L. Boitor

INTERNATIONAL PACIFIC HALIBUT COMMISSION

The International Pacific Halibut Commission: 96 years of science-based fishery management

David T. Wilson, PhD
Executive Director, IPHC

PICES Workshop – W2

Integrating biological research, fisheries science and management of Pacific halibut and other widely distributed fish species across the North Pacific in the face of climate and environmental variability

1) **IPHC** – who we are, what we do and where we are headed;

2) **Seek opportunities to engage** with Pacific halibut science and management agencies, to strengthen science links and data exchange. Specifically, to investigate pan-Pacific stock structure and migration of Pacific halibut.

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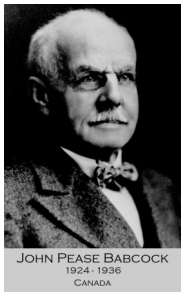
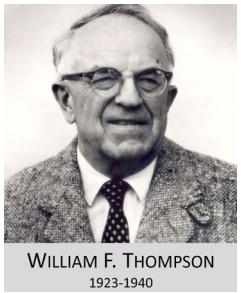
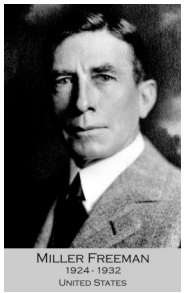
Convention for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea

- Intergovernmental organisation established by a Convention between Canada and the United States of America.
- The Convention was concluded in 1923 and entered into force that same year.

1st international agreement for joint management of a marine fishery.

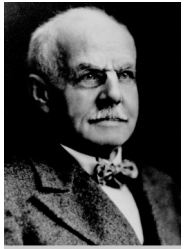




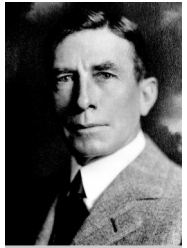


Commissoners

78 Commissioners


JOHN PEASE BABCOCK
1924 - 1936
CANADA


WILLIAM A. FOUND
1924 - 1936
CANADA


MILLER FREEMAN
1924 - 1932
UNITED STATES


HENRY O'MALLEY
1924 - 1933
UNITED STATES

Paul Ryall
(Vice-Chair)

Chris Oliver
(Chair)


Neil Davis

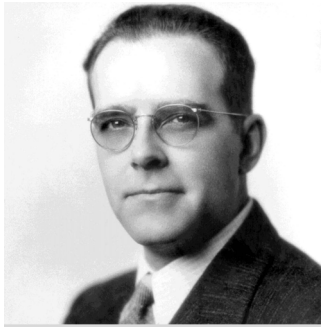

Peter DeGreef


Robert Alverson

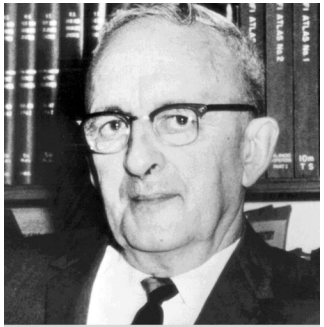

Richard Yamada

7 Executive Directors

WILLIAM F. THOMPSON
1923-1940



HENRY A. DUNLOP
1940-1963



F. HEWARD BELL
1963-1970

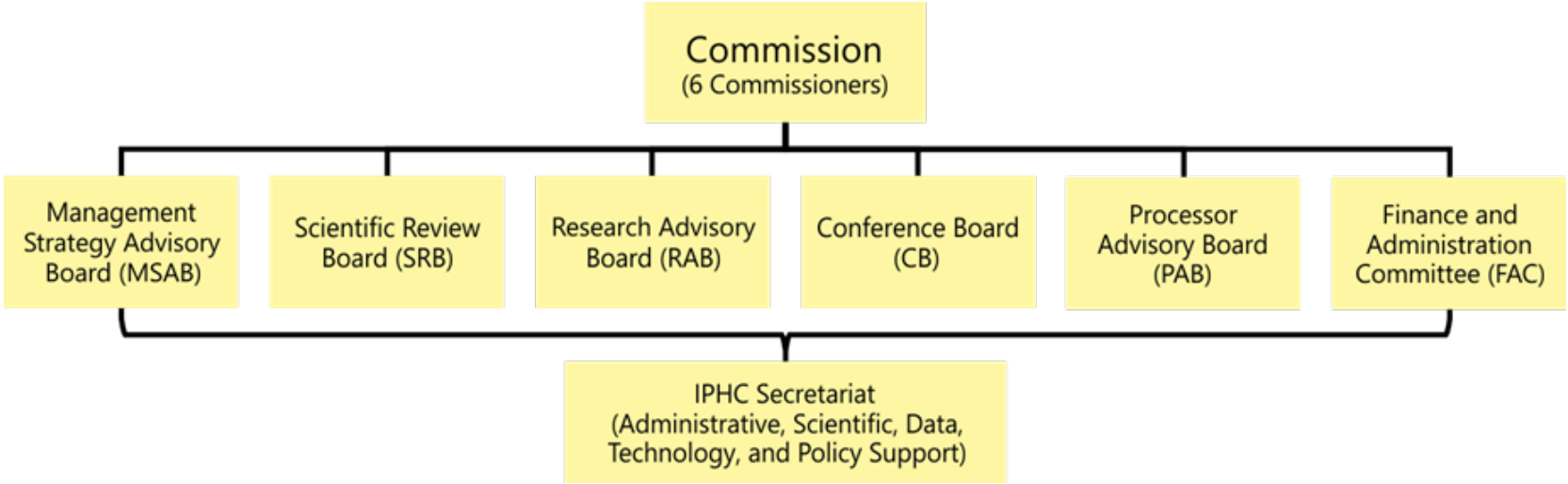
BERNARD E. SKUD
1970-1978

DONALD A MCCAUGHRAN
1978-1998

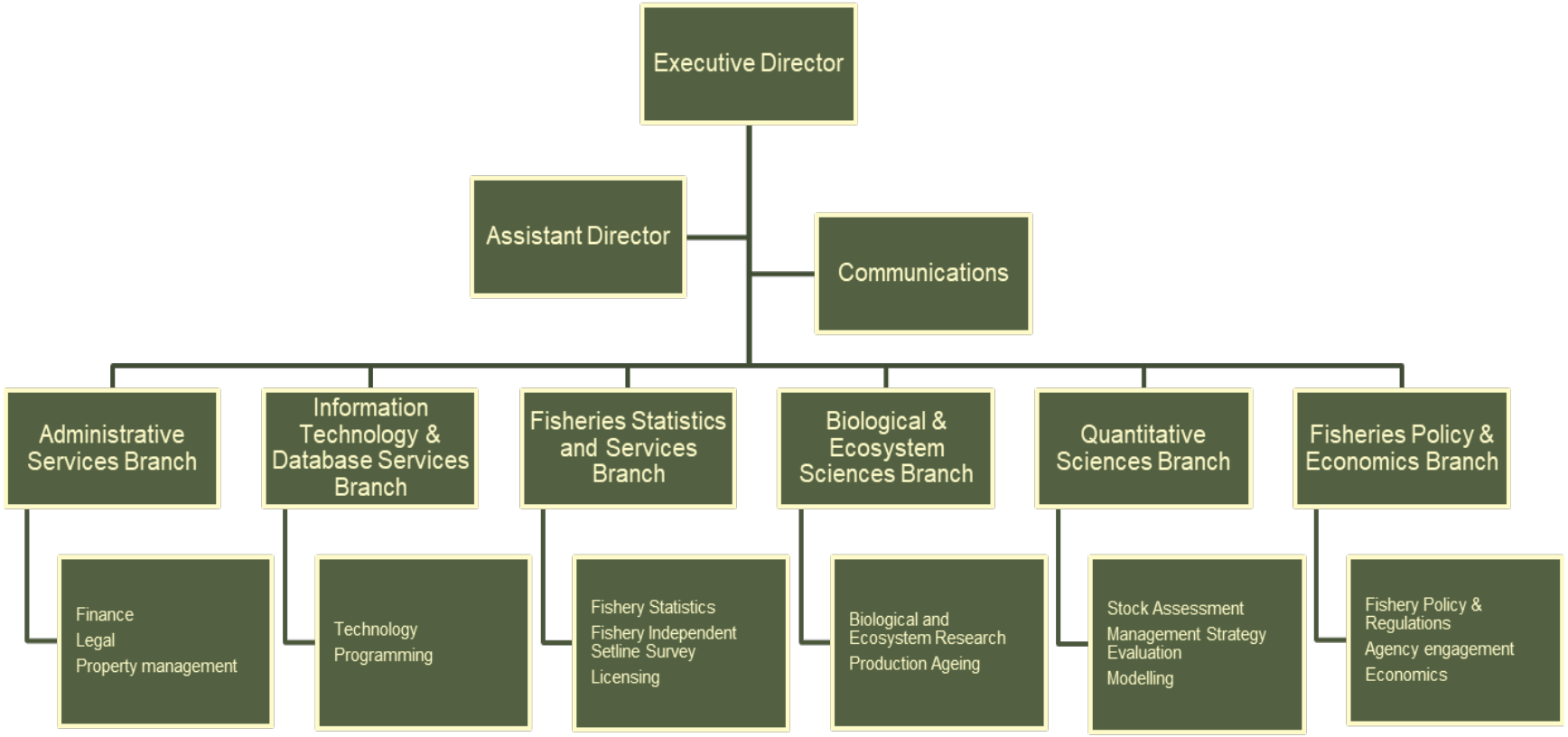
BRUCE M. LEAMAN
1997-2016

DAVID T. WILSON
2016-Current

Overall structure of the IPHC



Structure of the IPHC Secretariat



PICES Workshop – W2

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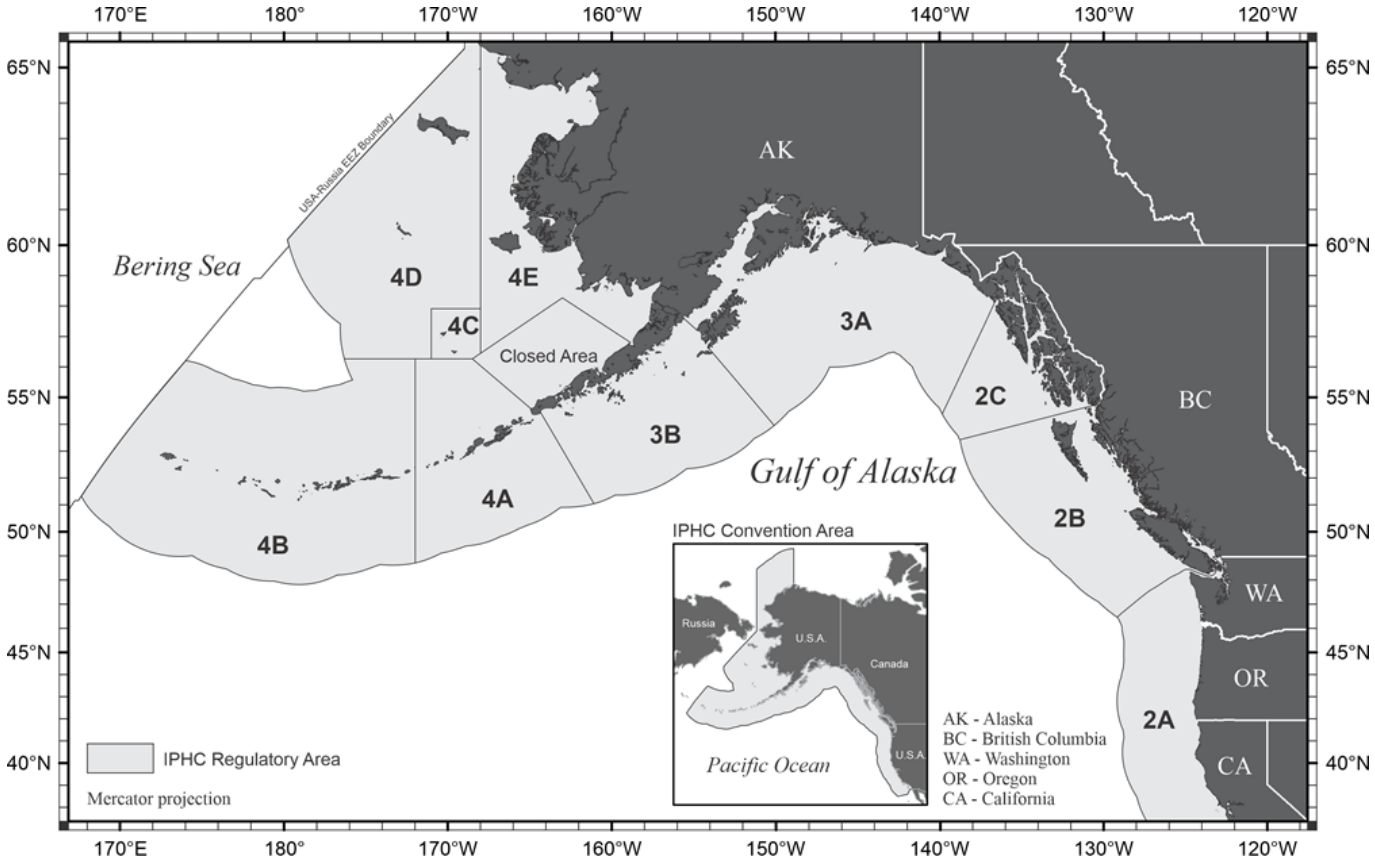
IPHC Convention Area



Mandate

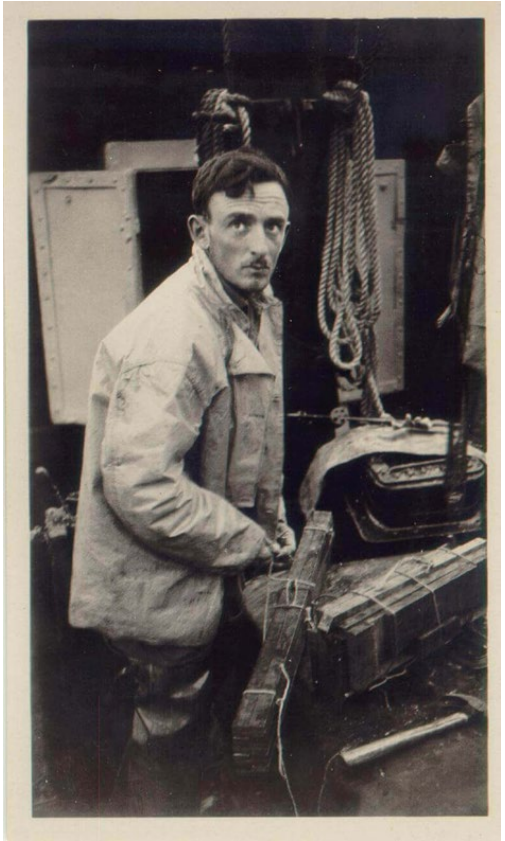
Data collection
- Fishery-independent
- Fishery-dependent

Research
- Biological
- Ecological

Stock Assessment

Management Strategy Evaluation

Provision of scientifically-based management advice



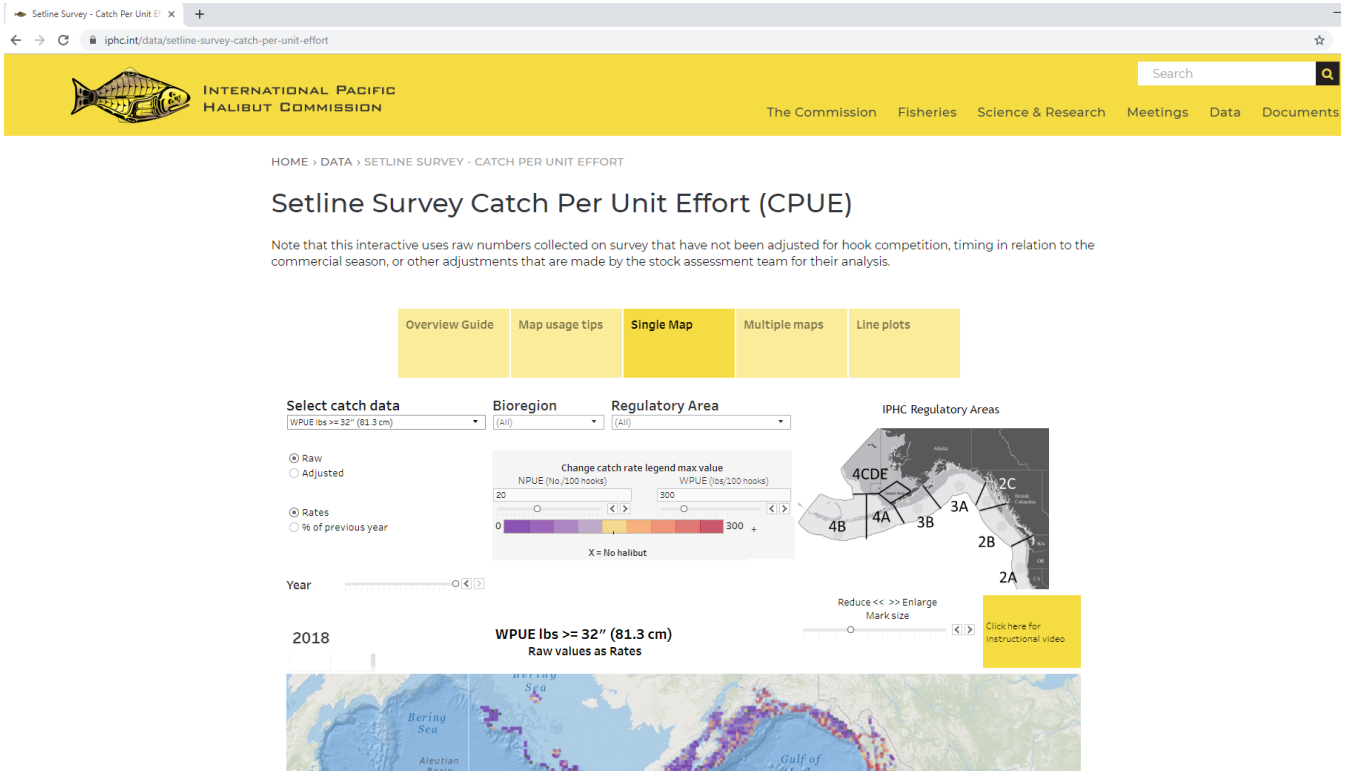
Fishery-Independent Setline Survey: 1993-2019

Fishery-Independent Setline Survey: 2019

4D
4E
4D Edge
4C
Closed Area
4A Edge
Shelikof
PWS
Seward
Yakutat
Gore Pt.
Portlock
3A
Fairweather
Albatross
Trinity
Semidi
Chignik
Shumagin
Sanak
3B
Unalaska
Attu
Adak
4A
4B
Sitka
Ketchikan
Ommaney
2C
Charlotte
St. James
2B
Goose Isl.
Vancouver
Washington
2A
Oregon

26 May – 22 Sep (similar to 2018 – 28 May to 15 Sept)
18 vessels (record with 5 new, 12 in 2018)
1,531 stations (record, 1,489 in 2018)
IPHC Regulatory Area 3A and 3B expansion
IPHC Regulatory Area 2C gear comparison

Fishery-Independent Setline Survey: 2019



https://www.iphc.int/data/setline-survey-catch-per-unit-effort

Fishery-Dependent Data

Fishery-Dependent Data

YEAR: 2018 (Example)

IPHC PACIFIC HALIBUT LOGBOOK

Complete this box for each page → TRIP# 2 PAGE: 1 of 1 VESSEL NAME: FLÉTAN STATE VESSEL#: 12345

US LOG FORM (MAY 2018)

Complete these boxes once for each trip

Captain's Name: JOHN D'EAU
Crew Names: RUBY RHIMUS
Crew Size (including Captain): 2

GEAR ID	GEAR DEFINITION (✓) FIXED HOOK: CONV	FIXED HOOK: TUB	AUTOLINE	JIGGER	SNAP-ON SNAP	DBELL	HANDLINE	LENGTH OF SKATE (feet)	HOOK: Size	Spacing (feet)	No. Per Skate
A		√						900	3	9	100
B		√						900	4	3.3	273
C											
D											

IPHC Initials/#:
Date:
Sample Number:

Gear	%	Hook Size	%
SS			
SN			

RECORD BY STRING (Beginning and End)

CATCH DATE Month	Day	TIME SET/ HAULED (optional)	LOCATION BEGINNING OF STRING Latitude Longitude	END OF STRING Latitude Longitude	Beg/End DEPTH (Fath.)	GEAR ID	Hauled (IPHC-office use only)	NUMBER OF SKATES Set	Lost	TARGET SPECIES	Reason Code	LEGAL-SIZED PACIFIC HALIBUT CATCH Net Lbs.	or Numbers	LBS DISCARDED IN EXCESS OF IFQ	SABLEFISH SOLD (Round Wt ☐ Western cut ☐ Eastern cut ☐)	MAMMALS SIGHTED WHILE HAULING (Number)	NUMBER DAMAGED
4	11		50°30.87′ 179°56.14′E	50°32.50′ 179°55.66′E	40-50	A		12.5	1.5	HAL		6020	274		Wt 0 No	PM-Sperm 0 OO-Orca 2 Other 0	200-P. Hal 0 710-Sable 0 Other Fish 5* *110 Food 307-Hooks 0
4	11		50°31.48′ 179°55.74′E	50°32.11′ 179°53.12′E	115-139	A		20	0	HAL		10840	455		Wt 0 No	PM-Sperm 0 OO-Orca 0 Other 1 Steller SL	200-P. Hal 0 710-Sable 0 Other Fish 0 307-Hooks 0
4	12		50°30.37′ 179°53.02′W	50°33.51′ 179°52.42′W	209-220	B		30	0	BO		384	17		Wt 172 No 47	PM-Sperm 0 OO-Orca 0 Other 0	200-P. Hal 0 710-Sable 3 Other Fish 0 307-Hooks 0
4	13		no fishing	weather											Wt No	PM-Sperm OO-Orca Other	200-P. Hal 710-Sable Other Fish 307-Hooks
4	14		50°32.81′ 179°56.59′E	50°31.74′ 179°58.08′E	58-90	A		12	0	HAL		7550	311	150	Wt 0 No	PM-Sperm OO-Orca Other	200-P. Hal 710-Sable Other Fish 307-Hooks

Date of Sale month	day	Dealer	Dealer Code	Unloading Port	Port Code	Weight Sold Pacific Halibut	Sablefish
5	16	Island Cold Storage		Adak		24848	183

IPHC will forward AK Sablefish information to Sablefish Assessment, Auke Bay Lab

Capt. signature

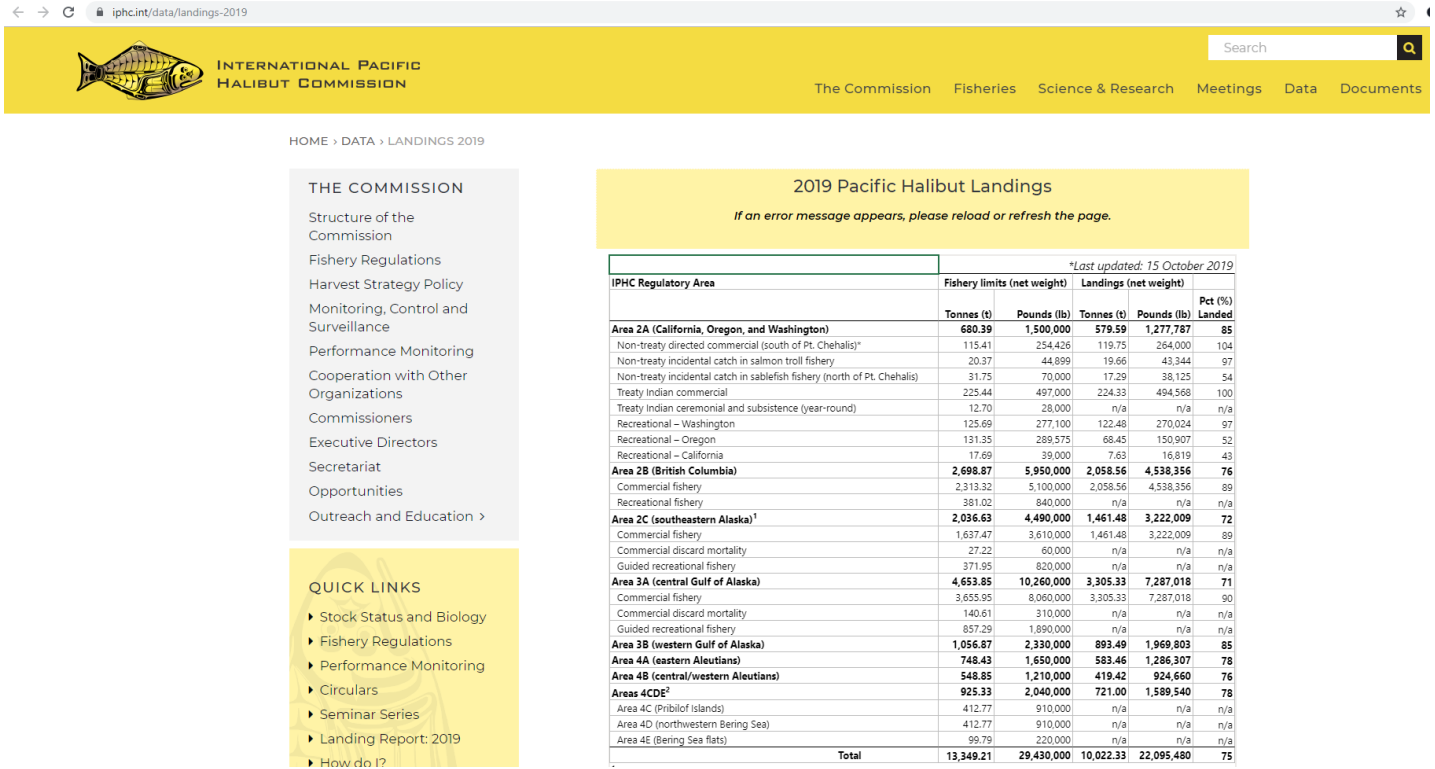
PNOL
TEC

Complete at trip end

COMMENTS:

PRELIMINARY 2019 removals

(net weight)



iphc.int/data/landings-2019

INTERNATIONAL PACIFIC HALIBUT COMMISSION

Search

The Commission | Fisheries | Science & Research | Meetings | Data | Documents

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THE COMMISSION

- Structure of the Commission
- Fishery Regulations
- Harvest Strategy Policy
- Monitoring, Control and Surveillance
- Performance Monitoring
- Cooperation with Other Organizations
- Commissioners
- Executive Directors
- Secretariat
- Opportunities
- Outreach and Education ›

QUICK LINKS

- Stock Status and Biology
- Fishery Regulations
- Performance Monitoring
- Circulars
- Seminar Series
- Landing Report: 2019
- How do I?

2019 Pacific Halibut Landings

If an error message appears, please reload or refresh the page.

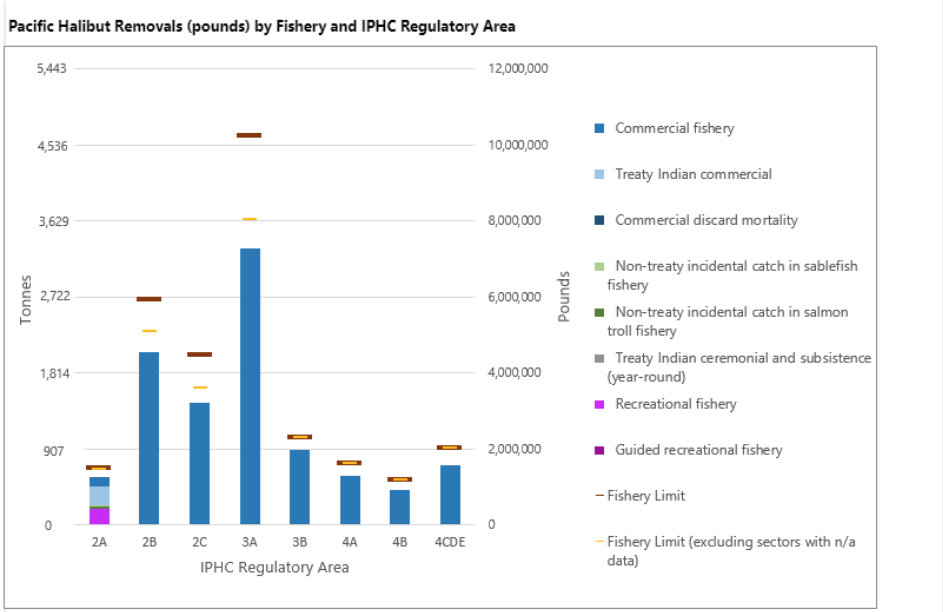
*Last updated: 15 October 2019

IPHC Regulatory Area	Fishery limits (net weight)		Landings (net weight)		
	Tonnes (t)	Pounds (lb)	Tonnes (t)	Pounds (lb)	Pct (%) Landed
Area 2A (California, Oregon, and Washington)	**680.39**	**1,500,000**	**579.59**	**1,277,787**	**85**
Non-treaty directed commercial (south of Pt. Chehalis)*	115.41	254,426	119.75	264,000	104
Non-treaty incidental catch in salmon troll fishery	20.37	44,899	19.66	43,344	97
Non-treaty incidental catch in sablefish fishery (north of Pt. Chehalis)	31.75	70,000	17.29	38,125	54
Treaty Indian commercial	225.44	497,000	224.33	494,568	100
Treaty Indian ceremonial and subsistence (year-round)	12.70	28,000	n/a	n/a	n/a
Recreational – Washington	125.69	277,100	122.48	270,024	97
Recreational – Oregon	131.35	289,575	68.45	150,907	52
Recreational – California	17.69	39,000	7.63	16,819	43
Area 2B (British Columbia)	**2,698.87**	**5,950,000**	**2,058.56**	**4,538,356**	**76**
Commercial fishery	2,313.32	5,100,000	2,058.56	4,538,356	89
Recreational fishery	381.02	840,000	n/a	n/a	n/a
Area 2C (southeastern Alaska)[1]	**2,036.63**	**4,490,000**	**1,461.48**	**3,222,009**	**72**
Commercial fishery	1,637.47	3,610,000	1,461.48	3,222,009	89
Commercial discard mortality	27.22	60,000	n/a	n/a	n/a
Guided recreational fishery	371.95	820,000	n/a	n/a	n/a
Area 3A (central Gulf of Alaska)	**4,653.85**	**10,260,000**	**3,305.33**	**7,287,018**	**71**
Commercial fishery	3,655.95	8,060,000	3,305.33	7,287,018	90
Commercial discard mortality	140.61	310,000	n/a	n/a	n/a
Guided recreational fishery	857.29	1,890,000	n/a	n/a	n/a
Area 3B (western Gulf of Alaska)	**1,056.87**	**2,330,000**	**893.49**	**1,969,803**	**85**
Area 4A (eastern Aleutians)	**748.43**	**1,650,000**	**583.46**	**1,286,307**	**78**
Area 4B (central/western Aleutians)	**548.85**	**1,210,000**	**419.42**	**924,660**	**76**
Areas 4CDE[2]	**925.33**	**2,040,000**	**721.00**	**1,589,540**	**78**
Area 4C (Pribilof Islands)	412.77	910,000	n/a	n/a	n/a
Area 4D (northwestern Bering Sea)	412.77	910,000	n/a	n/a	n/a
Area 4E (Bering Sea flats)	99.79	220,000	n/a	n/a	n/a
Total	**13,349.21**	**29,430,000**	**10,022.33**	**22,095,480**	**75**

https://www.iphc.int/data/landings-2019

PRELIMINARY 2019 removals

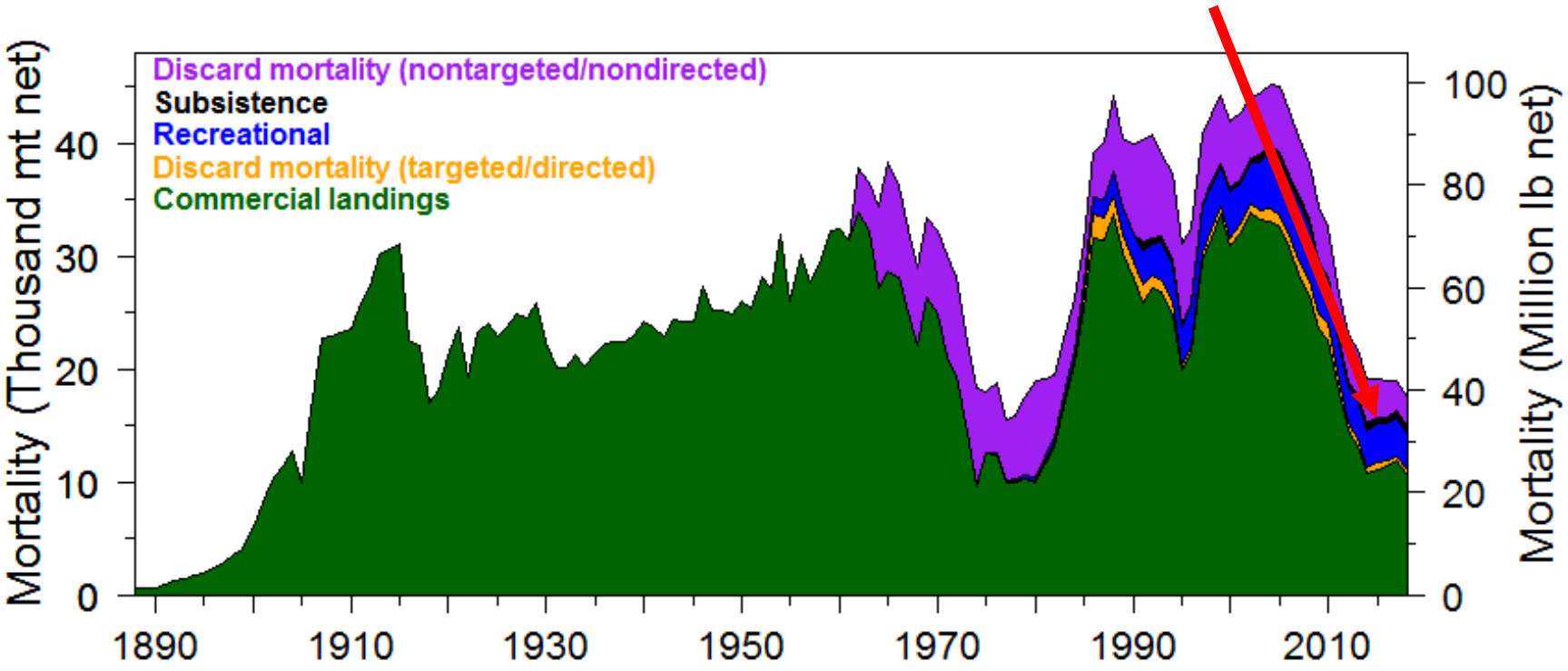
(net weight)



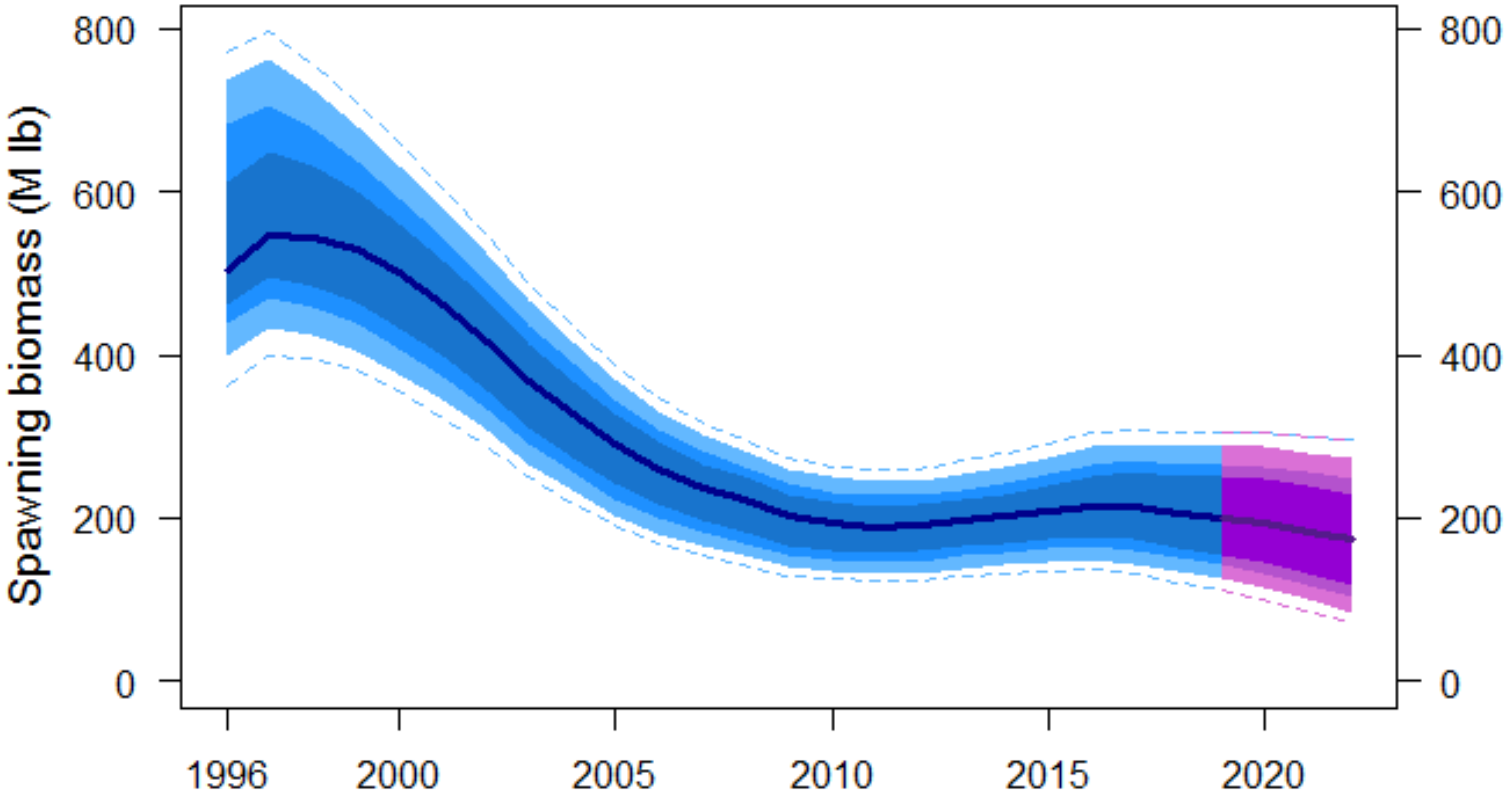
2018 Landing Report Summary

https://www.iphc.int/data/landings-2019

Estimated historical mortality sources

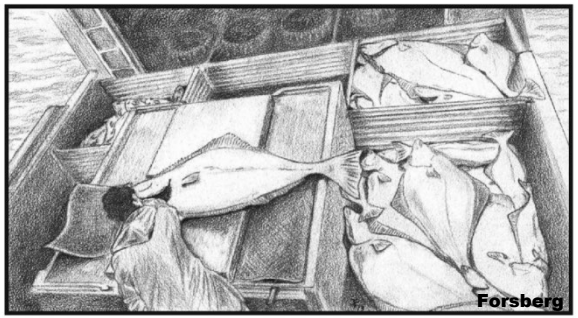


Projections – Reference ($F_{46\%}$, 40 Mlb TCEY)



Annual mortality limits

Estimated Yield



Directed Fisheries

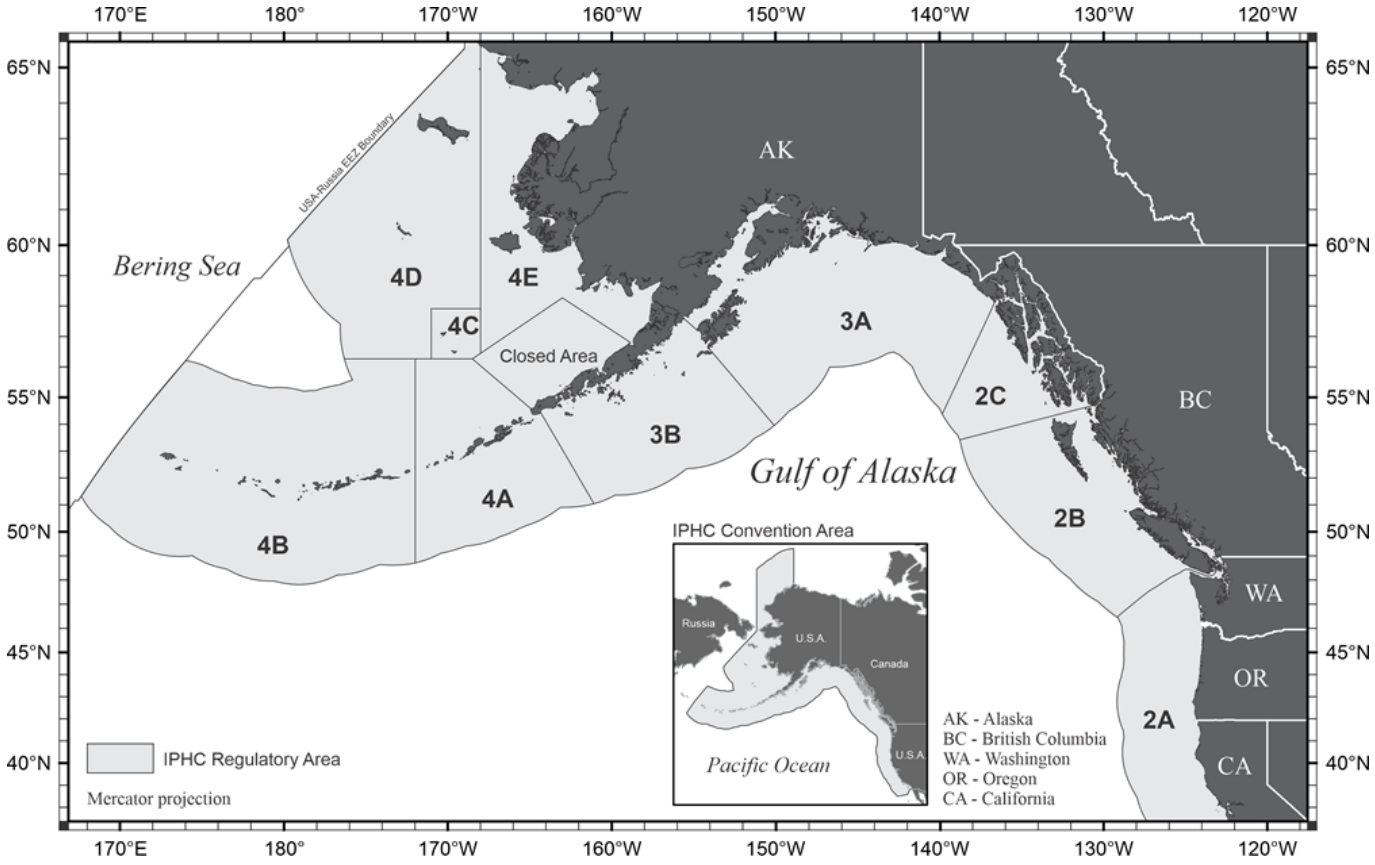
Non-IPHC regulated removals

Management

- **Minimum size limit**: 32” (~81.3 cm) Commercial
- **Commercial seasons**: March-November
- **Gear**: Longline (and pot) gear legal

- **Quota**: IFQ/ITQ in AK and BC (Derby in WA/OR/CA)
  - Trawl gear must discard all Pacific halibut
- **Other**: Recreational, personal use/subsistence managed differently by area

IPHC Convention Area

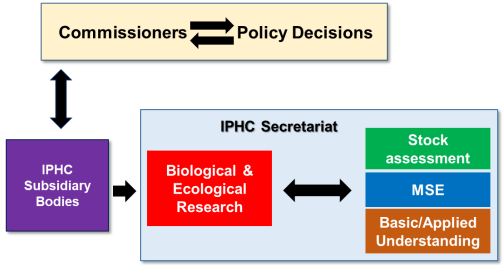


Five-year Biological and Ecosystem Science Research Plan

5-Year Biological and Ecosystem Science Research Plan

Primary Research Areas	*Main Objectives*	*Management implications*
Migration	Improve understanding of migration throughout all life stages (larval, juvenile, adult feeding and reproductive migrations)	Stock distribution, regional management
Reproduction	Information on sex ratios of commercial landings and improved maturity estimates	Female stock spawning biomass
Growth	Improve understanding of factors responsible for changes in size-at-age and development of tools for monitoring growth and physiological condition	Biomass estimates
DMRs and discard survival	Improve estimates of DMRs in the directed longline and guided recreational fisheries	Discard mortality estimates
Genetics and genomics	Improve understanding of the genetic structure of the population and create genomic tools (genome)	Stock distribution, local adaptation

Integration of biological research, stock assessment, and policy



Biological research		Stock assessment	Stock assessment MSE
Research areas	*Research outcomes*	*Relevance for stock assessment*	*Inputs to stock assessment and MSE development*
Migration	Larval distribution Juvenile and adult migratory behavior and distribution	Geographical selectivity Stock distribution	Information for structural choices Recruitment indices Migration pathways and rates Timing of migration
Reproduction	Sex ratio Spawning output Age at maturity	Spawning biomass scale and trend Stock productivity Recruitment variability	Sex ratio Maturity schedule Fecundity
Growth	Identification of growth patterns Environmental effects on growth Growth influence in size-at-age variation	Temporal and spatial variation in growth Yield calculations Effects of ecosystem conditions Effects of fishing	Predicted weight-at-age Mechanisms for changes in weight-at-age
Discard Survival	Bycatch survival estimates Discard mortality rate estimates	Scale and trend in mortality Scale and trend in productivity	Bycatch and discard mortality estimates Variability in bycatch and uncertainty in discard mortality estimates
Genetics and Genomics	Genetic structure of the population Sequencing of the Pacific halibut genome	Spatial dynamics Management units	Information for structural choices

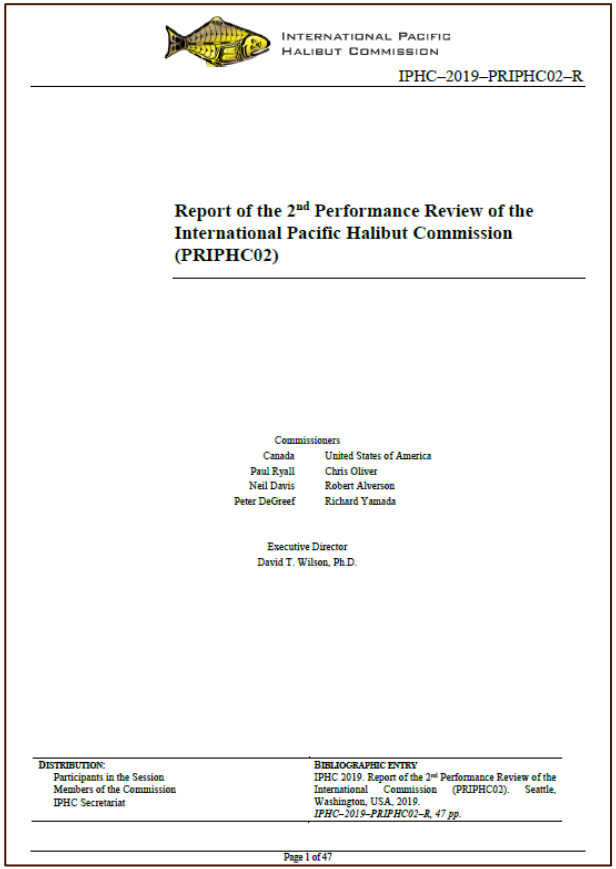
PICES Workshop – W2

Integrating biological research, fisheries science and management of Pacific halibut and other widely distributed fish species across the North Pacific in the face of climate and environmental variability

1) **IPHC** – who we are, what we do and **<u>where we are headed</u>**;

2) **Seek oppo** ga stern Pacific halibut science an age strengthen science links and d pe investigate pan-Pacific sto mi Pacific halibut.

2nd Performance Review of the IPHC



INTERNATIONAL PACIFIC HALIBUT COMMISSION

IPHC–2019–PRIPHC02–R

Report of the 2nd Performance Review of the International Pacific Halibut Commission (PRIPHC02)

Commissioners

Canada	United States of America
Paul Ryall	Chris Oliver
Neil Davis	Robert Alverson
Peter DeGreef	Richard Yamada

Executive Director
David T. Wilson, Ph.D.

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Participants in the Session
Members of the Commission
IPHC Secretariat

BIBLIOGRAPHIC ENTRY
IPHC 2019. Report of the 2nd Performance Review of the International Pacific Halibut Commission (PRIPHC02). Seattle, Washington, USA. 2019. *IPHC–2019–PRIPHC02–R*, 47 pp.

Page 1 of 47

26 Recommendations for further improvement

6 of direct relevance to the work of PICES and this workshop

2nd Performance Review of the IPHC

Science: Status of living marine resources

PRIPHC02–Rec.03 (para. 44) The PRIPHC02 **RECOMMENDED** that opportunities to engage with western Pacific halibut **COLLABORATE: RUSSIA/JAPAN** strengthen science links and data exchange. Specifically, consider options to investigate pan-Pacific stock structure and migration of Pacific halibut.

PRIPHC02–Rec.04 (para. 45) The PRIPHC02 **RECOMMENDED** that:

a) further efforts be made to lead and collaborate on research to assess the ecosystem impacts of Pacific halibut fisheries on incidentally caught species (retained and/or discarded); **ECOSYSTEM IMPACTS**

b) where feasible, this research be incorporated within the IPHC's 5-Year Research Plan (https://www.iphc.int/uploads/pdf/besrp/2019/iphc-2019-besrp-5yp.pdf);

c) findings from the IPHC Secretariat research and that of the Contracting Parties be readily accessible via the IPHC website.

2nd Performance Review of the IPHC

Conservation and Management: Consistency between scientific advice and fishery Regulations adopted

PRIPHC02–Rec.10 (para. 82) The PRIPHC02 **RECOMMENDED** that the development of MSE to underpin multi-year (strategic) decision-making be continued, and as multi-year decision making

MANAGEMENT STRATEGY EVALUATION: MULTI-YEAR DECISION MAKING

consideration of biological and fishery uncertainties) for future MSE iterations and regularised multi-year stock assessments.

PRIPHC02–Rec.11 (para. 83) The PRIPHC02 **RECOMMENDED** that ongoing work on the MSE process be prioritised to ensure

MSE: FINALISE

amework/procedure with minimal room for ambiguous interpretation, and robust pre-agreed mortality limit setting frameworks.

2nd Performance Review of the IPHC

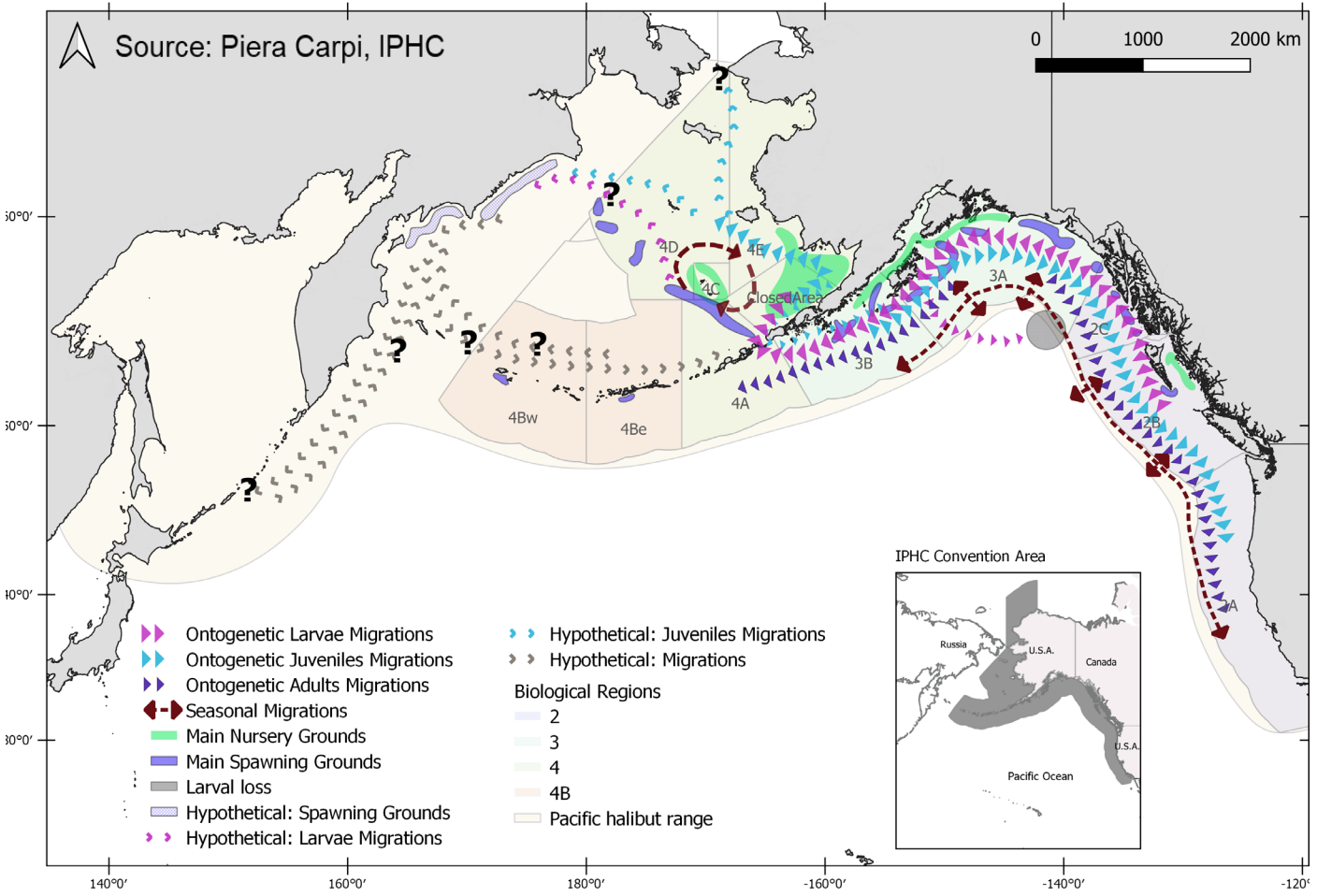
International cooperation: Relationship to non-Contracting Parties

PRIPHC02–Rec.21 (para. 146) The [illegible] mission prioritise scientific work to confir[illegible]

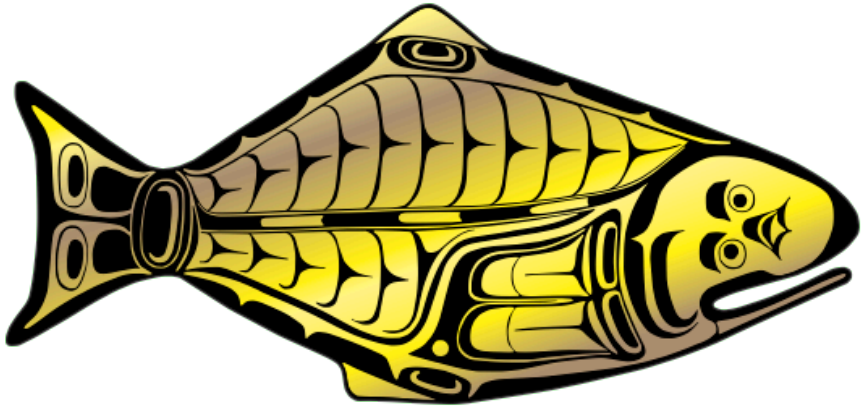
COLLABORATE: RUSSIA/JAPAN

PRIPHC02–Rec.22 (para. 147) The PRIPHC02 **RECOMMENDED** that if the full range of the Pacific halibut stock [illegible] Contracting Parties invite collaboration w[illegible]ock, to ensure science and management includes accurate data regarding all removals from the stock.

COLLABORATE: RUSSIA/JAPAN


Source: Piera Carpi, IPHC
0
1000
2000 km
4D
4E
4C
Closed Area
3A
2C
3B
4A
4Bw
4Be
2B
2A
Ontogenetic Larvae Migrations
Ontogenetic Juveniles Migrations
Ontogenetic Adults Migrations
Seasonal Migrations
Main Nursery Grounds
Main Spawning Grounds
Larval loss
Hypothetical: Spawning Grounds
Hypothetical: Larvae Migrations
Hypothetical: Juveniles Migrations
Hypothetical: Migrations
Biological Regions
2
3
4
4B
Pacific halibut range
IPHC Convention Area
Russia
U.S.A.
Canada
U.S.A.
Pacific Ocean
140°0′
160°0′
180°0′
-160°0′
-140°0′

INTERNATIONAL PACIFIC



HALIBUT COMMISSION