed.

Each year the UCWG will lead the annual review of the Ulukhaktok Arctic Char fisheries. In the annual reviews, the UCWG will:

- apply information from the population assessment, harvest monitoring programs, and other sources, through an established process, to determine:
 - whether a change in allowable harvest levels is warranted,
 - whether any other management changes are required,
 - whether the management category for the population should be changed,
 - when new population assessments are required,
 - whether additional research should be undertaken, and
 - whether the harvest monitoring program should be changed;
- determine whether any changes are required to improve habitat protection;
- determine whether new educational initiatives are required; and
- determine whether to undertake other new initiatives.

If deemed necessary by the signatories, the CFMP will undergo an in-depth re-evaluation to determine whether its objectives and goals are being achieved and whether any changes are required. Evaluation criteria and measurable indicators will be developed to help guide the process.

Signature Page

Fisheries and Oceans Canada, the Fisheries Joint Management Committee, and the Olokhaktomiut Hunters and Trappers Committee support this Ulukhaktok Arctic Char Community Fisheries Management Plan and are committed to its effective implementation.

The signatories wish to acknowledge the role of the Ulukhaktok Char Working Group in the development of the CFMP, and its roles and responsibilities for its implementation.

Marcoux,
Christian

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Christian Marcoux,
Arctic Region - Regional Director of Fisheries Management
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Herb Angik Nakimayak
Chairperson
Fisheries Joint Management Committee



Pat Klengenberg
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Olokhaktomiut Hunters and Trappers Committee

References

- Armitage, D., F. Berkes, and N. Doubleday. 2007. Adaptive co-management, collaboration, learning and multi-level governance. UBC Press, Vancouver. 360 p.
- Ayles, B. 1998. The FJMC/DFO/Holman HTC Kuujua River Char workshop. Unpubl. Final Rep. 10 p.
- Ayles B., R. Bell, and A. Hoyt. 2007. Adaptive fisheries co-management in the Western Canadian Arctic. *In* D. Armitage, F. Berkes, and N. Doubleday. Adaptive co-management: collaboration, learning and multi-level governance. UBC Press, Vancouver: 125-150.
- Baker, R.F. 1986. Report on the test fishery of the Kuuk River, Prince Albert Sound, Northwest Territories, 1986. Fish. Joint Mgmt. Cttee. Rep. 86-004: 25 p.
- Beaufort Sea Partnership. 2009. Integrated ocean management plan for the Beaufort Sea: 2009 and beyond. 57 p. Available at: www.beaufortseapartnership.ca
- Bodaly, R.A., S. E. Cosens, T. A. Shortt, and R. E. A. Stewart. 1992. Report of the Arctic Fisheries Scientific Advisory Committee for 1989/90 and 1990/91. Can. Manuscr. Rep. Fish. Aquat. Sci. 2139: iv + 91 p.
- Coad, B.W. and J.D. Reist. 2018. Marine fishes of Arctic Canada. Univ. Toronto Press, Toronto. 618 p.
- Cobb, D.G., V. Roy, H. Link, and P. Archambault. 2014. Information to support the re-assessment of ecologically and biologically significant areas (EBSA) in the Beaufort Sea Large Ocean Management Area. DFO Can. Sci. Advis. Sec. Res. Doc. 2014/097: iv + 37 p.
- Cobb, D.G., S. MacPhee, J. Paulic, K. Martin, V. Roy, J. Reist, C. Michel, A. Niemi, E. Richardson, and A. Black. 2020. Information in support of the identification of ecologically significant species and community properties (ESSCP) in the Western Arctic Biogeographic Region. DFO Can. Sci. Advis. Sec. Res. Doc. 2018/027. iv + 66 p.
- Community of Ulukhaktok, Wildlife Management Advisory Committee (NWT), and Joint Secretariat. 2008. Olokhaktomiut Community Conservation Plan. 127 p.
- Condon, R.G. 1996. The northern Copper Inuit. Univ. Toronto Press. xxii + 216 p.
- Cosens, S.E., R. Crawford, B.G.E. de March, and T.A. Shortt. 1993. Report of the Arctic Fisheries Scientific Advisory Committee for 1991/92 and 1992/93. Can. Manuscr. Rep. Fish. Aquat. Sci. 2224: iv + 51 p.

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 and 1994/95. Can. Manusc. Rep. Fish. Aquat. Sci. 2473: v + 87 p.

DFO (Fisheries and Oceans Canada). 2009a. New emerging fisheries policy. Available at: www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche.

DFO (Fisheries and Oceans Canada). 2010. Exploratory fishery protocol – Nunavut and Northwest Territories anadromous Arctic Char. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2010/022: 9 p.

DFO (Fisheries and Oceans Canada). 2011. Identification of ecologically and biologically significant areas (EBSAs) in the Canadian Arctic. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2011/055. waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/344747.pdf.

DFO (Fisheries and Oceans Canada). 2014. Re-evaluation of Ecologically and Biologically Significant Areas (EBSAs) in the Beaufort Sea. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2014/052. waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/364414.pdf.

DFO (Fisheries and Oceans Canada), Fisheries Joint Management Committee, Inuvialuit Game Council, and Inuvialuit Regional Corporation. 2014. Beaufort Sea integrated fisheries management framework for the Inuvialuit Settlement Region, Canada: 2013-2017. Canada/Inuvialuit Fish. Joint Mgmt. Cttee. Rep. 2014-01: 64 p.

DFO (Fisheries and Oceans Canada). 2016a. Proceedings of the regional peer review of the assessment of Arctic Char in the Ulukhaktok area of the Northwest Territories. DFO Can. Sci. Advis. Sec. Proceed. Ser. 2016/021: 16 p.

DFO (Fisheries and Oceans Canada). 2016b. Assessment of Arctic Char (*Salvelinus alpinus*) in the Ulukhaktok area of the Northwest Territories. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2016/038: 12 p.

DFO (Fisheries and Oceans Canada), Fisheries Joint Management Committee, Gwich'in Renewable Resources Board, and Parks Canada Agency. 2019. Integrated fisheries management plan for Dolly Varden (*Salvelinus malma malma*) of the Gwich'in Settlement Area and Inuvialuit Settlement Region, Northwest Territories and Yukon North Slope. Volume 1: The Plan – 2019 Update. 52 p.

Fisheries Joint Management Committee. 2024. Beaufort Sea beluga management plan. 6th Amended Printing. Inuvik, NT. 57 p. Available at: www.fjmc.ca.

Gallagher, C.P., K. L. Howland, M. H. Papst, and L. A. Harwood. 2021. Harvest, catch-effort, and biological information of Arctic Char, *Salvelinus alpinus*, collected from a long-term subsistence harvest monitoring program in Tatik Lake (Kuujjua River), Northwest Territories. DFO Can. Sci. Advis. Sec. Res. Doc. 2021/022. iv + 33 p.

Harwood, L.A., S. J. Sandstrom, M. H. Papst, and H. Melling. 2013. Kuujua River Arctic Char: monitoring stock trends using catches from an under-ice subsistence fishery, Victoria Island, Northwest Territories, Canada, 1991–2009. *Arctic*. 66(3): 291–300.

Holling, C.S. 1978. Adaptive environmental assessment and management. Int. Inst. Applied Systems Analysis. J. Wiley & Sons, Chichester. 377 p.

Hollins, J., Pettitt-Wade, H., Gallagher, C.P., Lea, E.V., Loseto, L.L., and Hussey, N.E. 2022. Distinct freshwater migratory pathways in Arctic char, *Salvelinus alpinus*, coincide with separate patterns of marine spatial habitat-use across a large coastal landscape. *Can. J. Fish. Aquat. Sci.* 79: 1447-1464. <https://doi.org/10.1139/cjfas-2021-0291>

Holman Char Working Group. 1997. Holman Char Fishing Plan, 1997-1999. 1 p. Available at: www.fjmc.ca.

Holman Char Working Group. 2001. Holman Char Fishing Plan, 2001-2004. 11 p. Available at: www.fjmc.ca.

Holman Char Working Group. 2004. Holman Char Fishing Plan, 2004-2006. 14 p. Available at: www.fjmc.ca.

Inuvialuit Final Agreement. 2005. Consolidated version. 133 p. Available at: www.irc.inuvialuit.com.

Johnson, L. 1980. The Arctic Char, *Salvelinus alpinus*. In: Balon, E. K. (ed.). Chars: salmonid fishes of the genus *Salvelinus*. 15-98. Dr. W. Junk Publishers, The Hague.

Joint Secretariat. 2003. Inuvialuit harvest study. Data and methods report 1988-1997. Joint Secretariat, Inuvik. 203 p.

Lea, E.V., C.P. Gallagher, G.M. Carder, K.G.A. Matari, and L.A. Harwood. 2023a. UluKhaktok, Northwest Territories coastal Arctic Char (*Salvelinus alpinus*) subsistence (1993–1997 and 2011–2015) and commercial (2010–2015) fisheries: Catch-per-unit-effort and biological sampling. DFO Can. Sci. Advis. Sec. Res. Doc. 2023/015. iv + 41 p.

Lea, E.V., Olokhaktomiut Hunters and Trappers Committee, and L.A. Harwood. 2023b. Fish and marine mammals harvested near UluKhaktok Northwest Territories, with a focus on anadromous Arctic char (*Salvelinus alpinus*). DFO Can. Sci. Advis. Sec. Res. Doc. 2023/014. Iv + 23 p.

Lea et al. 2025 (in prep/press). Reported harvest of fish and marine mammals from the UluKhaktok area, 1988–2020. Can. Tech. Rep. Fish. Aquat. Sci. xxxx: x + xx p.

Lemieux, P. J., and P. D. Sparling. 1989. A biological assessment of Arctic char in the Naloagyok River, Victoria Island, NWT, 1989. Fish. Joint Mgmt. Cttee. Rep. 89-006: 39 p.

Lemieux, P.J. 1990. A biological assessment of Arctic char in the Kagloryuak River, Victoria Island, NWT, 1990. Fish. Joint Mgmt. Cttee. Rep. 90-001: 29 p.

Lewis, P.N.B., A.H. Kristofferson, and D.H. Dowler. 1989. Data from fisheries for Arctic Char, Kuujua River and Holman areas, Victoria Island, Northwest Territories, 1966–87. Can. Data Rep. Fish. Aquat. Sci. 769: 17 p.

Olokhaktomiut Hunters and Trappers Committee, Ulukhaktok Community corporation, Wildlife Management Advisory Committee (NWT), Fisheries Joint Management Committee, and Joint Secretariat. 2016. Olokhaktomiut Community Conservation Plan. Ulukhaqtuum Angalatchivingit Niryutinin. 154 p. Available at: www.jointsecretariat.ca.

Paylor, A.D., M.H. Papst, and L.A. Harwood. 1998. Community household surveys on the Holman subsistence Arctic Char (*Salvelinus alpinus*) fishery priorities, needs and traditions. Can. Tech. Rep. Fish. Aquat. Sci. 234: 16 p.

Pearce, T., Gallagher, C.P., Lea, E.V., Kudlak, G., Pettitt-Wade, H., Smart, J., Memogana, S., Furgal, C., and Loseto, L. 2024 Inuit traditional ecological knowledge of anadromous Arctic char, iqalukpik (*Salvelinus alpinus*) under changing climatic conditions in the Amundsen Gulf, western Canadian Arctic. Arctic. <https://doi.org/10.14430/arctic79391>

Scott, W.B., and E.J. Crossman. 1973. Freshwater Fishes of Canada. Fish. Res. Board Can. Bull.184: 966 p.

Sparling, P.D., and D.B. Stewart. 1988. A biological assessment of Arctic Char in the Kagluk River, Victoria Island, NWT. Report prepared for the Holman Hunters and Trappers Association. 30 p.

Stephenson, S.A. 2004. Harvest studies in the Inuvialuit Settlement Region, Northwest Territories, Canada: 1999 and 2001-2003. Can Manuscr. Rep. Fish. Aquat. Sci. 2700: vi + 34 p.

Stewart, D.B., and P.D. Sparling. 1987. A biological assessment of Arctic Char stocks in the Kuuk and Kagluk Rivers, Victoria Island, NWT. Fish. Joint Mgmt. Cttee. Rep. 87-001: 43 p.

University of Winnipeg. 2019. The climate atlas of Canada, version 2. Prairie Climate Centre, Univ Winnipeg, Winnipeg, Manitoba. Available at: <https://climateatlas.ca/>.

Yaremchuk, G.C.B., M.M. Roberge, D.K. McGowan, G.W. Carder, B. Wong, and C.J. Read. 1989. Commercial harvests of major fish species from the Northwest Territories, 1945 to 1987. Can. Data Rep. Fish. Aquat. Sci. 751: iv + 129 p.

Appendix I - Harvest Records

Table 1. Recorded catches of Arctic Char in the Ulukhaktok area subsistence and exploratory fisheries from various harvest monitoring programs, 1988 to 2019 (Joint Secretariat 2003; Stephenson 2004; Harwood et al. 2013; Gallagher et al. 2021; Lea et al. 2023b; Lea et al. 2025).

Year	Kuujua R. & Tatik L. ^e	Mayoklihok Lake	Ulukhaktok Coast		Prince Albert Sound				Total
			Subsistence	Commercial	Kuuk R. & Tahiryok L.	Kagoryuak R. & Kingua	Kagluk R.	Unspecified	
1988	4,386	-	4,838	-	15	0	0	-	9,239
1989	3,218	-	2,609	-	70	0	0	-	5,897
1990	3,160	-	4,021	-	186	0	0	-	7,367
1991	1,465	-	1,752	-	14	0	0	-	3,231
1992	2,485	-	4,934	-	454	399	0	-	8,272
1993 ^a	0	-	4,753	-	282	2,800	0	-	7,835
1994 ^b	269	-	6,297	-	157	3,327	0	-	10,050
1995 ^b	227	-	5,631	-	0	5,502	0	-	11,360
1996	1,000	-	5,549	-	50	1,330	550	-	8,479
1997	1,166	-	4,365	-	150	224	227	-	6,132
1998	1,260	-	3,714	-	178	210	0	-	5,362
1999	1,201	-	4,449	-	320	0	0	-	5,970
2000	1,786	-	3,928	100	0	351	0	-	6,166
2001	1,137	-	3,469	500	54	453	0	-	5,613
2002	1,180	-	4,061	500	-	283	0	-	6,024
2003	743	-	2,263	293	29	105	0	-	3,433
2004	530	-	2,359	0	29	-	-	459	3,377
2005	951	-	2,126	0	65	475	191	250	4,058
2006	488	-	2,163	500	22	100	-	120	3,393
2007	491	-	2,154	500	88	200	-	-	3,433
2008	967	-	2,193	500	-	1,274	-	-	4,934
2009	570	-	936	500	-	610	-	-	2,616
2010 ^c	201	-	Unknown	500	-	-	-	-	>701
2011	892	-	1,325	500	-	914	-	-	3,631
2012	819	-	2,083	286	10	675	-	-	3,873
2013 ^d	518	200	132	354	-	740	-	-	1,944
2014	644	-	2,409	346	-	151	-	156	3,706
2015	821	100	1,953	500	11	80	-	-	3,465
2016	794	298	2141	583	31	356	-	-	4,203
2017	871	267	1509	526	-	-	-	-	3,173
2018	543	263	950	377	25	-	-	-	2,158
2019	634	352	1031	497	-	-	-	-	2,514
2020 ^d	381	50	884	0					1,315
Allowable harvest levels									
Pre-2016	1,000	-	4,000	500	1,500	1,500	500	-	9,000
2016-2019	1,000	-	4,000	700	1,500	1,500	500	-	9,000
2020-present	1,000	-	4,000	-	1,500	1,500	500	-	9,000

^a Voluntary closure at Tatik Lake (no harvest).

^b Voluntary closure at Tatik Lake (harvest monitoring program only).

^c Incomplete harvest records; surveys only occurred January to March.

^d Community noted lower confidence in the accuracy of harvest surveys in these years.

^e Values represent best estimate determined through a comparison of data from harvest surveys and harvest monitoring program.

Table 2. Summary of commercial (C) and test (T) quotas and harvests for Arctic Char in the Ulukhaktok area, 1979-1990.

Fishery and Year	Quota (kg round wt.)	Harvest (kg round wt.)	Reference
Kuujuua River			
1979-1981	680 (C)	454 (1980)	Yaremchuk et al. (1989)
1982-1991	600 (C)	600 (1982-1984)	Yaremchuk et al. (1989)
Kuuk River			
1984	1,000 (T)		Yaremchuk et al. (1989)
1985	1,000 (T)	414	Yaremchuk et al. (1989)
1986	1,000 (T)	299	Yaremchuk et al. (1989)
1987	2,000	1,850 (560 fish)	Stewart and Sparling (1987)
Kagloryuak River			
1979	4,536 (C)		Yaremchuk et al. (1989)
1980	4,536 (C)		Yaremchuk et al. (1989)
1983	4,500 (C)	4,458	Yaremchuk et al. (1989)
1985	1,500 (C)	48	Yaremchuk et al. (1989)
1987	4,500 (C)	1,309 (1990) (559 fish)	Lemieux (1990)
Naloagoyoak River			
1984	1,000 (T)		Yaremchuk et al. (1989)
1985	1,000 (T)	45	Yaremchuk et al. (1989)
1986	1,000 (T)		Yaremchuk et al. (1989)
1987	1,000 (T)	1,179 (1989) (467 fish)	Lemieux and Sparling (1989)
Kagluk River			
1984	1,000 (T)		Yaremchuk et al. (1989)
1985	1,000 (T)	168	Yaremchuk et al. (1989)
1986	1,000 (T)		Yaremchuk et al. (1989)
1987	1,000 (T)	551 fish (1988)	Sparling and Stewart (1988)
Prince Albert Sound			
1982	1,350 (T)	1,350	Yaremchuk et al. (1989)
1983	1,350 (T)	896	Yaremchuk et al. (1989)
1984	3,000 (C)		Yaremchuk et al. (1989)

Appendix II - Recent History of the Fisheries Monitoring and Management Decisions

1966-75	Kuujjua River and Tatik Lake harvest data collected (Lewis et al. 1989).
1966-75	Sport fishery occurred on Kuujjua River (<i>DFO unpublished</i>).
1978	Summer coastal harvest monitored (Lea et al. 2023b).
1979-91	Kuujjua River commercial quota available and fished some years (Bodaly et al. 1992; Cosens et al. 1993, 1998; Yaremchuk et al. 1989).
1982-84	Test or commercial fishery quota available for Prince Albert Sound and fished in 1982 and 1983 (Yaremchuk et al. 1989).
1983, 85	Kagloryuak River commercial quota fished (Yaremchuk et al. 1989).
1984	Holman joins the ISR, and gains hamlet status.
1984-87	Test fishery quotas available for Kagluk, Kuuk and Naloagyok rivers, and fished some years (Yaremchuk et al. 1989).
1984	IFA signed.
1985	Test fisheries conducted on Prince Albert Sound rivers (Stewart and Sparling 1987).
1986	Kuuk River test fishery (Baker 1986).
1987	Residents express concern about decline in size and abundance of Arctic Char in the Kuujjua River and Tatik Lake.
1987	Provisional harvest quotas established for Kuuk, Kagluk, Kagloryuak and Nalaogyok rivers (Stewart and Sparling 1987).
1987	Kuuk and Kagluk rivers biological assessments, tagging and commercial harvests (Stewart and Sparling 1987).
1988	Kagluk River biological assessment, tagging and commercial harvest (Sparling and Stewart 1988).
1988-97	Inuvialuit harvest study conducted (Joint Secretariat 2003).

1989	Naloagyok River biological assessment, tagging, and commercial harvest (Lemieux and Sparling 1989).
1990	Kagloryuak River biological assessment, tagging, and commercial harvest (Lemieux 1990).
1991	Holman town hall meeting emphasizes concern about the Tatik Lake and coastal fisheries.
1991	Annual community Arctic Char monitoring program begun for Tatik Lake winter fishery (Harwood et al. 2013).
1992-93	Kuujjua River biological assessment and tagging (Harwood et al. 2013).
1993-95	Tatik Lake fishery closed.
1993-97	Summer coastal fishery monitored (Lea et al. 2023a).
1996	Limited reopening of Tatik Lake fishery.
1996	Holman Char Working Group established.
1997	Community household survey on Arctic Char fishery conducted (Paylor et al. 1998).
1997	First Holman Char Fishing Plan completed (HCWG 1997).
2000	Two Stage I (Feasibility) community fishing licences issued for (i) coastal area and Kuuk River system, and (ii) Kagluk River system under DFO's New Emerging Fisheries Policy.
2001+	One Stage I (Feasibility) community fishing licence issued for the coastal area under DFO's New Emerging Fisheries Policy, and then issued annually until 2016.
2001	Holman Char Fishing Plan revised (HCWG 2001).
2004	Holman Char Fishing Plan revised (HCWG 2004).
2006	Holman becomes Uluhaktok.
2007	Olokhaktomiut Community Conservation Plan completed (Community of Uluhaktok et al. 2008).
2007	Uluhaktok Char Fishing Plan revised.

2008	Beaufort Sea Integrated Ocean Management Plan completed (Beaufort Sea Partnership 2009).
2011	Annual community Arctic Char monitoring program began for summer coastal fishery.
2014	Beaufort Sea Integrated Fisheries Management Framework completed (DFO et al. 2014).
2016	Research Advisory Process meeting held for Uluhaktok area Arctic Char (DFO 2016a, 2016b).
2016	Coastal commercial fishery moves from Stage I (Feasibility) to Stage II (Exploratory).
2016	Olokhaktomiut Community Conservation Plan updated (OHTC et al. 2016).
2020	Uluhaktok community unanimously decides to suspend commercial fishing activities for at least a 5-year period to reduce harvesting pressure on the Tatik Lake Arctic char population.

Appendix III - Jurisdictional and Co-Management Context

Organizations' Responsibilities

DFO, the FJMC, and the OHTC all have responsibilities for managing the Arctic Char populations and fisheries in Uluhaktok area. They work together closely to fulfil their responsibilities within the context of the Inuvialuit Final Agreement, the *Fisheries Act* and its regulations, and the *Oceans Act*. The *Species at Risk Act* (SARA) has not been applied to the Uluhaktok Arctic Char stocks at this time.

The *Fisheries Act* is applied to fisheries in the ISR primarily through its *Fishery (General) Regulations* and the *Northwest Territories Fishery Regulations*. Section 7 of the *Act* provides powers to issue new exploratory licences and commercial fishing licences, the *Fishery (General) Regulations* provides powers to issue variation orders and authorize experimental fisheries, and the *Northwest Territories Fishery Regulations* provide powers to manage commercial, Indigenous, domestic, and sport fisheries. The *Aboriginal Communal Fishing Licences Regulations* enables the Minister to issue a communal licence to an Indigenous organization to carry on fishing and related activities, and to specify any condition as per the *Fishery (General) Regulations*.

DFO incorporates precautionary and ecosystem-based approaches into fishery management decisions through the Sustainable Fisheries Framework (DFO Sustainable Fisheries Framework). Application of the Framework should ensure the continued health and productivity of Canada's fisheries and fish stocks, while protecting biodiversity and fish habitats. The Framework comprises four main elements: conservation and sustainable use policies; economic policies; governance policies and principles; and planning and monitoring tools.

DFO's New Emerging Fisheries Policy (DFO 2009a) guides the development of new commercial fisheries through three stages: Stage I – Feasibility; Stage II – Exploratory; and Stage III - Commercial. The Feasibility Stage determines if harvestable quantities of a species or stock exist, gear types, impacts, markets and next steps. The Exploratory Stage determines whether a species or stock can sustain a commercially viable operation and collects biological data. The Commercial Stage is reached if it is determined that the species or stock can sustain a commercial fishery operation. DFO has a data-collection protocol for exploratory Arctic Char fisheries in the NWT and Nunavut (DFO 2010).

Also relevant is DFO's Integrated Aboriginal Policy Framework. It provides guidance to DFO employees in building respectful and mutually beneficial relations with Indigenous groups. Its goals include enhancing involvement of Indigenous groups in fishery-management decision-making processes using a shared stewardship model, and continuing to manage fisheries consistent with the constitutional protection provided to Aboriginal and treaty rights by the *Constitution Act* and *Fisheries Act*. In 2002 DFO directed that any fishery development in the Beaufort Sea must involve proper and meaningful representation of the Inuvialuit, and that this representation or participation

could take the form of an arrangement or agreement between an Inuvialuit organization and a third party.

DFO issues a variety of fishing licences, including Commercial Licences and Licences to Fish for Scientific Purposes, protects fish habitat, conducts research on fish and fish habitat, and ensures compliance with the *Fisheries Act*.

The FJMC is a legislated public institution, and is the main instrument of fishery management in the ISR. Its fishery management responsibilities are outlined in the IFA. They are a mix of decision-making, operational, and advisory responsibilities. The FJMC makes recommendations to and advises the Minister of Fisheries and Oceans Canada. Its responsibilities include determining current harvest levels, determining the role of HTC in regulating subsistence harvests and collecting harvest statistics, making recommendations to the Minister on subsistence quotas for fish, Inuvialuit commercial fishing and regulation of sport and commercial fishing, and advising the Minister on regulations, research policies, and administration of fisheries in the ISR.

The OHTC has specific fishery-related responsibilities assigned to it under the IFA. These responsibilities include allocating harvests, advising the FJMC on harvesting, participating in the collection of harvest data and in research, setting by-laws on acceptable fishing gear and methods, reviewing and approving research proposals, participating in research and harvest studies, and encouraging and promoting involvement in conservation, research, monitoring, management, enforcement and use of fishery resources.

Many other organizations play roles in the overall management and protection of Ulukhaktok Arctic Char. These include other organizations, such as the Inuvialuit Game Council, created under the IFA, the Government of the Northwest Territories (GNWT), and other federal departments. Many of them are involved in environmental protection decisions; for instance, Environment and Climate Change Canada administers the pollution prevention provisions, except for sedimentation, of the *Fisheries Act*. The GNWT is responsible for the administration of sport fishing licences. All organizations are involved in co-management appropriate to their responsibilities and interests.

Adaptive Co-Management Process

Adaptive co-management is a process that permits stakeholders to share management responsibility and to learn from the results of their actions through multi-level feedback. It requires a shared common focus, a high degree of interaction, and involves multiple levels of shared responsibility. It focuses on: establishing clear decisions and rationales for proposed actions; implementing those decisions; documenting and evaluating the results on the fish stocks and fishery; and responding to the evaluation by confirming, modifying or changing decisions for future years (see Armitage et al. 2007; see Holling 1978). Decision-making incorporates precautionary and ecosystem-based approaches as defined by DFO, as well as fish habitat management requirements.

The adaptive co-management process enables DFO, the FJMC, and the OHTC to work closely together in fulfilling their responsibilities for managing the Ulukhaktok Arctic Char fishery and its Arctic Char populations. The process also involves the Ulukhaktok community and fishers, and other stakeholders as required.

Development of fishing plans, Integrated Fisheries Management Plans (IFMPs) and CFMPs in the ISR occurs through adaptive co-management led by the FJMC (see Ayles et al. 2007). The process usually begins with a specific issue, such as conservation or harvesting concerns, being identified by harvesters, a community, an HTC, DFO, or the FJMC. It involves establishing a working group (e.g., the UCWG) that assembles background information, proposes conservation requirements (e.g., harvest limits as appropriate), management objectives and strategies, and develops an operational plan. The draft plan is reviewed formally by all relevant stakeholders during all stages of development. These proposed management actions are presented in a community-based fishing plan, or possibly in a more formal CFMP or IFMP. The final version of the fishing plan, CFMP or IFMP is ratified by DFO, the FJMC, the appropriate HTCs, and others as required. The plan is implemented, and its effectiveness monitored.

Usually, the effectiveness of a fishing plan and new information are reviewed annually, and the plan is changed as necessary. The working group consults with stakeholders on any recommendations arising from the review. A steering committee may be established to provide direction to a working group and to approve changes to the plan.

Appendix IV - General Management Measures

General Harvesting Guidelines

Fishers will follow Uluhaktok's Subsistence and Commercial Harvesting General Guidelines (OHTC et al. 2016) in conducting their fisheries. The Guidelines include the following measures;

- Subsistence harvesting will take precedence over commercial harvesting.
- Subsistence and commercial harvesting will be done in a manner consistent with the Olokhaktomiut Community Conservation Plan, specific goals for each stock, and conservation measures. The conservation measures are: i) ensure harvest is sustainable, ii) do not take more than needed, and iii) identify and protect important habitats from disruptive land uses.
- Commercial harvesting will be undertaken in a manner developed cooperatively and endorsed by the FJMC.
- If a commercial quota is established and considered consistent with conservation, a percentage of the quota will be retained to preserve the opportunity for small scale operations.
- Harvests will be monitored monthly in order to provide information necessary for compensation resource conservation.
- Where fishing areas are closed to allow stocks to recover, the OHTC will work cooperatively with the FJMC to provide the community with alternate fish resources.
- The community will consider and support the use of alternate harvesting methods where there is a demonstrated need and benefit.

Legislated Requirements

Fishers will adhere to the requirements set out in legislation and included in the Holman Char Fishing Plan (HCWG 2001, 2004). These requirements include the following sections of the *Fisheries Act*, the *Northwest Territories Fishery Regulations* and the *Fishery (General) Regulations*.

- At least one third of a stream must be left open to allow fish to pass (*Fisheries Act* section 29(1)(b)).
- No person shall fish by snagging (*Northwest Territories Fishery Regulations* section 7(2)).
- Nets must be checked every 30 hours in the summer (16 May to 31 October) and every 72 hours in the winter (1 November to 15 May) (*Northwest Territories Fishery Regulations* section 9).
- No person shall dispose of dead fish or any remains or offal of fish by leaving it in the water or on ice over the water (*Northwest Territories Fishery Regulations* section 10(1)).
- All nets must have the name of the owner clearly marked (*Fishery (General) Regulations* section 27(1)).
- Fish that is suitable for food shall not be wasted (*Fishery (General) Regulations* section 34(3)).

Appendix V – Contact Information

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