

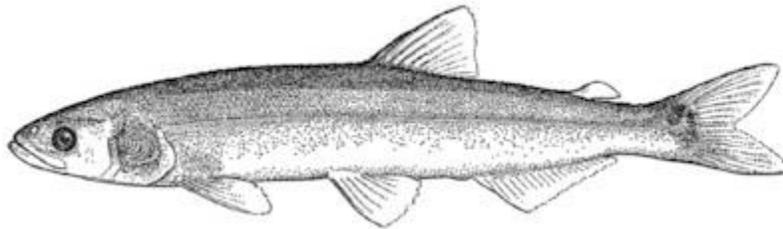


Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

## **Integrated Fisheries Management Plan Summary**

### **Fraser River Eulachon (*Thaleichthys pacificus*)** **Pacific Region** **2020**



The purpose of this Integrated Fisheries Management Plan (IFMP) is to identify the main objectives and requirements for the eulachon fishery in the Fraser River, as well as the management measures that will be used to achieve these objectives. This document also serves to communicate the basic information on the fishery and its management to Fisheries and Oceans Canada (DFO) staff, legislated co-management boards and other stakeholders. This IFMP provides 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 claims 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 claims agreements, the provisions of the land claims agreements will prevail to the extent of the inconsistency.

## **OVERVIEW (Section 1)**

### **Introduction**

This Integrated Fisheries Management Plan (IFMP) for Fraser River Eulachon covers the period from January 1, 2020 to December 31, 2020. IFMPs for eulachon in other areas are not available.

The IFMP provides a history and a broad context to the management of the Fraser River Eulachon stock and describes broader issues related to conservation. Given the short life cycle of this species, and consecutive poor returns, there are conservation concerns with Fraser River Eulachon, resulting minimal harvest for food, social and ceremonial (FSC) purposes and fishery closures for the commercial and recreational fisheries. Long term closures are required to allow for stock rebuilding.

### **History**

Eulachon have historically been and continue to be important to First Nations who harvest them for FSC purposes. Eulachon are eaten fresh, or often smoked, dried, salted or made into grease. Eulachon grease is an important First Nations food source and is widely bartered among Indigenous communities and is given as gifts in potlatch ceremonies. It is used in many traditional foods, to preserve fruit, as medicine and even to lubricate tools.

There was a minor recreational fishery for Eulachon in the Fraser River in the past; however, it has been closed since 2005.

Commercial harvest of Eulachon on the Fraser River began in the 1870s. From 1903 to 1912, the Fraser River Eulachon fishery was the fifth largest commercial fishery in BC (Stacey, 1995). More recently, annual catches of Eulachon in the Fraser River from the 1980s to the mid-1990s averaged approximately 20 tonnes per year and peaked in 1996 with an estimated catch of at least 63 tonnes. Due to increasing catch and effort and low levels of abundance, the commercial fishery was closed in 1997, and since then has only be opened twice: in 2002 and 2004.

### **Type of Fishery and Participants**

Harvest by First Nations for FSC purposes is authorized in the lower Fraser River through communal licences. First Nations apply for separate communal licences for Eulachon that are issued on a case by case basis. Fishing is primarily by drift net (e.g. gillnet). The use of dip nets or eulachon rakes may be authorized as gear types in traditional fishing areas upon request.

The recreational fishery for Eulachon remains closed. The commercial Eulachon fishery also remains closed.

## **STOCK ASSESSMENT, SCIENCE & TRADITIONAL KNOWLEDGE (Section 2)**

### **Biological Synopsis**

Within BC, there are 25 confirmed Eulachon spawning rivers and an additional 15 potential spawning rivers based on anecdotal information. Eulachon spawning is limited to the lower

reaches of rivers. Spawning typically begins in April or May on the Fraser River. First Nations in the area have noted that runs may begin as early as February or March.

Eulachon are anadromous. Once hatched, larvae are rapidly flushed to estuarine or marine waters. They live at sea for approximately three years before returning to natal rivers for spawning. Large post-spawning mortalities occur as Eulachon die after spawning. Adults reach a length of 15 to 20 cm and weigh between 40 and 60 grams.

Eulachon populations coast-wide have experienced a sharp downward trend with populations on some river systems becoming nearly extirpated or severely depleted. The Fraser River population has been at extremely low levels since the mid-2000s.

The most recent scientific information on the biology, distribution and fishery data of Eulachon were compiled in the *Recovery Potential Assessment for Eulachon – Fraser River Designatable Unit* (DFO, 2015), and the *Recovery Potential Assessment of Eulachon (Thaleichthys pacificus) in Canada* (Schweigert et al. 2012). These documents are available online at [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2015/2015\\_002-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/SAR-AS/2015/2015_002-eng.html) and [http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2012/2012\\_098-eng.html](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2012/2012_098-eng.html) respectively.

### **Ecosystem Interactions**

Eulachon are prey for many species of fish, marine mammals and birds. In-river predators include white sturgeon, Steller sea lions, harbour seals and eagles. Salmon and Dolly Varden trout have also been reported to feed on eulachon eggs or larvae. Marine predators include dogfish, pacific cod, hake, salmon, pollock, halibut, rockfish and many other species of fish, marine mammals and birds.

Juvenile eulachon and larvae stomach contents have been found to include phytoplankton, copepod eggs, copepods, mysids, ostracods and barnacle larvae. Limited samples from offshore Eulachon suggest that the euphausiid *Thysanoessa spinifera* is their main prey along with other euphausiids, fish and invertebrates.

At this time there is no information available on the appropriate conservation limits for Eulachon based on ecosystem considerations. Research is ongoing to better understand these ecosystem processes and the role Eulachon play in maintaining the integrity and functioning of the ecosystem.

## **Aboriginal Traditional Knowledge (ATK) & Traditional Ecological Knowledge (TEK)**

ATK has been incorporated into the Recovery Potential Assessment that will be used to aid in informing the SARA listing decision and is also considered in management decisions.

TEK in the form of observations and comments collected from commercial fishery participants, fisheries officers, and resource managers over many years contributes to decisions on scientific survey locations and is considered in management decisions.

## **Stock Assessment**

There is limited biological information available to guide management decisions regarding Fraser River Eulachon. A 2003 Canadian Scientific Advisory Secretariat (CSAS) research document (2003/051) identified four indicators and ‘response’ points that could be used for management of Fraser River eulachon. The indicators consist of the Spawning Stock Biomass (SSB) Index, Offshore Biomass Index (last calculated in 2012), same year Columbia River catches, and the New Westminster test fishery (last conducted in 2005). This provided for potential options for opening the commercial fishery if all indicators were positive, closing the fishery if all fisheries were negative, or considering partial fisheries if the indicators were mixed.

For more details, see the 2003 CSAS research document at

[http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2003/2003\\_051-eng.htm](http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ResDocs-DocRech/2003/2003_051-eng.htm).

Given the low abundance of Fraser Eulachon, the closure of commercial and recreational fisheries, and the discontinuation of some of these suggested indicators, additional data sources may also be considered for assessing Fraser Eulachon. These additional data sources include offshore Eulachon length-frequency data, data on ocean conditions, and genetic data.

## **Precautionary Approach**

In general, the precautionary approach in fisheries management is about implementation of a cautious approach when scientific knowledge is uncertain, and not using the absence of adequate scientific information as a reason to postpone or fail to take action to avoid serious harm to fish stocks or their ecosystem. This approach is widely accepted as an essential part of sustainable fisheries management. Information on DFO’s precautionary approach and the decision-making framework is available at

<http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/fish-ren-peche/sff-cpd/precaution-eng.htm>.

Reference points and harvest control rules as outlined in the decision-making framework for the precautionary approach have not been formally developed and evaluated for this fishery. DFO is evaluating the available data and methods in order to move towards abundance-based methods for setting annual harvest levels. The decline of the species and limited or lack of recovery in river systems coast wide is an ongoing concern. Maintaining harvest at low levels should increase the probability of rebuilding Fraser River Eulachon stocks. The Department continues to take an approach to managing the fishery that emphasizes conservation and sustainable use.

## **MANAGEMENT ISSUES (Section 3)**

## **Limited biological information**

At present, there is limited biological information available for Fraser River Eulachon. The original biological indicators described in the Hay et al. 2003 paper and the reference points used for the management of Fraser River Eulachon were developed over ten years ago and were based on a short time series. DFO is evaluating the available data and methods in order to move towards abundance-based methods for setting annual harvest levels. In addition, the RPA (Schweigert et al. 2012) identifies several gaps in our knowledge of Eulachon biology and ecology, including limited information on ages, growth rates and mortality.

## **Food, Social and Ceremonial Access**

First Nations in the Lower Fraser Area have expressed the concern that their needs are not being met by their current level of access to Eulachon for FSC purposes. A review of the current FSC harvest level and the development of an abundance-based approach to determine harvest levels for future years have been requested by First Nations.

## **Bycatch in Other Fisheries**

Fraser River Eulachon are incidentally caught throughout BC in both shrimp trawl and groundfish trawl fisheries. The Department has been working with the shrimp trawl industry to minimize Eulachon bycatch. Management measures have been implemented in the West Coast Vancouver Island shrimp trawl fishery and the groundfish trawl fishery to monitor and mitigate impacts of incidental catch of Eulachon. For more details see the full plan.

## ***Species at Risk Act (SARA)***

With the implementation of SARA, the Committee on the Status of Endangered Wildlife Species Assessments (COSEWIC) has been established as an independent body of experts responsible for identifying and assessing wildlife species considered being at risk.

In May 2011, COSEWIC assessed Eulachon in BC as three populations based on their criteria for discreteness and evolutionary significance; both the Fraser River and Central Pacific Coast populations were assessed as Endangered, and the Nass/Skeena population unit was originally assessed as 'Threatened', but it was reassessed in 2013 as 'Special Concern' based on new information.

The *COSEWIC Status and Assessment of Eulachon (Thaleichthys pacificus) In Canada* can be found at [http://publications.gc.ca/collections/collection\\_2012/ec/CW69-14-638-2011-eng.pdf](http://publications.gc.ca/collections/collection_2012/ec/CW69-14-638-2011-eng.pdf).

The SARA listing decision will consider best available scientific advice (e.g. the 2015 and 2012 Recovery Potential Assessments, and the 2011 COSEWIC Assessment), management scenarios developed in 2014, Socio-Economic Analysis completed in 2016, and consultations with First Nations, affected stakeholders and the Canadian public conducted between 2012 and 2016. The final listing decision has not been made at this time.

## **OBJECTIVES (Section 4)**

The overall goal of Fisheries Management in the Pacific Region is the conservation of Canada's fisheries resources to ensure sustainable resource utilization and generate economic prosperity, accomplished through close collaboration with resource users and stakeholders based on shared stewardship consistent with treaty and Aboriginal rights.

The objective of the current Eulachon fishery is to respond to conservation concerns with Fraser River Eulachon stocks and introduce measures to allow for stock rebuilding. Specific objectives and performance measures are detailed in the IFMP and associated appendices.

A coast-wide recovery target for Eulachon is, at a minimum, to "promote the populations' recovery such that it can qualify as special concern within the COSEWIC assessment criteria", with an interim goal of observing "positive growth in Eulachon spawning in river systems throughout" the designatable unit ranges, and a long term goal of seeing the populations reach historic levels (Schweigert et al. 2012).

For the Fraser River population, COSEWIC assessed this population as endangered based on an observed population decline of greater than 50% over three generations (approximately 10 years for Eulachon). Recovery for Fraser River eulachon "should be reflected in an increase in this index to historical levels." The first goal "would be a population increase that would exceed COSEWIC's criteria for endangered status, and bring the assessment down to a species of special concern," and "additional rebuilding would be required to bring the Fraser River [designatable unit] to a point where it was not at risk based on COSEWIC criteria." In addition, "distribution targets for the population would include an expansion of sustained spawning ranging to the historical extent" (Schweigert et al. 2012).

To ensure conservation and protection of Eulachon stocks and their habitat management DFO will take a precautionary approach using the best scientific advice available.

Subject to conservation needs, first priority is given to First Nations in the form of limited Food Social and Ceremonial (FSC) harvest opportunities.

Conduct an open and transparent consultation process for discussions of harvest management issues related to Eulachon harvest.

Subject to conservation needs, first priority is accorded to First Nations for opportunities to harvest Eulachon for food, social and ceremonial purposes. Feedback from consultations sessions is relied on to measure the performance of providing priority to First Nations for opportunities to catch fish for food, social and ceremonial purposes. Limited harvest opportunities will provide access to First Nations for FSC purposes while meeting conservation objectives. Maintaining harvest at low levels will increase the probability of rebuilding Fraser River Eulachon stocks. The Department will manage Fraser Eulachon fisheries conservatively in 2020.

## **ACCESS AND ALLOCATIONS (Section 5)**

The Minister can, for reasons of conservation or for any other valid reasons, modify access, allocations and sharing arrangements outlined in this IFMP in accordance with the powers granted pursuant to the *Fisheries Act*.

Aboriginal harvest of Eulachon for FSC purposes may occur where authorized by a communal licence. The Department will provide First Nations with priority access to the resource for FSC purposes. FSC quotas may be determined through bilateral discussions between First Nations and the Department.

Recreational harvest of eulachon is closed coast wide. The commercial fishery has been closed since 2004; however, 16 party-based ZU licence eligibilities remain.

### **SHARED STEWARDSHIP AGREEMENTS (Section 6)**

In the past, some co-operative work has been done coast-wide, including donations of time, money, vessels, gear, samples, and offshore surveys. These measures have all contributed to our knowledge about Eulachon in the Pacific Region. The First Nations and stakeholders have provided assistance in spawner distribution and the in-season test fisheries. Also, the commercial shrimp trawl industry provided survey assistance for the offshore index (WCVI and Queen Charlotte Sound).

The Department's AFS has provided funds to assist in the spawner distribution work and the egg and larval surveys including the egg and larval survey that provides the annual SSB estimate for the Fraser River area.

### **COMPLIANCE PLAN (Section 7)**

DFO's Conservation and Protection (C & P) program is responsible for enforcing the *Fisheries Act* and pursuant regulations and related legislation. Enforcement activities are carried out by Fishery Officers across Canada who conduct patrols on land, at sea and in the air.

The Department promotes compliance with the law through a range of activities from education and awareness activities that encourage Canadians to protect fishery resources and habitats, patrol activities to detect violations, and major case management.

Any suspected or actual fisheries, wildlife or pollution violations can be quickly and discretely reported to the appropriate enforcement officer by using the toll free observe, record and report hotline. This toll free number is available 24 hours a day.

#### **OBSERVE, RECORD AND REPORT 1-800-465-4DFO (1-800-465-4336)**

Enforcement priorities and strategies for Fraser Eulachon fisheries are developed and coordinated with local C&P and Fisheries Management staff. Fishery Officers conduct directed and opportunistic patrols of the fishing area. Patrols during open and closed times will be conducted taking into consideration competing priorities and resources.

### **PERFORMANCE REVIEW (Section 8)**

Management Plan Evaluation Criteria (National, Pacific, and Resource Management) are described in the full plan.

A 2019 Post-Season Review (Appendix 1), Indigenous Fishing Plan (Appendix 3), Recreational Fishing Plan (Appendix 4), and Commercial Fishing Plan (Appendix 5) are also available in the full IFMP.

#### **FISHERIES AND OCEANS CANADA CONTACT**

For additional information on this IFMP Summary please contact [Marisa.Keefe@dfo-mpo.gc.ca](mailto:Marisa.Keefe@dfo-mpo.gc.ca), or to view an electronic version of the full IFMP please visit <http://waves-vagues.dfo-mpo.gc.ca/Library/40851606.pdf>.