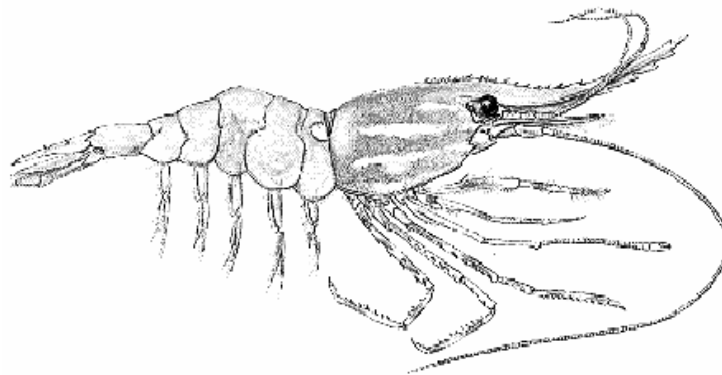




Integrated Fisheries Management Plan Summary

Prawn & Shrimp (*Pandalus spp.*) by Trap Pacific Region 2016/2017



Pandalus platyceros

The purpose of this Integrated Fisheries Management Plan (IFMP) summary is to provide a brief overview of the information found in the full IFMP. This document also serves to communicate the basic information on the fishery and its management to Fisheries & 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. The full IFMP is available on request.

This IFMP summary 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.

Signature and title of DFO approval authority

The Pacific Region's fisheries for prawns and shrimp using traps take place along the BC coastline in rocky near-shore areas in depths of 40 to 100 m, and includes commercial, recreational and First Nations fisheries. Most of the catch (>60%) comes from the Strait of Georgia and inside of Vancouver Island. The target species is prawns (Spot Prawn, *Pandalus platyceros*), with a small incidental catch of other shrimp species and small commercial fisheries directed at Coonstripe Shrimp (*P. danae*) and Humpback Shrimp (*P. hypsinotus*).

The commercial prawn and shrimp by trap fishery began around 1914 in Howe Sound and reached prominence in the mid 1970s. The commercial fishery is a limited entry, competitive fishery with 250 licence eligibilities. Of these, 57 are designated communal commercial licences for First Nations participation in the commercial fishery. The commercial fishery is managed by seasonal closures, in-season area closures, gear limits, gear marking requirements, trap mesh size requirements, minimum size limits, daily fishing time restrictions and a daily single haul limit. The commercial fishery opens no earlier than May 1 to allow for increased growth of the prawns prior to harvest, improving catch weight and value. Seasonal closures are implemented based on sampling conducted onboard commercial vessels during the commercial fishery. Once closed, areas remain closed to protect the remaining egg bearing females from commercial fishing mortality through to the end of the larval hatching period (end of March the following year). The commercial fishery generally closes coastwide by the end of June. The directed Humpback Shrimp and Coonstripe Shrimp fisheries take place in the fall to the end of December.

The recreational and First Nations fisheries are more recently developed. A British Columbia Tidal Waters Sport Fishing Licence is required for the recreational harvest of all species of fish, including shellfish. Crabs, prawns and shrimp, clams and oysters are the main species of shellfish harvested. The recreational prawn and shrimp fishery is an open entry fishery with a daily bag limit, two-day possession limit, gear limits and gear marking requirements. There is no size limit. The recreational fishery is open for most of the coast throughout the year. Local recreational closures may be implemented during the spawning period (January to March).

First Nations' harvest for food, social and ceremonial purposes may occur where authorized by an aboriginal communal licence or, under treaty, a harvest document. Fifty-four communal licences and 3 harvest documents may be issued annually in the Pacific Region including harvest for a number of shellfish species. Food, social and ceremonial harvest is not currently limited by catch quantity, except in those Nations where the Council or fisheries Program has established their own catch limits for band members, or where allocated under treaty.

Seasonal closures have been managed since 1979 using an escapement-based model, referred to as the Spawner Index Model based on ensuring a minimum number of female spawners available at time of egg hatch, which normally occurs by the end of March.

Stock Assessment, Science & Traditional Knowledge

IFMP Section 2

Spot Prawn stocks are managed and assessed based on an escapement-based model (Section 1). Growth and mortality parameters for the model are obtained through semi-annual fishery independent surveys. Fishery independent index surveys are also conducted in the fall to monitor stock status prior to spawning. During the commercial fishing season, a sub-set of the commercial traps hauled are sampled by independent observers to monitor stock status relative to the in-season harvest reference points.

Annual commercial fishery landings are considered a reasonable proxy of overall stock abundance. Annual landings generally showed an increasing trend from the development of the fishery up to 2009 (Section 3.1). Since 2009 annual catches have been variable. Based on preliminary data, the 2015 commercial catch estimate is greater than 2014 and reverses a downward trend since 2011. The primary indicator of stock status for 2016 will be the sample results obtained at the start of the 2016 commercial prawn season.

Economic Profile of the Fishery

IFMP Section 3

Please refer to the IFMP for references cited in this Section.

Commercial Fishery

The commercial prawn and shrimp by trap fishery is one of the most valuable fisheries in the Pacific Region. With a landed value of \$35.2 million, it was the 4th most valuable wild capture fishery in 2013 after the halibut, geoduck/horseclam, and crab fisheries (BC Stats 2013). The total value of prawn licences held by the commercial sector is estimated at \$128.8 million, with a typical licence valued at \$660,600. Aggregate vessel value for the prawn fleet is estimated at a \$55.2 million (Nelson 2012).

Gross Domestic Product (GDP) measures the value added to the economy by an activity and includes wages, owner profits, returns to invested capital, changes in inventories and depreciation. BC Stats (2013) indicates the prawn fishery added \$17 million to GDP in 2011, representing 12.5% of capture fisheries' GDP in that year. From 2007 to 2011 the prawn fishery, on average, accounted for between 9.6 and 10.6% of capture fisheries' GDP¹ (BC Stats (2013)).

In 2013, the wholesale value of prawns processed in BC was \$53 million². However, it is unclear whether this is 100% BC product or if it includes prawns that are imported for further processing. The 2011 processor employment survey found that seafood processing employed 4,703 individuals in that year (BC Ministry of Agriculture). Of these, processing the wild shellfish harvest accounted for 11% of jobs. Wild caught prawns accounted for slightly over 7% of wild shellfish processing employment between 2003 and 2006 (Fraser 2008).

Once almost totally reliant on the Japanese market, the prawn sector has diversified its market channels and now enjoys high profile in local, domestic, and other export markets. BC spot prawns have been recognized by the Vancouver Aquarium's

¹ If measuring in real terms, five year average share of capture fishery GDP is 9.6%. In nominal terms the five year average is 10.6% of the capture fishery GDP.

² BC Seafood Year in Review 2012

OceanWise program as a “Recommended” choice, and as a “Best Choice” by the Monterey Bay Aquarium’s Seafood Watch program. Such recommendations create marketing opportunities and raise the profile of spot prawns in local, domestic, and growing export markets such as China and Hong Kong, and Taiwan.

Recreational Fishery

Recreational prawning is a leisure activity that also provides food for personal use. In 2010, prawn and shrimp fishing occurred on 14.5% of angler days (297,780 days of a total 2,052,957 days). Despite this increase in fishing effort, when asked their top three preferred species, anglers continue to indicate halibut and three of the five salmon species. Nine percent of resident anglers, who accounted for over 93% of recreational fishing effort³ directed at prawn and shrimp in 2010, identified prawns as a top-three species in the survey. Two-thirds of prawn and shrimp fishing effort in 2010 was undertaken in the Strait of Georgia, with another 12.5% in Barkley Sound (Fisheries and Oceans Canada 2012).

Typically, BC’s tidal water recreational fishery has been the third largest recreational fishery in Canada in terms of expenditures⁴ and major purchases. Expenditures by resident anglers, which increased 18% in real terms from 2005 to 2010, buoyed overall recreational spending, which increased by 2% over that same period⁵. 2010 expenditures attributable to recreational fishing in BC tidal waters are estimated at \$696.5M, with \$36.4M attributable to recreational fishing for prawn and shrimp. Between 2005 and 2010, estimated expenditures attributed to prawn and shrimp increased by \$4.9M, after adjusting for inflation. The percentage of recreational expenditures attributable to prawn and shrimp also increased slightly, from 4% in 2005 to 5% in 2010.

First Nations

The Allocation Transfer Program (ATP) and Pacific Integrated Commercial Fishery Initiative (PICFI) have relinquished existing commercial licence eligibilities from fish harvesters on a voluntary basis and re-issued these to eligible First Nation organizations as communal commercial licences. As a result of these programs, 22% of commercial prawn and shrimp by trap licence eligibilities⁶ are held by First Nations for participation in the commercial fishery (above).

Access and Allocation

IFMP Section 6

The Minister can, for reasons of conservation or for any other 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*.

³ All recreational fishing effort is measured in terms of angler days. More than one species may be fished per angler day, and the actual amount of time spent harvesting each species on a given day is undetermined.

⁴ Recreational fishing expenditures are not measures of economic value and cannot be compared across sectors because they represent the value of final goods and services produced in other industries, rather than the value added to the economy as a result of recreational fishing.

⁵ Growth rates in this section are based on expenditures that have been adjusted to account for inflation.

⁶ There are 250 prawn and shrimp by trap licence eligibilities in total, of which 57 are communal commercial for First Nations participation in the commercial fishery.

The commercial fishery is limited entry, with seasonal and area closures, gear limits, minimum size limits, daily fishing time restrictions, and a single haul limit.

The recreational fishery has a daily catch and possession limit for prawns and shrimp species combined. Gear limits and seasonal area closures apply.

To date, DFO has not specified gear or catch limits in communal licences for First Nations' food, social and ceremonial harvest. Starting March 2016, DFO will request details about how commercial vessels and gear will be used for harvesting prawns for FSC purposes. These details are requested so that there can be a common understanding of the size, scope and timing of the fishery. Prawns and shrimp may be allocated under treaty, but were unallocated under the Maa-nulth, Tsawassen and Nisga'a Treaties. The Tla'amin fishery for domestic (FSC) purposes under the Tla'amin Final Agreement (Treaty) includes an FSC allocation for prawns.

Scientific licence requests received from scientific, educational, and public display institutions, including biological collecting firms, are considered. Existing policies with respect to scientific licences and new policies on the use-of-fish apply.

Shared Stewardship Arrangements

IFMP Section 8

A joint project agreement is established annually between DFO and the Pacific Prawn Fishermen's Association for delivery of co-management programs supportive of the commercial fishery. This Agreement includes an annual work plan of activities related to the commercial fishery that are to be accomplished by both parties and the annual financial contributions of each party.

Commercial vessel owners/licence eligibility holders are required to make arrangements with an industry service provider for the delivery of in-season information to DFO. The cost of this service is established by the service company and is negotiated by the Association on behalf of licence eligibility holders. The industry service provider for 2016 is J.O. Thomas and Associates, Ltd. of Vancouver, British Columbia.

Management Issues, Objectives and Measures

IFMP Sections 4, 5 and 7

#	Management Issue	Objectives	Management Measure
1	<p><i>Conservation and Sustainability</i></p> <p>DFO has become concerned about the increasing use of commercial vessels and gear in the FSC fishery and the impact this will have on conservation and sustainability of the resource</p>	<p>Meet conservation objectives and ensure healthy and productive fisheries and ecosystems.</p> <p>Provide opportunities for First Nations to harvest fish for food, social and ceremonial purposes, in a manner consistent with the decision of the Supreme Court of Canada in <i>R. vs. Sparrow</i> and subsequent court decisions.</p>	<p>Starting March 2016, DFO will request details about how commercial vessels and gear will be used for harvesting prawns for FSC purposes. These details are requested so that there can be a common understanding of the size, scope and timing of the fishery. DFO is implementing this approach while discussions with First Nations continue on longer-term management measures to ensure an orderly and manageable FSC prawn fishery and conservation and sustainability of the resource.</p>
2	<p><i>Commercial Fishery</i></p> <p>The Transportation Safety Board, in investigation of 2 capsizings, expressed concern that DFO’s maximum vessel length policy puts constraints on vessel replacements and influenced fish harvesters’ decisions to make vessel alterations that may negatively impact on their vessel’s stability</p>	<p>Vessel safety is an objective shared between DFO, Transport Canada, Transportation Safety Board, and WorkSafeBC.</p> <p>Adopt an affirmative action profile in respect of vessel safety considerations in conjunction with other responsible agencies, Transport Canada, Transportation Safety Board and Worksafe BC.</p>	<p>Fishing Vessel Safety considerations developed with the Transportation Safety Board and Transport Canada are provided in the Commercial Harvest Plan.</p> <p>DFO has modified licence length restrictions in a number of fisheries in recent years and will look at removing it in the prawn fishery given that trap limits and seasonal closures (based on spawner index) are in place for management of the fishery.</p>
3	<p><i>Recreational Fishery</i></p> <p>There is limited information on recreational catch and effort</p>	<p>Meet conservation objectives and ensure healthy and productive fisheries and ecosystems.</p> <p>Develop standards for fishery monitoring and catch reporting for all sectors.</p> <p>Provide sustainable recreational harvesting opportunities as part of integrated management plans consistent with DFO’s policies.</p>	<p>Recreational catch reporting became mandatory in 2013 under the Tidal Waters sport fishing licence.</p> <p>A new on-line recreational survey began in 2012 and will provide monthly estimates of all sport caught species, including prawns.</p>

#	Management Issue	Objectives	Management Measure
4	<p><i>Recreational Fishery</i></p> <p>The Sport Fishing Advisory Board has stressed the importance of maintaining sufficient spawners and continuing fall surveys to support the management strategy and fishing opportunities in coastal areas where recreational effort is focused.</p>	<p>Consider the goals of stakeholders with respect to social and cultural value of the fishery.</p> <p>Provide sustainable recreational harvesting opportunities as part of integrated management plans consistent with DFO's policies.</p> <p>Establish working mechanisms in conjunction with the other fishing sectors to reduce conflict and mitigate issues.</p>	<p>DFO and the Pacific Prawn Fishermen's Association are pursuing a use-of-fish or other approach to conduct fall surveys.</p>
5	<p><i>First Nations Fishery</i></p> <p>First Nations' are interested in being more actively involved in management of the fishery within their claimed traditional territories</p>	<p>Provide stability, transparency, and predictability in fisheries management and improved governance.</p> <p>Provide opportunities for First Nations to harvest fish for food, social and ceremonial purposes, in a manner consistent with the decision of the Supreme Court of Canada in <i>R. vs. Sparrow</i> and subsequent court decisions.</p>	<p>First Nations involvement in management of the fishery is being addressed through the Aboriginal Aquatic Resource and Oceans Management program, and local consultations are encouraged. First Nations may also contact DFO for bilateral discussions.</p>

#	Management Issue	Objectives	Management Measure
6	<p><i>First Nations Fishery</i></p> <p>Limited information on food, social, ceremonial harvests</p>	<p>Meet conservation objectives and ensure healthy and productive fisheries and ecosystems.</p> <p>Provide opportunities for First Nations to harvest fish for food, social and ceremonial purposes, in a manner consistent with the decision of the Supreme Court of Canada in <i>R. vs. Sparrow</i> and subsequent court decisions.</p> <p>Develop standards for fishery monitoring and catch reporting for all sectors.</p>	<p>Catch monitoring programs are being developed in collaboration with some First Nations organizations and standards for all fishery monitoring and catch reporting programs are being developed. Prawns are a priority within the shellfish species to be included in these programs.</p>
7	<p><i>Compliance</i></p> <p>DFO has become concerned about the increasing use of commercial vessels outside the commercial fishing season. The investigation of illegal sales of prawns is an important enforcement priority.</p>	<p>Meet conservation objectives and ensure healthy and productive fisheries and ecosystems.</p> <p>Pursue opportunities to monitor and enforce these fisheries, in conjunction with the monitoring and enforcement priorities in the Pacific Region.</p>	<p>Enforcement issues are prioritized in the Compliance Plan (Section 9).</p>
8	<p><i>Ecosystem - Depleted Species Concerns</i></p> <p>Juvenile rockfish bycatch</p>	<p>Meet conservation objectives and ensure healthy and productive fisheries and ecosystems.</p>	<p>A rockfish bycatch sampling program was implemented in 2002. The fishery has been allowed to continue under the existing management measures, including ongoing monitoring.</p>

#	Management Issue	Objectives	Management Measure
9	<p><i>Ecosystem - Oceans Act and other initiatives</i></p> <p>A number of new initiatives may impact on the prawn and shrimp trap fisheries: development of Marine Protected Areas and the Pacific North Coast Integrated Management Area under the <i>Oceans Act</i>, National Marine Conservation Areas under the <i>National Marine Conservation Areas Act</i>, National Marine Wildlife Areas under the <i>Canada Wildlife Act</i></p>	<p>Meet conservation objectives and ensure healthy and productive fisheries and ecosystems.</p> <p>Manage fisheries to provide opportunities for economic prosperity.</p> <p>Provide stability, transparency, and predictability in fisheries management and improved governance.</p>	<p>In 2002, Canada’s Oceans Strategy was released to provide the policy framework and strategic approach for modern oceans management in estuarine, coastal, and marine ecosystems. As set out in the <i>Oceans Act</i>, the strategy is based on the three principles of sustainable development, integrated management, and the precautionary approach.</p> <p>Changes to the prawn and shrimp trap fisheries as a result of these initiatives are aligned and implemented through the IFMP.</p>
10	<p><i>Ecosystem - Gear Impacts</i></p> <p>Prawn and shrimp trap gear is fixed bottom-contact gear which may impact biogenic structures and, although rare, groundlines and buoy lines may entangle some species at risk</p>	<p>Meet conservation objectives and ensure healthy and productive fisheries and ecosystems.</p> <p>Manage fisheries to provide opportunities for economic prosperity.</p>	<p>The Ecological Risk Assessment Framework drafted under the Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas will be used to determine the level of risk in these fisheries and whether mitigation measures are required.</p> <p>DFO’s Pacific Region Cold-Water Coral and Sponge Conservation Strategy encompasses short and long-term goals and aims to promote the conservation, health and integrity of Canada’s Pacific Ocean cold-water coral and sponge species. The Strategy also takes into consideration the need to balance the protection of marine ecosystems with the maintenance of a prosperous economy.</p> <p>Encounter protocols to reduce the risk of whale entanglement and assist in response have been adopted by the commercial fishery. Measures must be taken to avoid incidental capture and entanglement of Basking Sharks.</p> <p>DFO coordinates a network of government and non-government experts in disentangling and to assist in response to sick, injured, distressed or dead animals.</p>

Governance Process

IFMP Section 1

The prawn and shrimp by trap fisheries are governed by the *Fisheries Act* and Regulations made thereunder.

The Prawn Advisory Board (Section 15 of the IFMP) is the primary body guiding management decision-making processes for these fisheries. The Board includes representatives from DFO, elected representatives of commercial licence eligibility holders, processors, Sport Fishing Advisory Board representatives for recreational fishing interests, First Nations, and the Province of BC. The Prawn Advisory Board meets two times per year for a post-season review (September) and pre-season planning (November).

Compliance Plan

IFMP Section 9

DFO Conservation and Protection pursues opportunities to monitor and enforce this fishery, in conjunction with the monitoring and enforcement priorities in the Pacific Region.

Priorities for the commercial fishing season are related to enforcement of the single haul condition through funding provided by the Pacific Prawn Fishermen's Association (Section 8). On-grounds monitors also provide an "observe, record and report" capability.

The investigation of illegal sales of prawns is an important enforcement priority. Other enforcement effort may be directed to monitoring for early setting before the season opening, patrolling for late fishing in local closures announced in-season, undersize prawns and follow up on delinquent logbook reporting.

Performance Review

IFMP Section 10

Performance indicators are reported in the Post-Season Review (Section 16 of the IFMP).

Stock assessment, sampling and research activities are outlined. The performance review may also include outcomes from meetings with First Nations and other sectors regarding the prawn and shrimp trap fisheries. Input from members of the Prawn Advisory Board meetings is included. The delivery of the commercial fishery is assessed by performance measures such as the amount of prawns landed and value of the fishery. The post-season review includes time spent attending to enforcement of the fishery. The outcome of ecosystem-related initiatives is also reported.

Fisheries and Oceans Canada Contact

For additional information on this IFMP Summary or to request an electronic version of the full IFMP, please contact Laurie Convey at 250-756-7233 or Laurie.Convey@dfo-mpo.gc.ca.