



INTERNATIONAL PACIFIC



HALIBUT COMMISSION

MSE

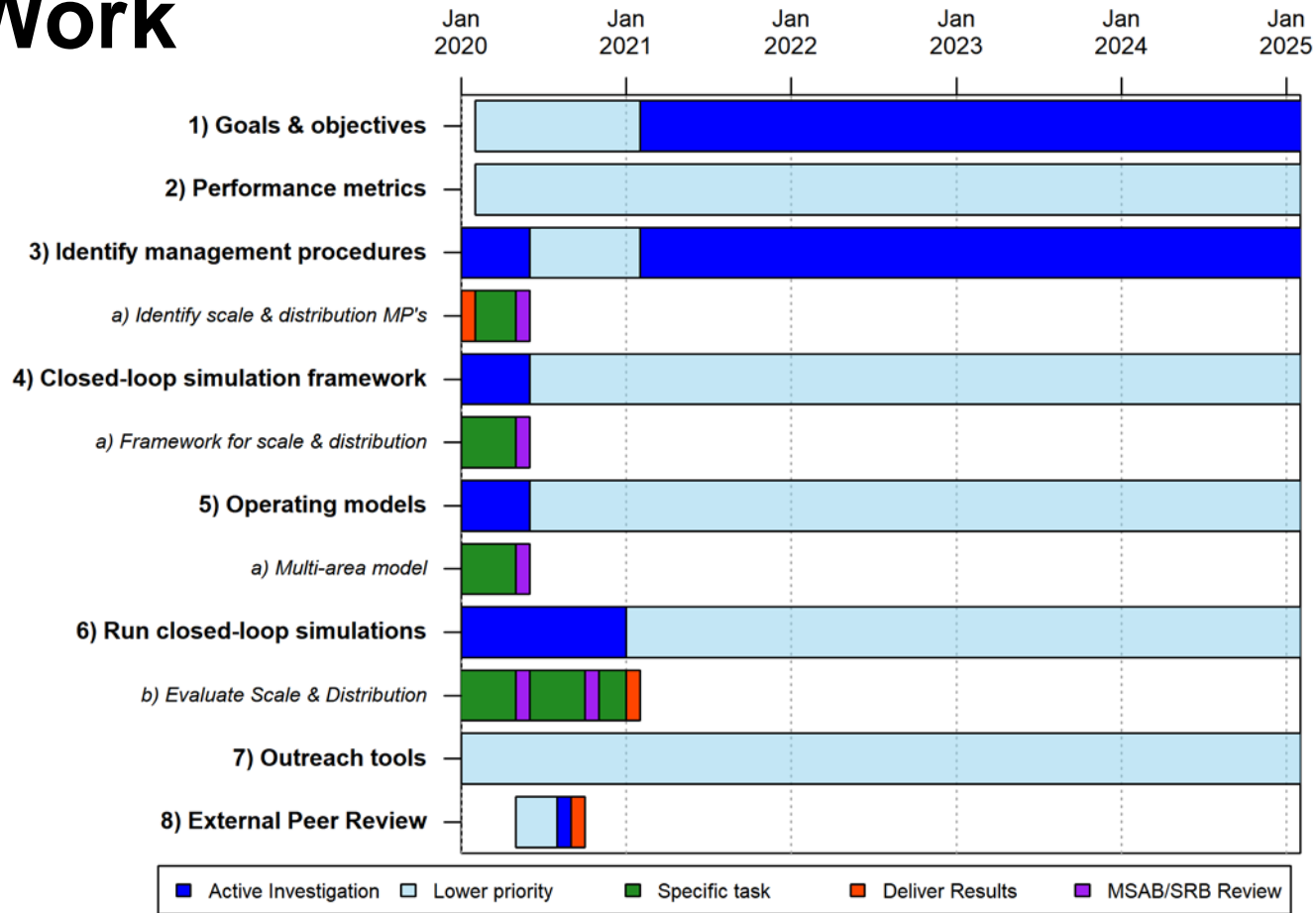
Program of Work

Agenda Item 7

IPHC-2020-MSAB015-10

Program of Work

- Eight tasks



1. Goals & Objectives

- Will reopen this topic in 2021
- Discuss any concerns as we evaluate results



2. Performance Metrics

- Derived from measurable objectives
- Being coded as part of the framework
- Used to evaluate results



3. Identify Management Procedures

- To discuss today (at end of presentation)



4. Closed-loop simulation framework

- Discussed earlier this meeting
- Additional development, testing, and tuning needed



5. Operating Model

- Part of the closed-loop simulation
- Conditioning multi-area models



6. Run closed-loop simulations

- Production runs once framework, models, and MPs finalized
- Testing done during this as well
- Compiling outputs and displays



7. Outreach tools

- Develop tools that will help to communicate the MSE process, results, and outcomes
- Work closely with MSAB members



8. External peer review

- Currently searching for a reviewer



2020

May 2020 MSAB Meeting (MSAB015)

Review Goals and Objectives (Distribution & Scale)

Review simulation framework

Review multi-area model

Review preliminary results

Identify MPs (Distribution & Scale)

June 2020 SRB Meeting (SRB016)

Review simulation framework

Review multi-area model

Review preliminary results

September 2020 SRB Meeting (SRB017)

Review penultimate results

October 2020 MSAB Meeting (MSAB016)

Review final results

Provide recommendations on MPs for scale and distribution

Annual Meeting 2021

Presentation of first complete MSE product to the Commission

Recommendations on Scale and Distribution MP

Management Procedures from MSAB014-R

- See [IPHC-2019-MSAB014-R](#) Appendix VI

Proposed MP	Coastwide	Regional	IPHC Regulatory Area
Commission Interim MP	SPR 30:20		<ul style="list-style-type: none"> • O32 stock distribution • Proportional Relative harvest rates (starting with 1.0 for 2-3A, 0.75 for 3B-4) relative to below • 1.65 Mlbs floor in 2A (para 69c AM095-R) • Formula percentage for 2B (para 69b AM095-R)
MP 1	SPR 30:20 Max FI = 36% 15% max change		<ul style="list-style-type: none"> • 15% maximum change • O32 stock distribution with 3 year weighted average (50:30:20) • Relative HR (1 for 2-3A, 0.75 for 3B-4)
MP 2	...		



Elements of MPs from MSAB014-R

- A coastwide constraint using a SUFD approach with a max change in the TCEY of 15%;
- evaluating different relative harvest rates across IPHC Reg Areas or Biological Regions;
- distributing the TCEY directly to IPHC Regulatory Area;
- A fixed shares concept for all or some IPHC Regulatory Areas, Biological Regions, or Management Zones with options to distribute the TCEY to the areas without a fixed share. The determination of these shares may be fixed or varying over time;
- A maximum fishing intensity defined by an SPR of 36% to act as a buffer when distributing the TCEY to IPHC Regulatory Areas.
- a constraint applied to the TCEY for each IPHC Regulatory Area using a slow-up, fast-down approach with a maximum change in the TCEY of 15%;
- using O32 estimates of stock distribution or “all sizes” estimates of stock distribution from the modelled survey results;
- evaluating different relative harvest rates across IPHC Reg Areas or Biological Regions
- calculating shares across Biological Regions, Management Zones, or IPHC Regulatory Areas using approaches that blend multiple sources of information (e.g. using historical TCEYs and stock distribution results for all IPHC Regulatory Area, a 5-year window of estimated stock distribution, etc.);
- the importance of the order of applying elements in the distribution procedure when limiting the maximum SPR (i.e. using a buffer).



Elements of MPs from MSAB014-R

- a constraint applied to the TCEY for each IPHC Regulatory Area using a slow-up, fast-down approach;
- a constraint applied to the TCEY for each IPHC Regulatory Area implementing a maximum change in the TCEY of 15%;
- a maximum fishing intensity defined by an SPR of 40% to act as a buffer when distributing the TCEY to IPHC Regulatory Areas;
- adjusting relative harvest rates to reflect current stock productivity (note that this will be explored before MSAB015);
- using trends in fishery CPUE to adjust allocation percentages by IPHC Regulatory Area (note that this will be explored before MSAB015);
- additional approaches to first distribute the TCEY to Biological Region or Management Zone.



MPs for MSAB016

- Are these elements still relevant?
- Do any elements need to be added?
- Develop a prioritized list of MPs for MSAB016

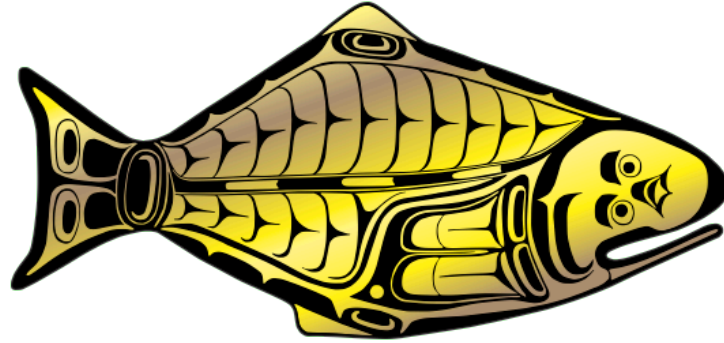


Recommendations

- **NOTE** paper IPHC-2020-MSAB015-10 which describes the IPHC Program of Work for MSAB related activities for the periods 2020 and 2021–24.
- **NOTE** the delivery date of January 2021 (97th Annual Meeting) for the first complete MSE results including Scale and Distribution components of the management procedure for potential adoption by the Commission and subsequent implementation.
- **RECOMMEND** additions or deletions to this Program of Work, or changes to the timeline, priorities, and deliverables.
- **RECOMMEND** management procedures with coastwide scale and distribution elements to simulate in 2020 and evaluate at MSAB016.



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Slides from MSAB014



Tools for use in the development of management procedures

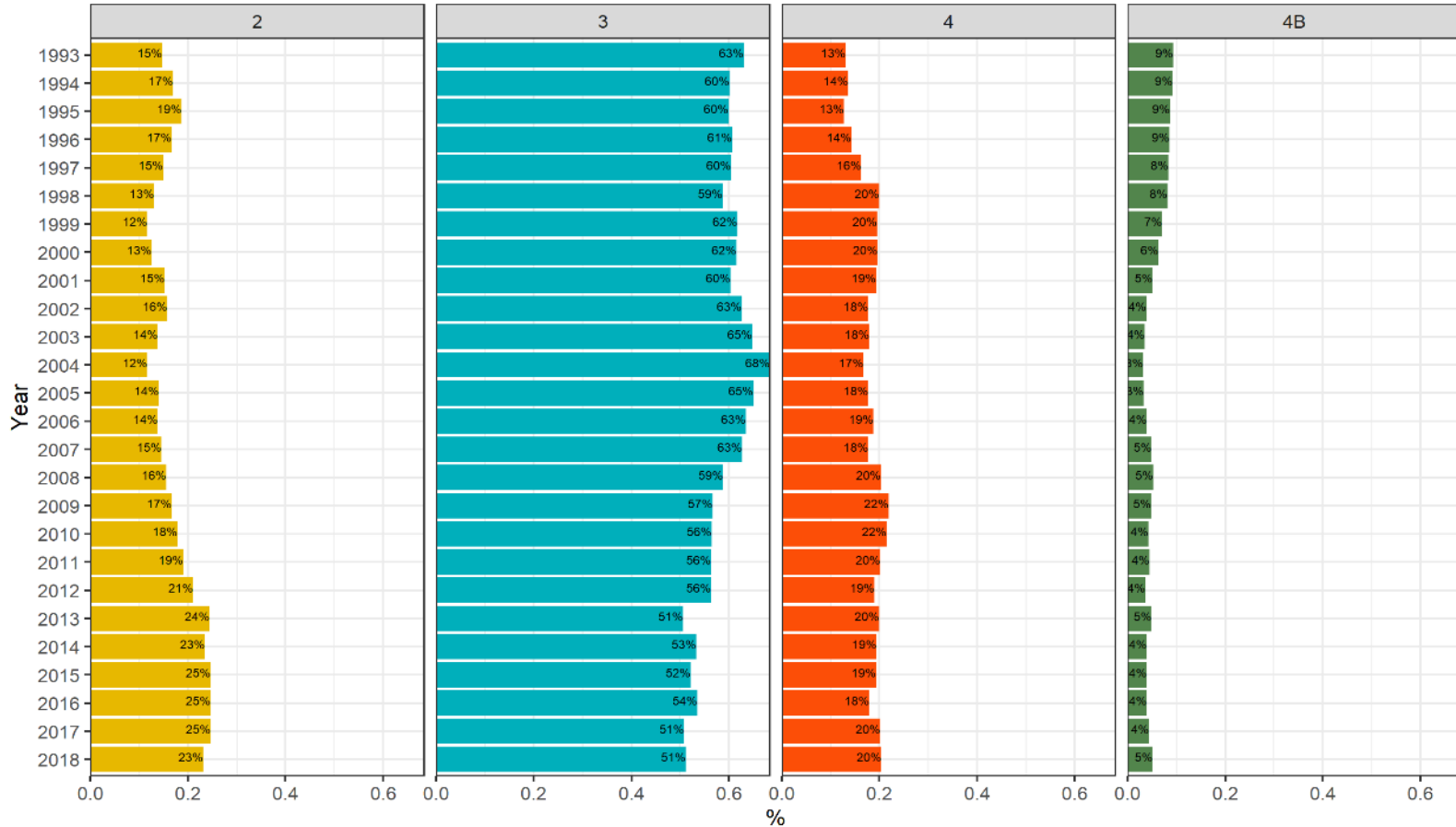
	Coastwide	Biological Region	Regulatory areas	Other scale
SPR	X			
30:20 CR; 25:10 CR; 40:20 CR; ...	X			
Constraints to CRs	X	X	X	X
Relative Biomass estimates from FISS survey		X	X	X
O32:O26 ratios, O32 WPUE or other proxies	X	X	X	X
Trends in WPUE/NPUE from FISS survey	X	X	X	X
Trends in CPUE	X	X	X	X
Area specific catch limits		X	X	X
Percentage allocation		X	X	X
Floor on the TCEY	X	X	X	X
Stair steps to modify TCEY at specific trigger ref points	X	X	X	X
Relative harvest rate		X	X	X
...				

Possible scale, but not relevant/desirable

Appropriate scale



Historical perspective: Stock distribution (WPUE all sizes by region)



Mean last 5
 R2=24%
 R3=52%
 R4=19%
 R4B=4%

Historical perspective: Stock distribution (WPUE all sizes by reg area relative to each biological region)

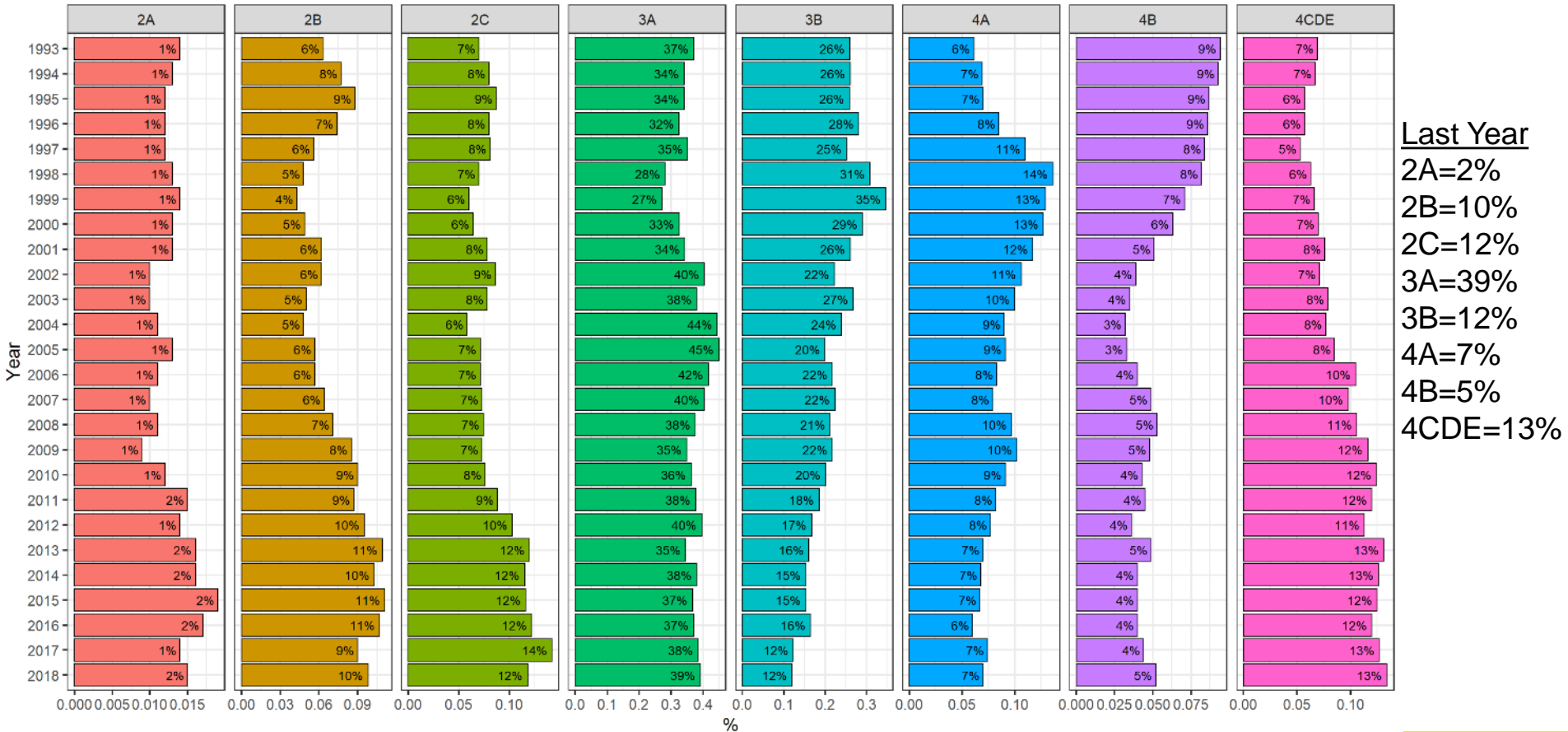


2A=7%
 2B=45%
 2C=48%

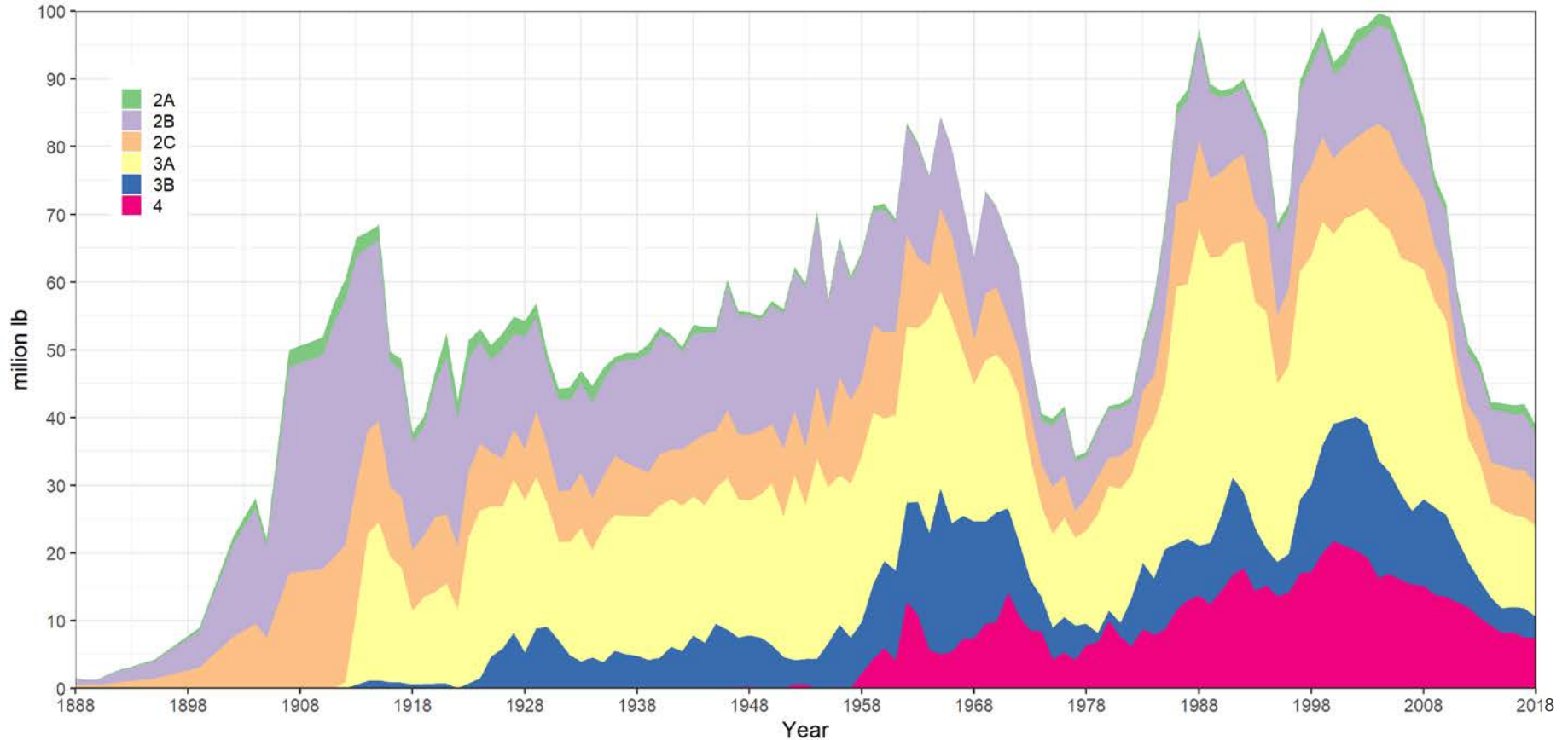
3A=80%
 3B=20%

4A=30%
 4CDE=70%

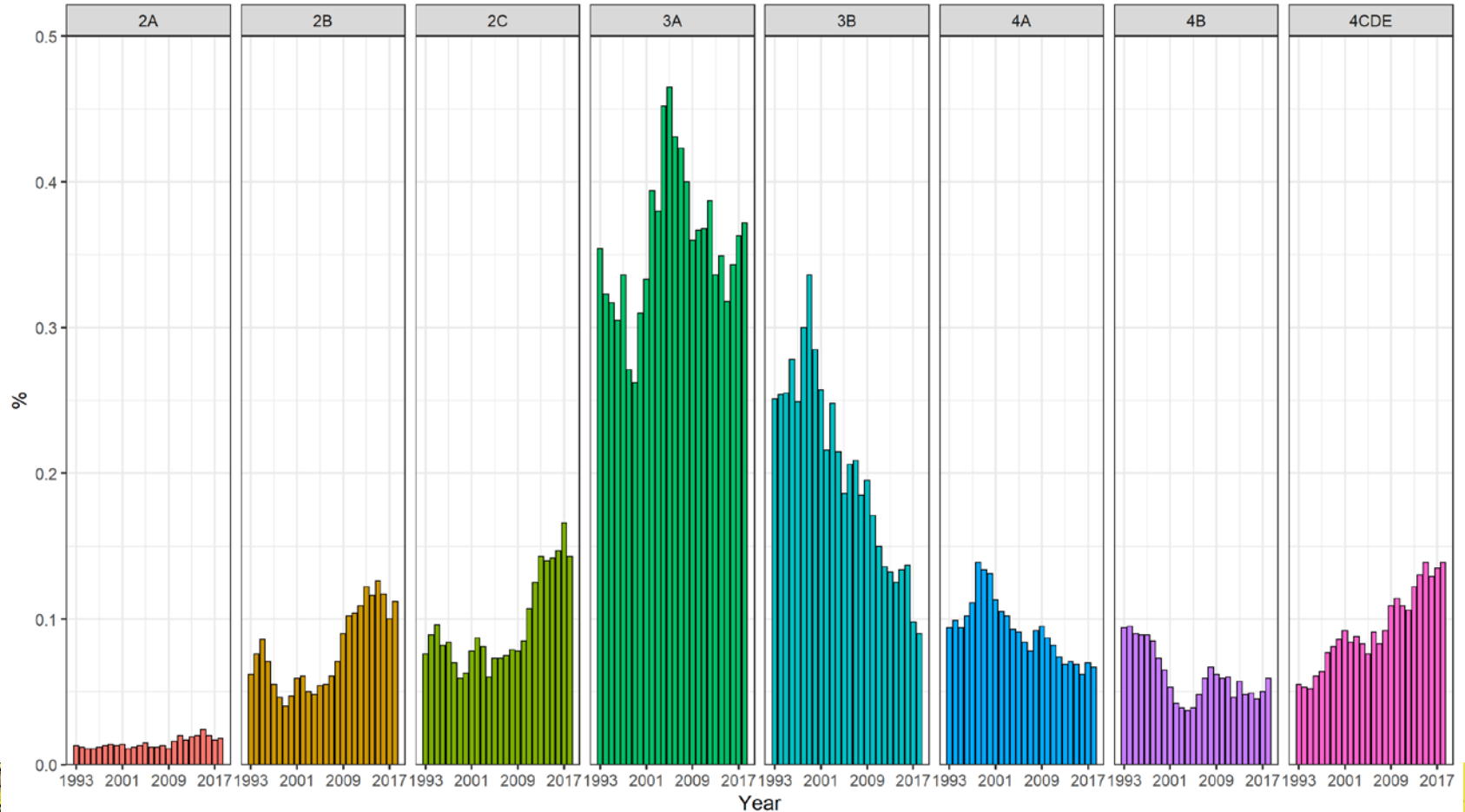
Historical perspective: Stock distribution (WPUE all sizes by reg area)



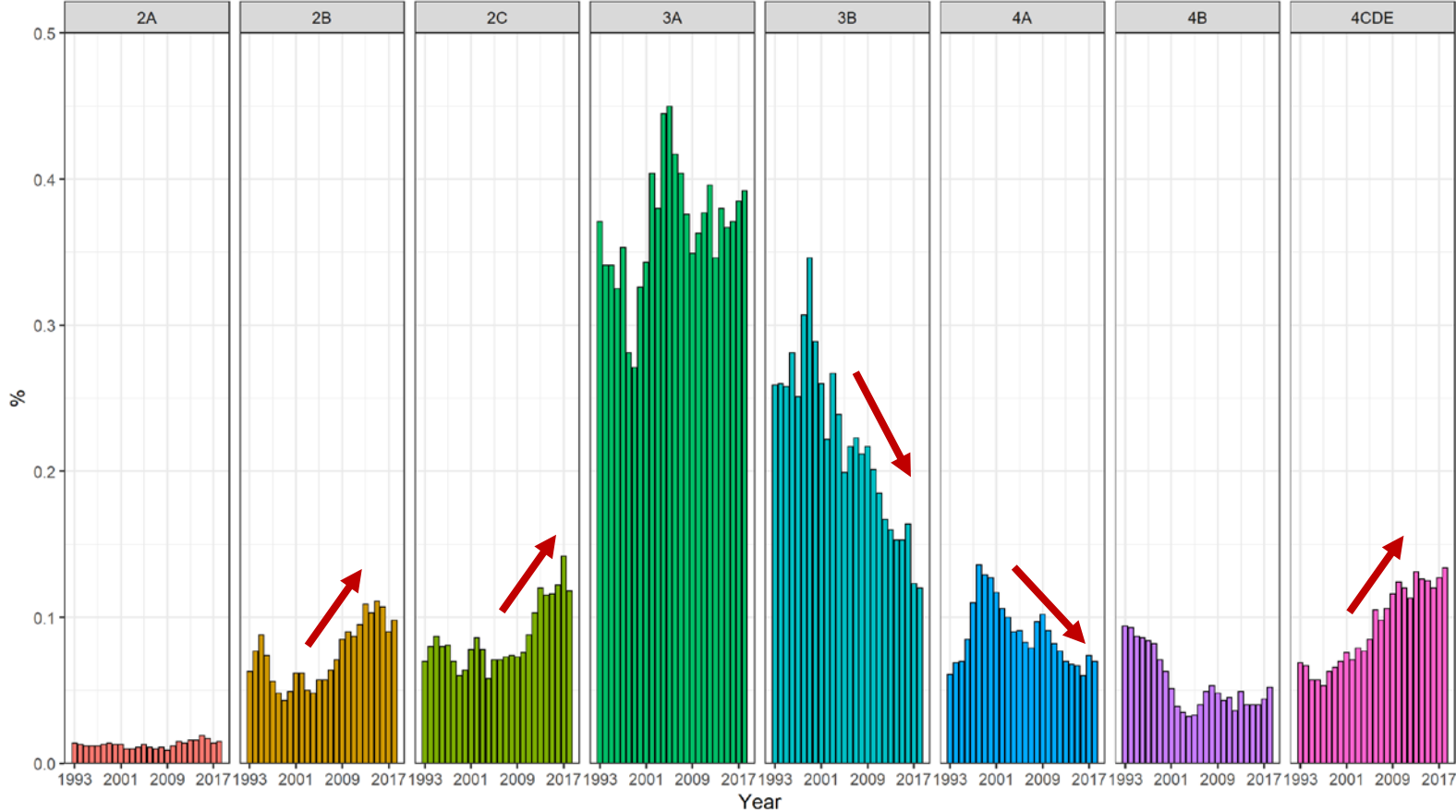
Historical perspective: total removal by reg area



Historical perspective: Stock Distribution (based on WPUE O32 by IPhC Red area)



Historical perspective: Stock distribution (based on WPUE all sizes by reg area)



Historical perspective: Stock distribution (based on WPUE all sizes) by region

