



**IPHC Head-on Landed Weight Requirement for Commercial Fishery,
including Removal of 24" Head-off Minimum Size Limit**

PREPARED BY: IPHC SECRETARIAT (11 JANUARY 2017)

PURPOSE

To eliminate a recently identified bias in Pacific halibut removal estimates (net weight), by requiring all Pacific halibut to be landed and weighed with their heads attached (head-on), for data reporting purposes.

BACKGROUND

In 2013, the IPHC staff began a study to evaluate the relationships used to convert Pacific halibut length to weight, head-on weight to head-off weight, and the adjustment made for washed vs. unwashed weight. Collection of these data was integrated into all commercial catch sampling in 2015, as well as included in select survey operations during 2016.

For Pacific halibut with heads removed during processing, the weight of the head (as a percentage of the whole body) has historically been assumed to be 10%. However, results from this study indicate that the average current head weight removed is around 12%, with a range from 9-18% among different ports and regulatory areas (see [IPHC RARA Report 2015](#) and [2016-1](#) links below). The range comes from variations in where the head is cut off, and, to a lesser degree, in the proportion of the head to the body for smaller versus larger Pacific halibut.

DISCUSSION

Regulations for the commercial fisheries require the initial accurate scale weight of Pacific halibut at the time of offloading to be reported on the landing record (fish ticket – USA, validation record – Canada) with the delivery condition code. Currently, when the fish ticket notes that the fish were weighed with the head on, reporting systems apply a 10% deduction for the weight of the head. Cutting larger heads than the assumed value, on average, and reporting weights after these cuts have management implications. This practice reduces the estimated net weight, potentially allowing more individual fish to be harvested within the catch limits.

Landing records show that, coastwide, 67-71% of catch by weight is reported head-off, so the potential effect of head proportions that differ from assumed values is substantial and is likely to have a significant impact on the stock assessment. For example, in recent years we may have underestimated the coastwide landings by 2-3%, with some individual regulatory areas more inaccurate than others. In order to improve the accuracy of estimated landings, all commercially landed Pacific halibut should be required to be landed and weighed with the head attached for the landing record (fish ticket – USA, validation record – Canada).

Remove 24” head-off minimum size limit: As part of this regulatory proposal, if Pacific halibut are required to be landed and weighed with their heads attached (head-on), for data reporting purposes, then a minimum size limit for head-off fish in IPHC Regulation 13(1)(b) is not necessary. In addition, since size limit regulations were first implemented in the 1940s, the IPHC has had occasional issues arise over the combination of head-on and head-off minimum size limits ([Appendix I](#) and [Appendix II](#)).

The minimum size limits for Pacific halibut in the commercial fishery are 32” with the head intact (head-on) and 24” with the head removed (head-off). The IPHC staff reviewed the head-off minimum size limit regulation more closely in 2016, resulting in a letter to NOAA Fisheries Office of Law Enforcement, dated 5 May 2016 ([Appendix I](#)). According to research that was conducted when this length-based 24” minimum size limit regulation was implemented in 1973, 95% of the fish that were measured at 24” with their heads off were greater than or equal to 32” with their heads on (see [IPHC Technical Report 15](#) (p.22-23) and [Appendix II](#)).

IPHC Technical Report No. 15 (1977) further describes the evolution of the size limit regulations since the 1940s, highlighting occasional issues with the combination of head-on and head-off minimum size limits. The size limit, first introduced to optimize harvesting size for economic reasons (small halibut had a lower value in the market and didn’t ship as well), was initially described in 1940 by weight rather than length. In 1944, the size limit changed from a combination of a length-based head-on and a weight-based head-off minimum size limit. As stated in IPHC Technical Report No. 15 on page 22, *“The combination of the length and weight limits posed occasional problems, i.e., a fish with its head on could measure 26 inches but could be less than 5 pounds with head off and entrails removed. The problem was compounded by a weight loss after the fish were iced on the vessel or placed in frozen storage.”*

In 1973, the minimum size limit was increased based on a study showing the growth rate had increased since 1940 ([IPHC Scientific Report 55](#)). In addition, the minimum size limit was changed to the fully length-based measurement currently in regulation. At this time, hundreds of Pacific halibut were measured with their heads on and off to set the 32” head-on and 24” head-off measurement to minimize the earlier problems encountered with the combination of length and weight size limits.

However, while the 1973 change minimized the previous issues with the combination head-on and head-off size limit requirement, the relationship between total and pectoral fin length is not absolute. Therefore, a single condition for measuring the size limit eliminates any discrepancies. As stated in [IPHC Technical Report No. 15](#) on page 23, *“When the two length measurements were introduced in 1973, the Commission intended to eventually establish a single measurement to simplify enforcement of the minimum size regulation.”* At the time, the Commission was considering moving to only a head-off minimum size limit. The Commission ultimately decided not to adopt a single head-off minimum size limit based on a recommendation from the Conference Board at the IPHC’s 1977 Annual Meeting. In 1991, the Commission adopted a requirement for halibut to be landed head-on in Area 2A to assist in collecting data on length and age (from otoliths) from an area where most fish were previously landed head-off and where assessment data needs were not being met (see [IPHC Technical Report 27](#) (p.26) and [Appendix II](#)).

Now, the IPHC staff are again proposing to move to a single condition for measuring the size limit to eliminate any discrepancies, this time by moving to a single head-on measurement paired with the requirement for Pacific halibut to be landed, weighed, and reported on the landing receipt with the head-on in all IPHC regulatory areas. The 32" head-on minimum size limit is the preferred measure for legal-sized Pacific halibut because it is a less disputable measurement. In addition, it provides access for biological sampling for lengths and otoliths (age) from all Pacific halibut landed.

Benefits/Drawbacks: The benefits of this proposal include more accurate estimates of total removals, reduced possibility of error in applying conversion factors, potential to randomly sample otoliths for all Pacific halibut landed, and more enforceable regulations. The drawbacks of this proposal are that some processors may have to adjust their fish-handling practices. In addition, fishermen that have traditionally removed heads at sea will have to adjust their fish-handling practices.

Sectors Affected: This regulatory proposal only affects the commercial fishery. For sport and subsistence fisheries, Pacific halibut that are headed are not used to estimate removals, so concerns about variation in head cuts do not apply to the data from those sectors. For sport fisheries, all minimum size limit restrictions are for Pacific halibut with their heads intact.

INTERIM MEETING REPORT & RESPONSE

At the 92nd Session of the IPHC Interim Meeting (29-30 November 2016), the Commission reviewed the draft regulatory proposal from the IPHC Secretariat, and made the following comments/requests:

Head-on landed weight requirement for the commercial fishery, including removal of the 24" head-off minimum size limit.

IM092, Para 65: *The Commission **REQUESTED** that the IPHC staff provide additional outreach to the PAG and HANA, prior to the 93rd Session of the IPHC Annual Meeting, regarding the head-on landed weight proposal and also consider addressing the related ice and slime conversion.*

In response to the Commission's request detailed in paragraph 65 of the IM092 Report, the IPHC Staff have the following input:

1) *Additional outreach to the PAG and HANA, prior to the Annual Meeting*

IPHC staff reached out to PAG and HANA representatives regarding this regulatory proposal via email. In addition, IPHC staff attended HANA's 20 December 2016 meeting and presented this regulatory proposal along with updates on the stock assessment and range of catch limits for 2017. Finally, IPHC staff has highlighted this issue at other meetings where PAG and HANA representatives have been present, including the December NPFMC meeting.

2) *Consider addressing the related ice and slime conversion*

At the same time IPHC staff began research on the head-on/head-off weight conversions in 2013, we also began research on the ice and slime conversion (also called washed versus unwashed) (see [IPHC RARA Report 2015](#) and [2016-1](#) links

below). This was part of a larger study looking at the length-weight relationship between fork length and net weight, including the estimation of adjustments necessary to convert gross weight (head-on, unwashed) to net weight (head-off, washed).

While the data from the study provided clear evidence of variations in head-on and head-off weights, the study did not include direct measurements of ice and slime. Rather, a subset of halibut (477) were weighed head-on unwashed and then head-off washed providing some information on the variations for ice and slime. IPHC staff recommends collecting further data with direct measurements on halibut (all with either head-on or head-off) before and after washing to get a better understanding of the ice and slime variations. Therefore, IPHC staff does not recommend addressing the related ice and slime conversion until further data are collected.

In addition, IPHC continues to collect data to evaluate the length-weight relationship, including collecting weights with lengths from the commercial fishery in ports coastwide and collecting weights with lengths at sea from the IPHC survey to capture changes in weight and/or length (shrinkage) from the time of capture to offload (see [IPHC RARA Report 2016-2](#), p.180)

RECOMMENDATION/S

That the Commission:

- 1) **ADOPT** the requirement for Pacific halibut to be landed and weighed with their heads attached (head-on), for data reporting purposes, in all IPHC regulatory areas, including removal of the 24" head-off minimum size limit as reflected in the suggested regulatory language below.
- 2) **NOTE** that the IPHC's definition of net weight in IPHC Regulation Section 3 paragraph (l) would continue to include a 10 percent deduction for heads, and that the fish landing receipt systems in Canada and the US would continue to use a 10 percent deduction to convert head-on to head-off weight.

SUGGESTED REGULATORY LANGUAGE

Amend IPHC Regulation Section 13 to revise paragraphs (1) and (2) to read as follows [edits in strikeout/underlined and highlighted]:

(1) No person shall take or possess any Pacific halibut that:

(a) with the head on, is less than 32 inches (81.3 cm) as measured in a straight line, passing over the pectoral fin from the tip of the lower jaw with the mouth closed, to the extreme end of the middle of the tail, as illustrated in Figure 2; or

(b) with the head removed, is less than 24 inches (61.0 cm) as measured from the base of the pectoral fin at its most anterior point to the extreme end of the middle of the tail, as illustrated in Figure 2.

(2) No person on board a vessel fishing for, or tendering, Pacific halibut caught in Area 2A shall possess any Pacific halibut that has had its head removed.

Amend IPHC Regulation Figure 2 to remove the head-off minimum size measurement.

IPHC Regulation Section 3 paragraph (l) would remain unchanged as follows:

(l) "net weight" of a halibut means the weight of halibut that is without gills and entrails, head-off, washed, and without ice and slime. If a halibut is weighed with the head on or with ice and slime, the required conversion factors for calculating net weight are a 2 percent deduction for ice and slime and a 10 percent deduction for the head;

ADDITIONAL DOCUMENTATION / REFERENCES

IPHC RARA Report, 2015. "Analysis of length-weight data from commercial sampling in 2015."

http://iphc.int/publications/rara/2015/RARA2015_09Lengthweight.pdf

IPHC RARA Report, 2016-1. Webster and Erikson. "Analysis of length-weight data from commercial sampling in 2016."

http://iphc.int/publications/rara/2016/IPHC-2016-RARA-26-R-2.8_Analysis_of_length_weight_data.pdf

IPHC RARA Report, 2016-2. Henry, Soderlund, Geernaert, Ranta, Kong, and Forsberg. "2016 IPHC fishery-independent setline survey."

http://iphc.int/publications/rara/2016/IPHC-2016-RARA-26-R-3.1_2016_IPHC_fishery_independent_survey.pdf

IPHC Technical Report 27, 1993. "Regulations of the Pacific Halibut Fishery, 1977-1992."

Stephen H. Hoag, Gordon J. Peltonen, and Lauri L. Sadorus. 50 p.

<http://www.iphc.int/publications/techrep/tech0027.pdf>

IPHC Technical Report 15, 1977. "Regulations of the Pacific Halibut Fishery, 1924-1976."

Bernard E. Skud. 47 p.

<http://www.iphc.int/publications/techrep/tech0015.pdf>

IPHC Scientific Report 55, 1974. "Minimum size and optimum age of entry for Pacific halibut."

Richard J. Myhre. 15 p.

<http://www.iphc.int/publications/scirep/SciReport0055.pdf>

APPENDICES

Appendix I: IPHC Letter to NOAA Fisheries Office of Law Enforcement, "Re: IPHC Size Limit Regulations Pertaining to Halibut with Heads Removed," 5 May 2016.

Appendix II: Excerpts on size limit regulations from IPHC Technical Reports 15 and 27.

APPENDIX I

IPHC Letter to NOAA Fisheries Office of Law Enforcement, "Re: IPHC Size Limit Regulations Pertaining to Halibut with Heads Removed," 5 May 2016

COMMISSIONERS:
 ROBERT ALVERSON
 SEATTLE, WA
 TED ASSU
 CAMPBELL RIVER, B.C.
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 JUNEAU, AK
 DAVID BOYES
 COURTENAY B.C.
 JEFFERY KAUFFMAN
 WASILLA, AK
 PAUL RYALL
 VANCOUVER, B.C.

INTERNATIONAL PACIFIC HALIBUT COMMISSION

ESTABLISHED BY A CONVENTION BETWEEN CANADA

AND THE UNITED STATES OF AMERICA

DIRECTOR
 BRUCE M. LEAMAN

2320 W. COMMODORE WY. STE 300
 SEATTLE, WA 98199-1287

TELEPHONE:
 (206) 634-1838

FAX:
 (206) 632-2983

May 5, 2016

Mr. Will Ellis, Assistant Director
 NOAA Office of Law Enforcement – Alaska Division
 P.O. Box 21767
 Juneau, AK 99802-1767

Re: IPHC Size Limit Regulations Pertaining to Halibut with Heads Removed

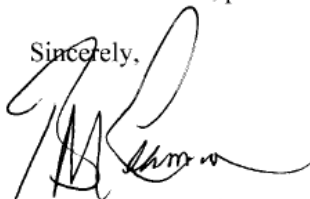
Dear Mr. Ellis:

Recently, the International Pacific Halibut Commission (Commission or IPHC) was apprised that NOAA Office of Law Enforcement (NOAA OLE) officers at times use IPHC Regulation section 13(1)(b), which states that "No person shall take or possess any halibut that with the head removed, is less than 24 inches (61.0 cm) as measured from the base of the pectoral fin at its most anterior point to the extreme end of the middle of the tail," to enforce legal size limits after heading of the landed catch has occurred.

The Commission is currently in the process of reviewing this part of the size limit regulation because it is not supported as an enforceable standard by the available data. In essence, we cannot say unequivocally that a 24-inch head-off halibut is 32 inches or longer with the head on, according to the research that was conducted when that regulation was introduced in 1973. The detail is that "95% of the fish" that were measured at 24 inches with the head off were \geq 32 inches with the head on. Until that review is complete, we recommend that enforcement officers discontinue the use of the 24-inch head-off measurement to enforce legal size limits. We apologize for this inconsistency in our regulations but believe we cannot ask your officers to enforce a regulation that does not provide an unequivocal basis for legality.

Should you or your staff have any questions regarding the Commission's intent or recommendation, please contact Kirsten MacTavish or Lara Erikson at the Commission office.

Sincerely,



Bruce Leaman, Ph.D.
 Executive Director

APPENDIX II

Excerpts on size limit regulations from IPHC Technical Reports 15 and 27

IPHC Technical Report 15, p.22-23

“Regulations of the Pacific Halibut Fishery, 1924-1976.” Bernard E. Skud. 47 p. (1977)

<http://www.iphc.int/publications/techrep/tech0015.pdf>

Size Limit

As previously indicated, the size limit of halibut was introduced in the regulations in 1940, whereas the Convention did not specify this as a conservation measure until 1953. The purpose of the size limit was to reduce the catch of halibut that were below the optimum harvesting size, but there also was an economic reason. The industry favored the regulation because small halibut were often of poorer shipping quality and of lower value in the marketplace. The restriction of the size limit initially was described by weight “. . . 5 pounds or over as computed with heads off, entrails removed or to halibut weighing 5 pounds 13 ounces or over as computed with heads on, entrails removed . . .”. In 1944, the regulation was changed and incorporated length “. . . shall also be limited to the halibut which with the head on are 26 inches or more in length as measured from the tip of the lower jaw to the extreme end of the middle of the tail or to halibut which with head off and entrails removed are 5 pounds or more in weight . . .”. The combination of the length and weight limits posed occasional problems, i.e., a fish with its head on could measure 26 inches but could be less than 5 pounds with head off and entrails removed. The problem was compounded by a weight loss after the fish were iced on the vessel or placed in frozen storage.

The increase in minimum size that was introduced in 1973 was based on a study of the growth and mortality of young halibut (Myhre 1974). The growth rate had increased measurably since 1940 and analyses showed that the yield could be increased by allowing the young fish to grow another year or two before exploitation. When the minimum size limit was increased in 1973, the weight restriction was deleted from the wording and length measurements for head-off and head-on were introduced. The head-on measurement (from the tip of the lower jaw to the end of the middle of the tail) was 32 inches. The head-off measurement (from the base of the pectoral fin to the middle of the tail) was 24 inches. To determine the head-off length, IPHC measured hundreds of halibut at and about 32 inches. The results showed that 95% of the fish that had a head-off measurement of 24 inches would be as long or longer than 32 inches with head-on, thereby minimizing the earlier problem associated with length and weight measurements. Furthermore, the percentage of shrinkage in length of frozen fish was less than the shrinkage in weight. Thus, the fishermen could use

the total length when the fish were caught, whereas the head-off measurement would apply in cold storage after the fish have been beheaded.

When the two length measurements were introduced in 1973, the Commission intended to eventually establish a single measurement to simplify enforcement of the minimum size regulation. This assumed that fishermen would become familiar with and accept the head-off measurement, even though it was less convenient. Respondents to a questionnaire distributed in 1976 indicated that over 60% of the fishermen would accept the head-off measurement and the staff proposed such a regulation at the 1977 Annual Meeting. However, the Conference Board, an advisory body of fishermen, opposed the change and the two measurements were retained.

APPENDIX II (con't)

IPHC Technical Report 27, p.26

“Regulations of the Pacific Halibut Fishery, 1977-1992.” Stephen H. Hoag, Gordon J. Peltonen, and Lauri L. Sadorus. 50 p. (1993)

<http://www.iphc.int/publications/techrep/tech0027.pdf>

Size Limit

A minimum legal size limit has been part of the Commission's regulations since 1940 when a limit of five pounds (head-off, eviscerated) was established (Skud 1977). In 1973, the size limit was increased to 32 inches (head-on) or 24 inches (head-off), and this limit remains in the regulations. The purpose of size limit regulations is to reduce the harvest of halibut below the optimum harvesting size in terms of growth and mortality (Myhre 1974). Recent IPHC studies suggest that the growth rate of halibut has declined during the 1980s, but that a change in the coastwide minimum size limit would not be beneficial to the stocks at the present time (Clark and Parma, Unpub.)³.

A regulation prohibiting the filleting, mutilation, or disfigurement of halibut in a manner that prevents the determination of the size limit was added to the regulations in 1979. Another regulation prohibiting the landing of halibut with its head removed was introduced in 1991 to assist the Commission in collecting data (length and otoliths) for assessment purposes. The regulation was only applied to Area 2A where fishermen tended to remove the heads at sea, and where assessment data needs were not being met.