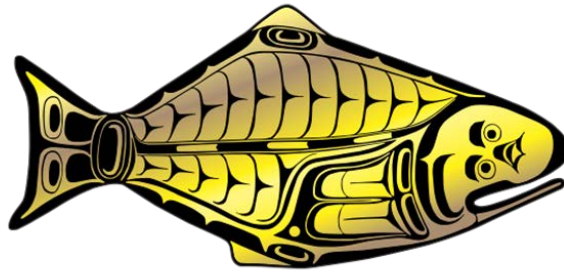


INTERNATIONAL PACIFIC HALIBUT COMMISSION

HARVEST STRATEGY POLICY

(2019)

INTERNATIONAL PACIFIC



HALIBUT COMMISSION



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ACRONYMS

HCR	Harvest Control Rule
IPHC	International Pacific Halibut Commission
LIM	Limit
MSE	Management Strategy Evaluation
NER	Net economic returns
SB	Spawning Biomass (female)
SPR	Spawning Potential Ratio
U.S.A.	United States of America

DEFINITIONS

A set of working definitions are provided in the IPHC Glossary of Terms and abbreviations:
<https://www.iphc.int/the-commission/glossary-of-terms-and-abbreviations>

Contents

1 Introduction 5

 1.1 Scope..... 5

2 Objectives and Key Principles..... 6

3 Applying the Harvest Strategy Policy..... 7

 3.1 Accounting for all sources of fishing mortality.....7

 3.2 Establishing and applying decision rules7

 3.3 Balancing risk, cost and catch.....7

 3.4 Reference points and proxies8

 3.5 Technical evaluation of the harvest strategy8

 3.6 Jointly-managed domestic stocks8

 3.7 Jointly-managed international stocks9

 3.8 Rebuilding if the stock becomes overfished.....9

 3.9 Rebuilding timeframes.....9

NOTE: The following is a Draft document based on an amalgamation of current IPHC practices and best practices in harvest strategy policy. It is not intended to be a definitive policy, noting that the IPHC is yet to adopt a formal harvest strategy for Pacific halibut. It is expected that over the coming two years, the IPHC will develop and implement a harvest strategy, and that this policy document will then be updated accordingly.

1 Introduction

The *IPHC Harvest Strategy Policy* provides a framework for applying a science-based approach to setting harvest levels for Pacific halibut (*Hippoglossus stenolepis*) throughout the Convention Area.

It defines biological and economic objectives that apply to the development of a harvest strategy for Pacific halibut. It also identifies reference points for use in the harvest strategy to achieve the Commission's stated objectives. This policy, together with the *Protocol amending the Convention between Canada and the United States of America for the preservation of the [Pacific] halibut fishery of the northern Pacific Ocean and Bering Sea (1979)*, provides the basis to manage the risk to Pacific halibut fisheries and the Pacific halibut population.

A harvest strategy developed under this policy will take available information about the Pacific halibut resource and apply a science-based approach to setting catch levels. A harvest strategy consistent with this policy will provide all interested sectors with confidence that Pacific halibut is being managed for long-term ecological sustainability and economic viability. The implementation of a clearly specified harvest strategy will also provide the fishing industry with a more certain operating environment.

Harvest strategy defined: A harvest strategy sets out a decision framework necessary to achieve defined biological and economic objectives for Pacific halibut. A harvest strategy will outline:

- Processes for monitoring and assessing the biological and economic conditions of Pacific halibut in relation to fishery and biological reference levels (a reference point or points).
- Pre-determined rules that control fishing activity according to the biological and economic conditions of the fishery (as defined by monitoring and/or assessment). These rules are referred to as control rules or decision rules.

1.1 Scope

The IPHC Harvest Strategy Policy applies to the Pacific halibut population managed by the IPHC, and where overlap with domestic jurisdictional management exists (e.g. managed jointly by the IPHC and Contracting Party domestic agencies) the IPHC will seek to apply and encourage the adoption of this policy in negotiating and implementing joint or cooperative management arrangements.

2 Objectives and Key Principles

The objective of the IPHC Harvest Strategy Policy is the sustainable and profitable use (optimum yield) of Pacific halibut through the implementation of a harvest strategy that maintains the stock at sustainable levels while maximising economic returns.

To achieve this objective the IPHC will implement a harvest strategy that pursues maximum economic yield (MEY) for the directed Pacific halibut fishery and seeks to:

- maintain Pacific halibut, on average, at a target (fixed or dynamic) female spawning biomass equal to the stock size required to produce maximum net economic returns on a spatial and temporal scale relevant to the fishery;
- maintain Pacific halibut, above a female spawning biomass limit where the risk to the stock is regarded as unacceptable (SB_{LIM}), at least 90% of the time;

Maximising the net economic return from the fishery may not always equate with maximising the profitability of the fishery. Net economic return may consider inter-annual stability to maintain markets, and economic activity may also arise from recreational and Indigenous fishing, and the need to share the resources appropriately will be considered where necessary.

The harvest strategy will ensure fishing is conducted in a manner that does not lead to *overfishing*. *Overfishing* is defined as where the stock is subject to a level of fishing that would move it to an overfished state, or prevent it from rebuilding to a ‘*not overfished*’ state, within a specific time-frame and probability. Where it is identified that *overfishing* of the stock is occurring, action will be taken immediately to cease that *overfishing* and action taken to recover the overfished stock to levels that will ensure long-term sustainability and productivity to maximise NER.

The harvest strategy will also ensure that if the stock is overfished, the fishery must be managed such that, with regard to fishing impacts, there is a high degree of probability the stock will recover. If the stock is assessed to be below the female spawning biomass limit reference point (i.e. *overfished*), a stock rebuilding strategy will be developed to rebuild the stock to the limit female spawning biomass level, whereby the harvest control rules would then take effect to build the stock further to target female spawning biomass levels.

Overfished: when the estimated probability that female spawning stock biomass is below the limit reference point (SB_{LIM}) is greater than 50%.

Overfishing: where the stock is subject to a level of fishing that would move it to an overfished state, or prevent it from rebuilding to a ‘*not overfished*’ state, within a specific time-frame and probability, to be determined.

3 Applying the Harvest Strategy Policy

The following requirements provide the basis for a transparent and systematic approach for developing the harvest strategy to assist in meeting the objectives of the Harvest Strategy Policy.

3.1 Accounting for all sources of fishing mortality

The harvest strategy will account for all known sources of fishing mortality on the stock, including recreational and Indigenous fishing; and fishing under the management of another jurisdiction, such as non-directed (incidental) fishing mortality.

3.2 Establishing and applying decision rules

The harvest strategy developed under this policy will specify any required management actions or considerations for Pacific halibut, at the stock or management unit level, necessary to achieve the ecological and economic management objectives for the fishery.

3.3 Balancing risk, cost and catch

This policy establishes a risk-based management approach, which provides for an increased level of caution when establishing control rules in association with increasing levels of uncertainty about stock status.

In the context of this policy, the risk, cost, and catch trade-off, refers to a trade-off between the amount of resources invested in data collection, analysis and management of Pacific halibut, and the level of catch (or fishing mortality) applied. Fishing mortality should always be constrained to levels at which scientific assessment indicates Pacific halibut is not exposed to an ‘unacceptable ecological risk’ (that is the risk that stocks will fall below the limit reference point).

The management decision to be taken in this context is whether investment of more resources in data collection and analyses and/or additional management will increase the understanding of the risk to a species or stock from fishing and provide confidence in the sustainability of a higher level of fishing pressure or catch. In the absence of this additional information—and associated improved understanding of a stock—it may be necessary to reduce the fishing effort in order to manage the risk. Decisions about investment in managing risk versus the economic return of the catch taken will be transparently made, clearly documented and publicly available.

3.4 Reference points and proxies

A reference point is a specified level of an indicator used as a basis for managing Pacific halibut. The reference point should reflect acceptable levels of biological impact on the stock and the desired economic outcomes from the fishery. A reference point will often be based on indicators of either the total or female spawning stock size (spawning biomass), the amount of harvest (fishing mortality), or on other factors such as economic return from the fishery.

A harvest strategy for Pacific halibut shall be based on ‘target’ reference points and ‘limit’ reference points. The target reference point will be set at a level designed to achieve the policy objectives. A limit reference point will indicate a point beyond which, the long-term health of the stock, as the basis of a commercial fishery, is considered unacceptable and which the Commission should avoid. Fishing when the Pacific halibut population is below the limit reference point places the Pacific halibut stock at a range of biological risks, including an unacceptable risk to recruitment and an increased risk that the stock will fail to maintain its ecological function.

Until the IPHC Management Strategy Evaluation process is completed, the proxy reference points described in Table 1 are to be used:

Table 1. Proxy reference points

Reference point	Definition	Proxy
Target reference point	The female spawning biomass level at maximum economic yield (SB_{MEY})	0.45 of unfished female spawning biomass; or 1.2 of female spawning biomass at maximum sustainable yield.
Limit reference point	The female spawning biomass level where the ecological risk to the population is regarded as unacceptable (i.e. at least 90 percent of the time) (SB_{LIM})	0.5 of the female spawning biomass at maximum sustainable yield or 0.2 of the unfished female spawning biomass

3.5 Technical evaluation of the harvest strategy

A harvest strategy should be formally tested to demonstrate that it is highly likely to meet the objective and key principles of this policy. Outcomes of that testing should be made publicly available. Management strategy evaluation—a procedure where alternative management strategies are tested and compared using simulations of stock and fishery dynamics—shall be used to test harvest strategy options. A MSE should be designed to ensure that:

- the probability of achieving the target or better is at least 50%;
- the probability of breaching the limit does not exceed 10%.

3.6 Jointly-managed domestic stocks

Consistent with the *Protocol amending the Convention between Canada and the United States of America for the preservation of the [Pacific] halibut fishery of the northern Pacific Ocean and Bering Sea (1979)*, the IPHC will pursue the sustainable use of Pacific halibut within fisheries managed by other jurisdictions.

3.7 Jointly-managed international stocks

The IPHC Harvest Strategy Policy does not prescribe management arrangements in the case of fisheries that are managed by a Party external to the IPHC Convention. This includes management arrangements for commercial and traditional fishing in the US Treaty Tribes and Canadian First Nations, that are governed by provisions within relevant Treaties. However, it does articulate the IPHC preferred approach.

3.8 Rebuilding if the stock becomes overfished

If Pacific halibut is determined to be overfished (when the probability that female spawning stock biomass is below the limit reference point with greater than 50% probability), immediate action is required to cease targeted fishing and rebuild the stock to levels that will ensure long-term sustainability and productivity, i.e. at or above SB_{LIM} . A rebuilding strategy must be developed to rebuild the stock to above its limit reference point, for agreement by the Commission. A rebuilding strategy will be required until the stock is above the limit reference point with a reasonable level of certainty (at least a 70% probability that the stock has rebuilt to or above the limit reference point). It must ensure adequate monitoring and data collection is in place to assess the status of the stock and rebuilding progress.

Targeted fishing and incidental mortality of Pacific halibut, if determined to be overfished, should be constrained as much as possible to levels that allow rebuilding to the limit reference point within the specified timeframe. Once a stock has been rebuilt to above the limit reference point with a reasonable level of certainty, it may be appropriate to recommence targeted fishing, and increase incidental mortality in line with the harvest strategy, noting that the usual harvest strategy requirements regarding the risk of breaching the limit reference point will apply.

The rebuilding strategy should note where sources of mortality exist that cannot be managed or constrained by the IPHC, and must take this mortality into account. Where practical and appropriate, the IPHC will work with other jurisdictions to ensure other sources of mortality from fishing are reasonably constrained consistent with any catch sharing arrangement.

When a rebuilding strategy is being developed, it must include performance measures and detail on how and when these measures will be reported on. Where there is no evidence that a stock is rebuilding, or is going to rebuild in the required timeframe and probability, the IPHC will review the rebuilding strategy and make the result of the review public. If changes to the rebuilding strategy are considered necessary, such changes should be made in a timely manner.

3.9 Rebuilding timeframes

Rebuilding timeframes are explicitly related to the minimum timeframe for rebuilding in the absence of commercial fishing. Rebuilding timeframes should take into account Pacific halibut productivity and recruitment; the relationship between spawning biomass and recruitment; and the stock's current level of depletion.