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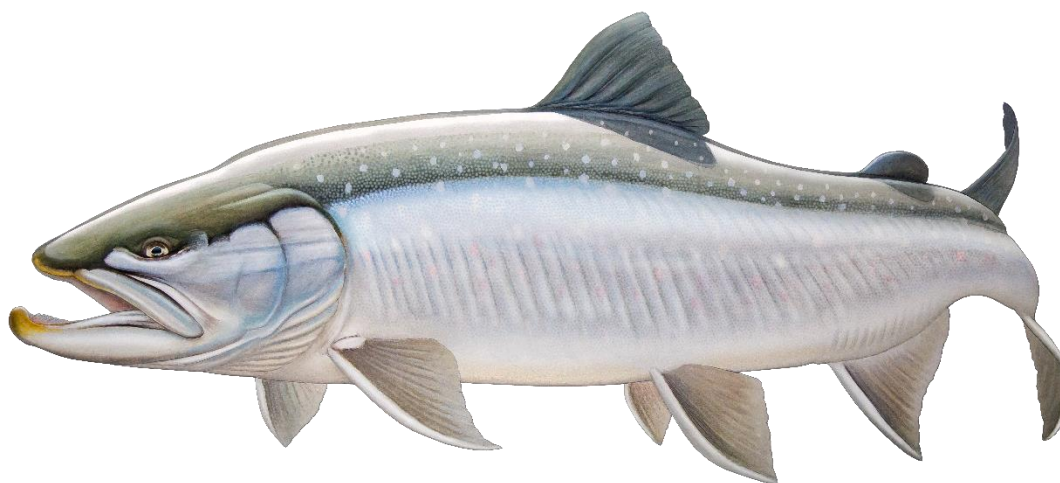
Gestion  
des pêches

# **Integrated Fisheries Management Plan Arctic Region Summary**

## **Cambridge Bay Arctic Char, *Salvelinus alpinus*, Commercial Fishery, Nunavut**

**Effective 2021**

**Arctic Char**  
(*Salvelinus alpinus*)



**Canada**

## Forward

The purpose of this updated Integrated Fisheries Management Plan (IFMP) summary is to provide a brief overview of the information found in the full IFMP for the Cambridge Bay Arctic Char (*Salvelinus alpinus*) commercial fishery. This document also serves to communicate basic information on the fishery and its management to Fisheries and Oceans Canada (DFO) staff, the Nunavut Wildlife Management Board (NWMB), Hunters and Trappers Organizations (HTOs), Regional Wildlife Organizations (RWOs), commercial fishers, communities and other stakeholders. The IFMP provides for more informed stakeholder input into management decisions, and promotes a common understanding of the “basic rules” for the sustainable management of the fisheries resource.

**This IFMP is not a legally binding instrument which can form the basis of a legal challenge. The IFMP can be modified at any time and does not fetter the Minister's discretionary powers set out in the *Fisheries Act*. The Minister can, for reasons of conservation, or for any other valid reasons, modify any provision of the IFMP in accordance with the powers granted pursuant to the *Fisheries Act*.**

Where DFO is responsible for implementing obligations under land claim agreements, the IFMP will be implemented in a manner consistent with these obligations. In the event that an IFMP is inconsistent with obligations under land claim agreements, the provisions of the land claim agreements will prevail to the extent of the inconsistency.

Gabriel Nirlungnayuq, Regional Director General, Arctic Region  
Fisheries and Oceans Canada

## IFMP SUMMARY

*Figures, tables and appendices that are referenced below are included in the full IFMP.*

### 1. OVERVIEW OF THE FISHERY

The Arctic Char commercial fishery addressed by this Integrated Fisheries Management Plan (IFMP) occurs on Victoria Island, near the Community of Ekaluktutiak, also known as Cambridge Bay. The Community of Cambridge Bay is located on the south shore of Victoria Island in the Canadian Arctic Archipelago. Cambridge Bay is the largest community in the Kitikmeot Region (Figure 1). Commercial fishing typically takes place at or near the mouth of the Ekalluktok (Ekalluk), Paliryuak (Surrey), Halokvik (Thirty-Mile), Paalik (Lauchlan) and Jayko (Jayco) rivers (**Error! Reference source not found.**) targeting either downstream (spring) or upstream (fall) migrants. Historical development of the Cambridge Bay Arctic Char commercial fishery is outlined in the full IFMP. Recent commercial landing are reported in Appendix B of the full IFMP.

The commercial fishery, which is the focus of this IFMP, is conducted by local Inuit fishers in conjunction with the operational support of Kitikmeot Foods Ltd., the commercial processing plant in Cambridge Bay. Kitikmeot Foods Ltd. currently employs approximately 28 local residents and beneficiaries, including management, seasonal processors and commercial fishers. Arctic Char are typically harvested by gillnet at or near the mouths of the rivers when fish are migrating downstream to marine waters in July, locally known as a spring fishery (Lauchlan and Surrey rivers), or via either gillnets or weir while returning to freshwater in mid-August through mid-September, locally known as the fall fishery (Halokvik, Ekalluk and Jayko rivers). Where conditions are favourable (there is a shallow narrowing in the river), a weir is the preferred method of harvesting. Arctic Char are dressed in the field (i.e., viscera and gills are removed) and washed before being packed on ice in tubs. Float planes are contracted by Kitikmeot Foods Ltd. to transport fish from each location to Cambridge Bay, where they are offloaded at the dock and transported directly to the plant for immediate processing. As fish arrive at the plant, each tub is weighed separately and details related to fish quality and quantity are recorded.

#### Governance of the Fishery

The Cambridge Bay Arctic Char commercial fishery is co-managed by the Nunavut Wildlife Management Board (NWMB), Ekaluktutiak Hunters and Trappers Organization (EHTO), and Fisheries and Oceans Canada (DFO), in accordance with the Nunavut Agreement (NA), the *Fisheries Act* and its regulations. The Cambridge Bay Arctic Char commercial fishery is regulated by the *Fisheries Act* (R.S., 1985, c. F-14) and regulations made pursuant to it, including the *Fishery (General) Regulations* and the *Northwest Territories Fishery Regulations*. Where an inconsistency exists between these statutes and the Nunavut Land Claims Agreement, the Agreement shall prevail to the extent of the inconsistency.

DFO has adopted a Sustainable Fisheries Framework (SFF) for all Canadian fisheries to ensure that objectives for long-term sustainability, economic prosperity, and improved governance for Canadian fisheries are met. The Cambridge Bay commercial fishery has been added to the United States National Oceanic and Atmospheric Administration's (NOAA) List Of Foreign Fisheries (LOFF) to adhere to international regulations implementing the Marine Mammal Protection Act and import provisions.

This IFMP has been developed as an evergreen document, meaning that it is written in such a way as to be relevant over a long period of time, with no fixed end date. Through regular reviews (see Section 9 of IFMP) by the IFMP Working Group and stakeholders, updates and amendments will be provided to the NWMB and Minister of Fisheries and Oceans for approval, as required.

## **2. SCIENCE, TRADITIONAL ECOLOGICAL KNOWLEDGE AND STOCK ASSESSMENT**

### **Stock Science**

Arctic Char, *Salvelinus alpinus* (L.) are distributed throughout the Canadian Arctic including the islands of the Arctic Archipelago (McPhail & Lindsey, 1970; Scott & Crossman, 1973), and occur as both non-anadromous (lake-resident or land-locked) and anadromous (i.e., searun) forms (Johnson, 1980; Jonsson & Jonsson, 2001; Loewen et al., 2009). Feeding takes place in near-shore, shallow areas primarily in estuaries for around 30-45 days, although as little as six days has been documented (Dutil, 1986; Gyselman 1994; Moore, et al., 2016). ). Feeding is primarily surface oriented although foraging dives of more than 30 m have been recorded (Harris, et al., 2020). Although estuaries are clearly important for summer foraging while at sea (Harris, et al., 2020), some long distance marine migrations have been recorded (e.g.,  $\geq 100$ -400 km, Gyselman 1994; Dempson & Kristofferson, 1987; Moore, et al., 2016). The Cambridge Bay commercial fishery targets downstream, or spring, migrations (July) associated with feeding and upstream, or fall, migrations (mid to late August and early September) associated with the return to spawning or over-wintering habitats.

Spawning takes place in fresh water in the fall, usually late-September or early-October, over gravel beds. In the Cambridge Bay area in particular, spawning takes place in lakes, because most rivers freeze completely in winter. The almost complete absence of spawners in the fall upstream migrations suggests that they do not, for the most part, go to sea the summer prior to spawning

### **Traditional Knowledge and Inuit Qaujimajatuqangit**

The Cambridge Bay area has been a place of significant fishing activity for centuries. The Inuit of Cambridge Bay have accumulated a great deal of historical ecological and environmental expertise that provided a basis for their survival as it related to food sources and signs of decline

in a given area. In particular, the Ekalluktok (Ekalluk River) has a well-documented history of the traditional ecological knowledge (TEK) of the Iqaluktuirmiut, the group of Inuit families who occupied the area for thousands of years.

Inuit knowledge and Inuit Qaujimajatuqangit (IQ) continues to be an important means of managing the fishery, and is used with scientific knowledge for effective fisheries decision-making and in the development of scientific research and fishery management plans. TEK has contributed to the information needed to support an updated stock status of the Cambridge Bay Arctic Char commercial fishery. This IFMP, including management measures and best practices related to the use of fishing gear and release of spawning Arctic Char, has been developed in consultation with the community by the Cambridge Bay Arctic Char Working Group.

### **Stock Assessment**

A complete stock status assessment of Cambridge Bay Arctic Char was completed by Day & Harris (2013); This assessment concluded that all of the primary stock complexes, with the exception of the Ellice River, were considered to have a low level of risk of overexploitation given the harvest strategies at the time. Recently, an assessment of the Halokvik (Thirty-Mile River) and Jayko (Jayco River) concluded that both fisheries would be considered near the boundary of the healthy and cautious zone and that there is likely a moderate risk to these populations if harvest remains the same.

The Cambridge Bay commercial fishery for Arctic char is considered a data-poor fishery which presents a number of challenges and uncertainties for formal stock. A multi-year stock assessment plan has been developed by DFO, in consultation with resource users and co-management organizations, for the Cambridge Bay Arctic Char commercial fishery in order to address this data-poor concern.

## **3. SOCIAL, CULTURAL AND ECONOMIC IMPORTANCE OF THE FISHERY**

### **Social and Cultural**

Arctic Char is very important to the social connection, cultural definition and food requirements of Inuit across Canada. Cambridge Bay is also known as Ekaluktutuak, which in Inuinnaqtun translates to “Good Fishing Place” and reflects the strong historical and cultural connection the people share with Arctic Char. Arctic Char play an important role in the nutrition and social culture of the community – fostering the continuation of traditional culture and lifestyles, provision of traditional foods, and local self-sufficiency.

The commercial harvest of Arctic Char supports important social and cultural values of family, sharing and community that have been passed down through generations of fishers. Presently, Kitikmeot Foods Ltd. employs around 28 local residents and beneficiaries in support of the Arctic Char commercial fishery on an annual basis. The commercial fishery maximizes local employment opportunities, thus allowing fishers to live and work in Cambridge Bay and

contribute to the local economy while continuing to carry forward skills from a more traditional way of life.

### **Economic Importance**

The economic contribution of the Cambridge Bay Arctic Char commercial fishery is significant for both the local economy and the Territory. In 2015, the total Arctic Char commercial harvest in Nunavut was estimated at 72,574 kgs with an estimated landed value of \$1,800,000 (2016 GN Fisheries Strategy). Cambridge Bay contributed 37,765 kgs (52%) of that total harvest, with an estimated market value contribution of \$855,363.<sup>1</sup> More recently, in 2019 the Cambridge Bay commercial fishery harvested 99% of the targeted quotas (48,493 Kg), totalling 48,097 Kgs.

**Ocean Wise** seafood is a conservation program that makes it easy for consumers to choose sustainable seafood distributors and restaurants for the long term health and sustainability of Canada's fisheries. The four criteria to become Ocean Wise certified are: (1) Fisheries abundant and resilient to fishing pressures, (2) well managed with a comprehensive management plan based on current research, (3) harvested in a method that ensures limited bycatch on non-target and endangered species, and (4) harvested in ways that limit damage to marine or aquatic habitats and negative interactions with other species.

As Arctic Char total sales and market opportunities grow, operational costs too continue to increase. Kitikmeot Foods Ltd. has had to rely heavily on freight subsidies from the Nunavut Development Corporation on an on-going basis to offset high transportation costs incurred to bring Arctic Char from fishing sites to the plant and onto various domestic and international markets. Over the 5-year period of 2014-2018, Kitikmeot Foods Ltd. experienced an increase in transportation related costs annually, from 20% of overall operating expenditures in 2014 to 27% in 2018.

## **4. MANAGEMENT ISSUES**

The priority management issues include the need for updated stock abundance estimates to support management decisions, timely harvest reporting and consistent reporting of bycatch and catch and effort information in support of sustainable harvest levels, and ensuring the long-term viability and prosperity of the commercial fishery.

### **Stock Abundance Estimates**

Comprehensive up-to-date abundance (or biomass) estimates and stock assessments are still required for several of the stocks of commercially harvested Arctic Char. Traditional scientific approaches for stock assessments and abundance estimates for setting sustainable harvest levels may be impractical in terms of cost, feasibility and applicability at all river systems. Given this fishery is still considered data-poor, to support standard stock assessment, both fishery-dependent (those data collected directly from the commercial fishery) and fishery-independent data (those collected independent of the commercial fishery) are required. Long-term monitoring, designed to estimate annual CPUE of harvests and report bycatch and discards in the

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<sup>1</sup> See Appendix D: Economic Analysis for details.

fishery, will contribute to an improved understanding of abundance and species interactions, necessary for the sustainable and ecosystem-based management of Arctic Char in Cambridge Bay.

### **Harvest Reporting**

Timely, accurate reporting of all catches and the effort exerted to harvest these catches from each of the commercial waterbodies is essential. Commercial harvesting needs to remain within regulated harvest levels, and the timeliness of reporting allows managers to assess the harvest as limits are approached. Recent initiatives have resulted in daily reporting of commercial landings through the processing plant. In addition, a shared stewardship monitoring program involving the EHTO, Kitikmeot Foods Ltd. and DFO has been funded through the Nunavut General Monitoring Plan ran from 2011-2017. All commercial fisheries are currently monitored for total removals, including commercial landings, bycatch and discards, and personal consumption as required by recently updated commercial license conditions.

### **Economic Viability of the Fishery**

Rising transportation costs are impacting the economic feasibility of commercially fishing at some of the more distant river systems, and limit consideration of establishing new commercial fisheries at other distant fishery locations. Regional and territorial co-management organizations continue to promote economic viability while ensuring stocks remain healthy and abundant.

## **5. Objectives**

Objectives for the Cambridge Bay Arctic Char commercial fishery are a key component of the IFMP. Long term objectives guide the management of the fishery and may be categorized as stock conservation, ecosystem, shared stewardship, and social, cultural and economic objectives. Each long term objective is supported by one or more short term objectives to address existing management issues in the fishery. The objectives listed in Table 1 were developed by the IFMP Working Group and other stakeholders.

**Table 1. Long-term and short-term objectives for the Cambridge Bay Arctic Char commercial fishery.**

<b>Long-term Objectives</b>	<b>Short-term Objectives</b>
<b><i>Stock Conservation</i></b>	
Conserve Arctic Char stocks through sustainable use and effective fishery management	<ul style="list-style-type: none"> <li>• Update stock assessment information and advice on sustainable harvest levels for each commercial waterbody</li> <li>• Improve knowledge of Arctic Char biology, ecology and stock discrimination</li> <li>• Improve the timeliness and accuracy of harvest and CPUE reporting in commercial, recreational and food</li> </ul>

Long-term Objectives	Short-term Objectives
	<p>fisheries to monitor total removals of arctic Char and bycatch.</p> <ul style="list-style-type: none"> <li>• Encourage conservation and responsible fishing practices for Arctic Char.</li> <li>• Given uncertainties related to the abundance of Arctic Char stocks in the Cambridge Bay area, continue to harvest at conservative levels using PA framework.</li> </ul>
<b><i>Ecosystem</i></b>	
Conserve bycatch species through effective fishery management.	<ul style="list-style-type: none"> <li>• Improve the accuracy and completeness of reporting bycatch to improve understanding of species interactions and management.</li> </ul>
<b><i>Shared Stewardship</i></b>	
Promote collaboration, participatory decision making, and shared responsibility with resource users, co-management organizations and other stakeholders.	<ul style="list-style-type: none"> <li>• Conduct post-season fishery meetings and IFMP Working Group meetings on an annual basis.</li> <li>• Continue to engage local participation in co-management activities at every opportunity.</li> <li>• Promote the responsibility of commercial fishers to monitor and report, as per licence conditions.</li> <li>• Secure funding for monitoring programs for commercial, recreational and food fisheries.</li> </ul>
<b><i>Social, Cultural and Economic</i></b>	
Promote an economically viable and self-sufficient fishery based on high quality that maximizes social and economic benefits, while ensuring stocks remain healthy and abundant for future generations.	<ul style="list-style-type: none"> <li>• Support initiatives to optimize community-based processing and employment capacity.</li> <li>• Support strategies to increase feasibility of commercial operations at more distant river systems and other fishery locations.</li> <li>• Maintain and conserve local and traditional fishing activities and areas.</li> <li>• Promote collaboration among co-management organizations associated with economic development throughout Nunavut.</li> </ul>

Long-term Objectives	Short-term Objectives
<b>Compliance</b>	
Promote compliance with legislation, regulations and management measures to achieve conservation and sustainable use.	<ul style="list-style-type: none"> <li>• Ensure commercial licence conditions are updated regularly, to reflect requirements related to the sustainable management of the fishery. Promote compliance through education and shared stewardship. Work collaboratively with local and territorial wildlife officers.</li> <li>• Promote compliance through regular monitoring and surveillance activities, and increased presence in the community.</li> </ul>

## 6. Access and Allocation

Commercial quotas are established for each water body, as set out in Schedule V of the *NWT Fishery Regulations*. All waterbodies have a competitive quota; in other words, all fishers licensed to commercially fish a given waterbody collectively fish against the total quota for that waterbody. There are no individual quota allocations associated with the commercial fishery. The commercial fishery is opened annually through a Variation Order, and closed by a Notice of Closure when the quota is met. Commercial fishing licences are issued to fishers under Section 7 of the *Fisheries Act*.

After the addition of Lauchlan River (Byron Bay) in 2018, targeted reduced quotas were set for Ekalluk and Jayko Rivers to offset the increased landings expected from Lauchlan River. These targeted reduced quotas may vary each year depending on demand as the fish plant operates at full capacity with the current total quota and does not have the required storage space to accept more Arctic Char. The reduced targeted quotas are typically applied to the fall fisheries, improving the balance of the spring-fall harvest distribution, and additionally affords fishers and float planes to leave Jayko sooner, before ice and weather conditions become a safety concern later in September.

Table 1 displays current legal quotas for the commercial fishery in both round weight kilograms (the appropriate product form and unit of measure of quota allocation, as set out in Schedule V) and dressed weight pounds (form and unit of measure used to record landings)

**Table 1. Legal quotas for the Cambridge Bay Arctic Char commercial fishery.**

Location	Legal Quota (Kg, Round Weight)	Converted Legal Quota (Lbs, Dressed Weight)
Ekalluktok (Ekalluk) River	20,000	36,744

Halokvik (Thirty-Mile) River	5,000	9,186
Jayko (Jayco) River	17,000	31,232
Paliryuak (Surrey) River	9,100	16,718
Paalik (Lauchlan) River	9,100	16,718
<b>Grand Total</b>	<b>60,200 Kgs.</b>	<b>110,598 Lbs.</b>

## 7. Management Measures

Management measures outline the controls or rules adopted for the fishery, including stock conservation and sustainable management measures. Management measures for the Cambridge Bay Arctic Char commercial fishery include controls related to quota, openings and notices of closure for fisheries; licensing and conditions of licence, including reporting requirements of bycatch, discards, marine mammal interactions and found/lost gear through the use of commercial logbooks. These measures are based on the *Fisheries Act* and its regulations, the NA, DFO policies, and measures agreed upon by the IFMP Working Group, in support of sustainable fisheries management. In addition, these measures are aided by the shared stewardship arrangements and best practices in place for the Cambridge Bay Arctic Char commercial fishery (see Section 8). Appendix C provides an overview of the management measures currently in place.

Commercial fishing licenses are issued annually in accordance with Section 7 of the *Fisheries Act*. Commercial fishers are responsible for reporting landings, in accordance with the *Fishery (General) Regulations* and *NWT Fishery Regulations* and as outlined in the management measures of this plan. In support of this measure, commercial logbooks are available from the EHTO, GN Conservation Office, or Kitikmeot Foods Ltd. Supplemental License Conditions for Commercial fishers require the use logbooks to record all commercial landings, fishing effort, any Arctic Char discarded or kept for personal consumption, ghost gear reporting, seabird and marine mammal interactions, and all other fish bycatch encountered in the commercial fishery. Logbooks are submitted to the local wildlife office or fish plant and returned to DFO at the end of the season. To support real time harvest reporting and quota monitoring, daily records of landings for each commercial waterbody are kept by Kitikmeot Foods Ltd. and are reported daily to DFO.

## 8. Shared Stewardship

The IFMP for the Cambridge Bay Arctic Char commercial fishery was initiated and developed by the Cambridge Bay Arctic Char Working Group in 2010. Participation on the Working Group includes representatives from the EHTO (co-Chair), Kitikmeot Foods Ltd., commercial fishers, community elders, Department of Environment – Fisheries and Sealing Division, and DFO. Youth from the local high school are encouraged to actively participate as a sitting member of the Working Group. A letter of support from the NWMB was received by the Working Group in 2011 expressing support for the initiative of the Working Group and development of a management plan.

Best management practices, initiated by co-management organizations through the IFMP Working Group, are included in the IFMP. In support of the long-term health of Arctic Char stocks and sustainability of the fishery, it is important to reduce any potential impact to the spawning population. When spawners are captured in the gillnet fishery, and where they are alive, all spawning Arctic Char should be released where they were taken, in a manner that causes them the least harm. When encountered in a weir fishery, all spawning Arctic Char should be released unharmed. These best management practices are currently in place in the commercial fishery. The weir is the preferred method for the subsistence and commercial collection of Arctic Char at Jayko River. The usage of a weir causes fish less stress and allows for quotas to be filled more quickly, reduces bycatch, animal interactions and lost gear potential.

A five (5) year review of the IFMP was conducted in 2019/2020 and forms the basis of this updated version of the IFMP.

## **9. Compliance Plan**

The DFO Conservation & Protection program promotes compliance with legislation, regulations and management measures implemented to achieve the conservation and sustainable use of Canada's aquatic resources. DFO Fishery Officers are responsible for compliance activities related to the Cambridge Bay Arctic Char commercial fishery. Fishery Officers conduct surveillance activities, and are supported by Regional DFO staff that provide assistance with monitoring, reporting, education and shared stewardship.

DFO Fishery Officers participate in fishery review meetings where compliance issues are presented and recommendations requested for resolution. As well, informal meetings continue on an ad hoc basis to resolve in-season matters. Fishery Officers discuss fisheries conservation and shared stewardship during visits to Cambridge Bay and interact with community resource users, fishers and processors.

## **10. IFMP Performance Review**

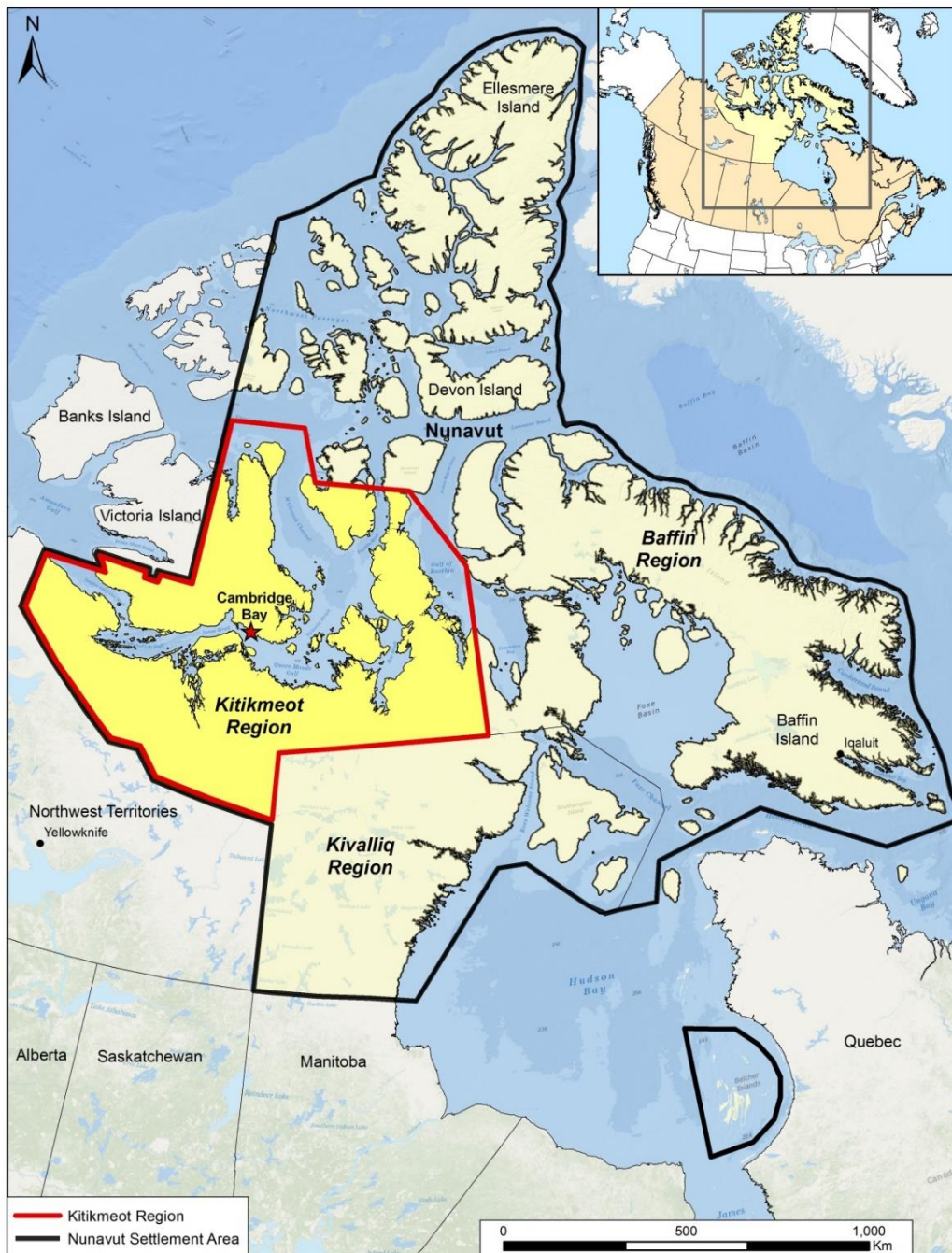
This IFMP was developed through a consultative process including resource users, co-management organizations, and stakeholders.

Commercially fished Arctic Char stocks in the Cambridge Bay area will continue to be assessed through shared stewardship with resource users, and multi-year stock assessments that aim to provide scientific advice. Monitoring of the fishery will be accomplished using several tools including daily reporting of landings, quota monitoring, fishery-dependent (plant) sampling, logbooks, and surveillance.

Post season reviews will be conducted on a regular basis with stakeholders and the IFMP Working Group. Progress on achieving the short term objectives and effective implementation of management measures identified in this Management Plan will be reviewed.

Recommendations to improve management of the Cambridge Bay Arctic Char commercial fishery will be developed to meet the long term objectives of maintaining a sustainable fishery.

**Figure 1. Map of the Nunavut Settlement Area with the Kitikmeot Region and the community of Cambridge Bay.**



**Figure 2: Map of Cambridge Bay area showing current commercial fishing locations.**

