



DRAFT: Summary of the data, stock assessment, and harvest decision table for Pacific halibut (*Hippoglossus stenolepis*) at the end of 2021

NOTE: This document is a placeholder. A Rev_1 will be published prior to IM097.

PREPARED BY: IPHC SECRETARIAT (I. STEWART, A. HICKS, R. WEBSTER, D. WILSON, AND B. HUTNICZAK;
13 OCTOBER 2021)

PURPOSE

To provide the Commission with a summary of the data, stock assessment, and Harvest Decision Table at the end of 2021.

INTRODUCTION

In 2021 the International Pacific Halibut Commission (IPHC) undertook its annual coastwide stock assessment of Pacific halibut (*Hippoglossus stenolepis*). This assessment represents an update to the 2020 stock assessment ([IPHC-2020-SA01](#)), with incremental changes documented through a two-part review by the IPHC's Scientific Review Board (SRB; [IPHC-2021-SRB018-R](#), [IPHC-2021-SRB019-R](#)). At the time this document was produced, the final data updated through 2021 were not yet available. Changes and new data to be included for 2021 are:

1. Update the version of stock synthesis used for the analysis (3.30.17).
2. New modelled trend information from the 2021 FISS, including estimates covering the entire 1890 station design and all IPHC Regulatory Areas.
3. Age, length, individual weight, and average weight-at-age estimates from the 2021 FISS for all IPHC Regulatory Areas.
4. 2021 (and a small amount of 2020) Commercial fishery logbook trend information from all IPHC Regulatory Areas.
5. 2021 Commercial fishery biological sampling (age, length, individual weight, and average weight-at-age) from all IPHC Regulatory Areas. Sex-ratios-at-age for the 2020 commercial fishery (building on the 2017-2019 sex-ratios used in the 2020 stock assessment).
6. Biological information (lengths and/or ages) from non-directed discards (IPHC Regulatory Areas where available) and the recreational fishery (IPHC Regulatory Area 3A only) from 2020.
7. Updated mortality estimates from all sources for 2020 (where preliminary values were used) and estimates for all sources in 2021.

This document will provide an overview of the final data sources available for the 2021 Pacific halibut stock assessment including the population trends and distribution among IPHC Regulatory Areas based on the modelled IPHC fishery-independent setline survey (FISS), directed commercial fishery data, and results of the stock assessment.

STOCK AND MANAGEMENT

The stock assessment reports the status of the Pacific halibut (*Hippoglossus stenolepis*) resource in the IPHC Convention Area. As in recent stock assessments, the resource is modelled as a single stock extending from northern California to the Aleutian Islands and Bering

Sea, including all inside waters of the Strait of Georgia and Puget Sound, but excludes known extremities in the western Bering Sea within the Russian Exclusive Economic Zone (Figure 1).

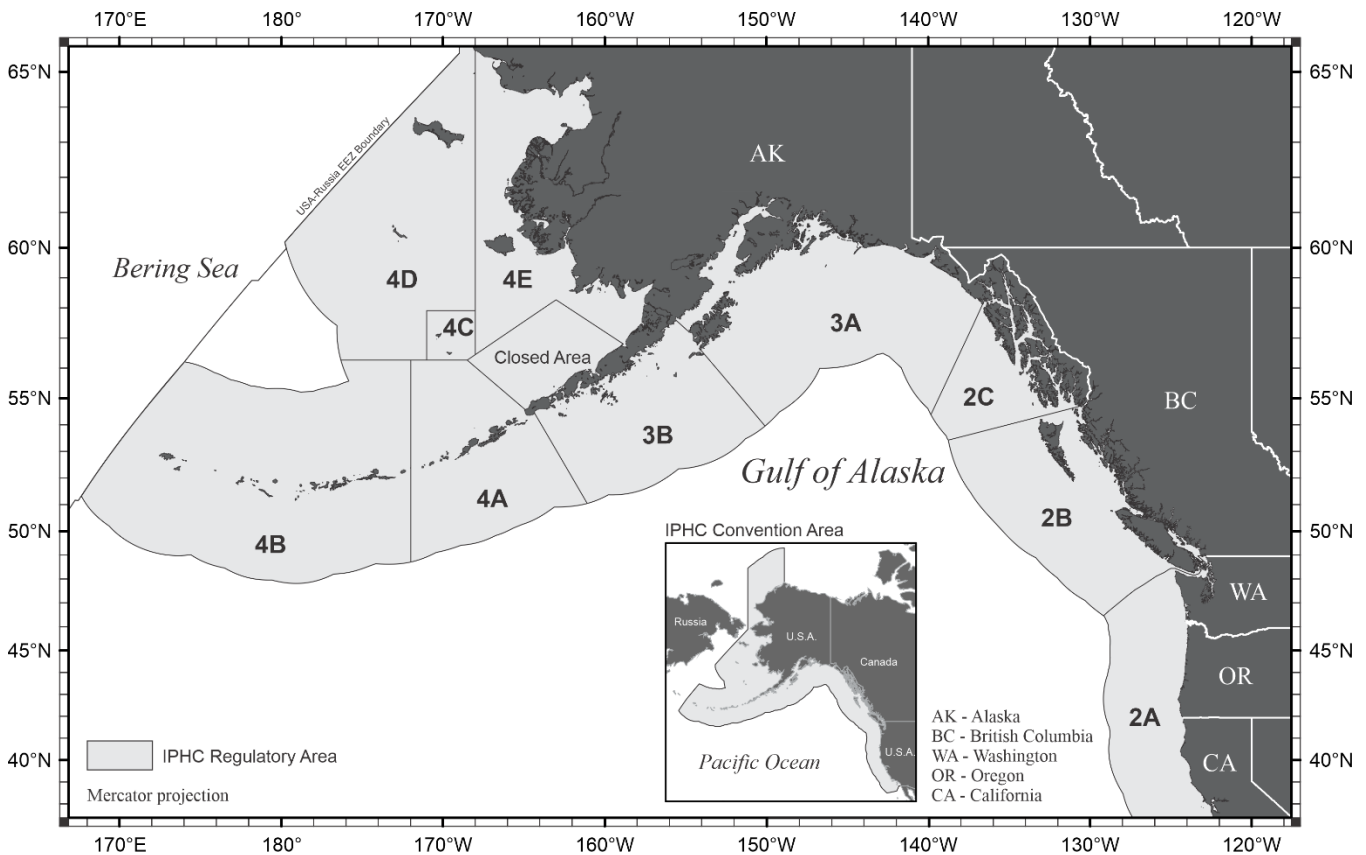


Figure 1. IPHC Convention Area (insert) and IPHC Regulatory Areas.

The Pacific halibut fishery has been managed by the IPHC since 1923. Catch limits for each of eight IPHC Regulatory Areas¹ are set each year by the Commission. The stock assessment provides a summary of recently collected data, and model estimates of stock size and trend. Specific management information is summarized via a decision table reporting the estimated risks associated with alternative management actions and catch tables projecting the level of mortality for fisheries in each IPHC Regulatory Area indicated by the IPHC's interim management procedure, as well as other alternatives.

SUMMARY OF PENDING CONTENT

This document will contain a summary of the data relevant to Pacific halibut management and contributing to the 2021 stock assessment. These data include:

- Recent and historical mortality,
- Trends in bio-socioeconomic conditions directly related to the economic performance of the directed Pacific halibut fisheries
- The results of the 2021 (and earlier) Fishery-Independent Setline Survey (FISS) analyzed via the IPHC's space-time model:
 - Trends by Biological Region and IPHC Regulatory Area
 - Age-compositions
 - Stock distribution estimates by Biological Region

¹ The IPHC recognizes sub-Areas 4C, 4D, 4E and the Closed Area for use in domestic catch agreements but manages the combined Area 4CDE.

This document will also include a summary of the 2021 stock assessment. Primary results include:

- Coastwide biomass and recruitment trends
- A comparison to 2020 and earlier stock assessment results (biomass scale and trends)
- Reference points
- Major sources of uncertainty

Three-year stock projections (2022-24) under a range of potential mortality levels will be reported in the form of the Harvest Decision Table. This table presents risk metrics relating to stock trend, stock status, fishery trend and fishery status for each level of future harvest.

Scientific advice presented will be categorized into four general categories:

- Sources of mortality
- Fishing intensity
- Stock status
- Stock distribution

TIMELINE FOR REVISION

The complete document (IPHC-2021-IM097-10 Rev_1) is anticipated to be available no later than **24 November 2021**.

Detailed material for AM098 will include any further revisions to this summary document. As in 2020, a more detailed description of the stock assessment (IPHC-2022-SA-01) and the data sources (IPHC-2022-SA-02), will be published directly to the [stock assessment page](#) on the IPHC's website. An updated mortality projection tool (see IPHC-2021-IM097-INF02) will also be developed for use in evaluating 2022 mortality limits during AM098, this tool will be finalized in early January 2022 in order to make use of revised end-of-year 2021 non-directed discard mortality estimates.