Herring Committee Report

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Hotel 1620 - Plymouth, MA
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New England
Fishery Management Council

Presentation Outline

1. Review Amendment 8 (A8) alternatives
2. Review public comments on A8
3. Identify final preferred alternative for ABC control rule
4. Identify final preferred alternative to address potential localized depletion and user conflicts
5. Discuss 2019-2021 specifications – including potential independent action for FY2019 (NOAA Fisheries in-season adjustment)

Meeting Materials

1. Staff presentation
2. Herring Committee and Advisory Panel draft motions
3. Amendment 8 decision document *(other documents online)*
4. Summary of Amendment 8 public comments
5. PDT Memo #1, Updated analyses for Amendment 8

   5a. Staff Memo, additional analyses for Committee motions
6. PDT Memo #2, Upcoming herring actions and timelines
7. Planning document for 2019-2021 specifications document
8. Draft herring work priorities for 2019
9. Correspondence

Amendment 8 goals

1. To account for the role of Atlantic herring within the ecosystem, including its role as forage;
2. To stabilize the fishery at a level designed to achieve optimum yield;
3. To address localized depletion (LD) in inshore waters *(this goal added after initial scoping).*

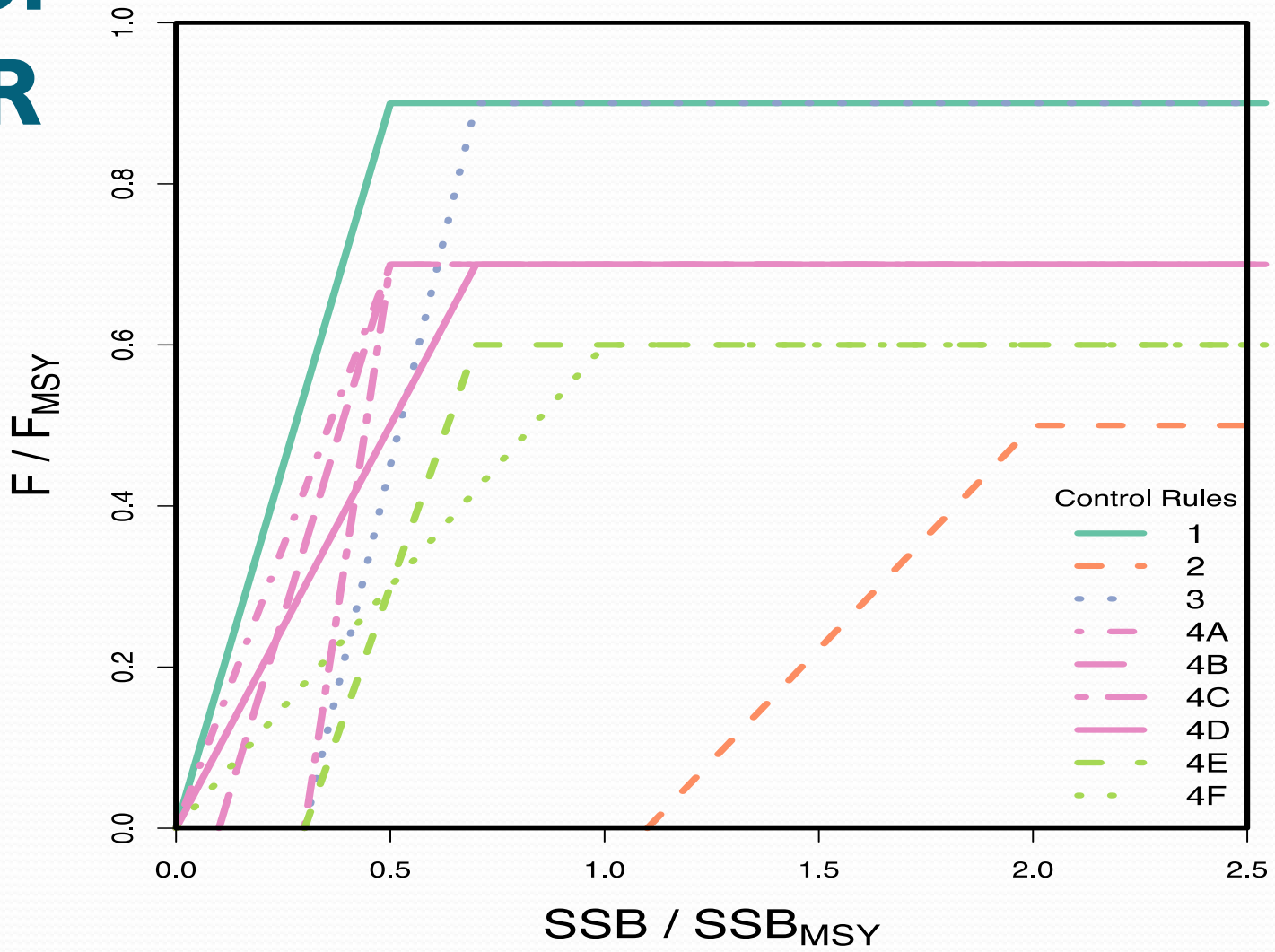
Amendment 8 has two parts:

- Part 1 – Considering different methods to set overall catch limits (ABC control rule)
- Part 2 – Considering measures to address potential localized depletion and user conflicts

Part 1: Acceptable Biological Catch (ABC) Control Rules

- A formula for setting annual catch limits.
- Ten alternatives considered for control rule.
- Two alternatives for ABC timeframe (3 years same catch (Alt 1) or 3 years ABC varies annually (Alt 2)).
- Council reviewed draft range of alternatives and analysis in September 2017.
- Declined to identify preferred alternative.

Range of ABC CR Alts.



Part II: Measures to address potential LD and user conflicts

"Localized depletion is a reduction of population size, independent of the overall status of the stock, over a relatively small spatial area as a result of intensive fishing.

Problem statement –

"…..concerns with concentrated, intense commercial fishing of Atlantic herring in specific areas and at certain times that may cause detrimental socioeconomic impacts on other user groups (commercial, recreational, ecotourism) who depend upon adequate local availability of Atlantic herring to support business and recreational interests both at sea and on shore…."

LD and user conflict alternatives

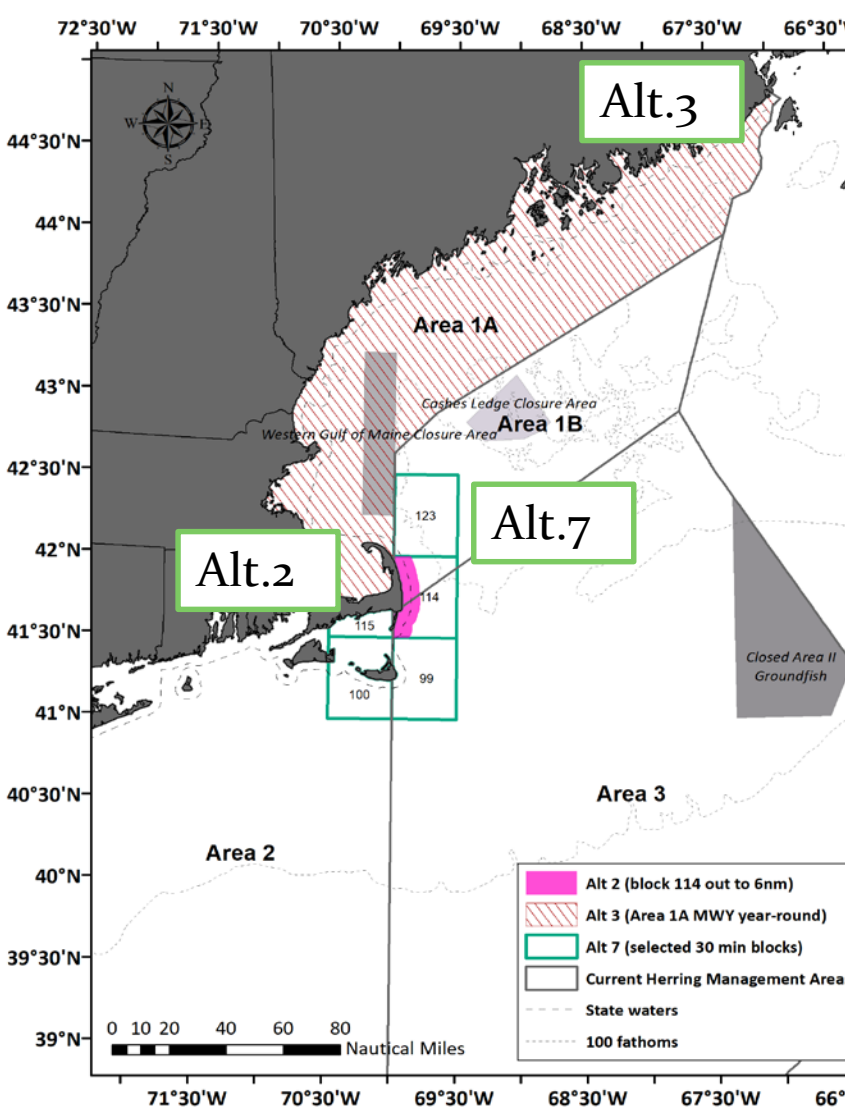
Alt 1. No Action (no MWT gear in Area 1A Jun-Sep)
Alt 2. 6nm closure in Area 114 (Jun-Aug) or (Jun-Oct)
Alt 3. Extend Area 1A prohibition of MWT gear year-round
Alt 4. 12 nm prohibition of MWT gear
Alt 5. 25 nm prohibition of MWT gear
Alt 6. 50 nm prohibition of MWT gear
Alt 7. Prohibit MWT gear in five 30-minute squares
Alt 8. Revert boundary between Areas 1B/3
Alt 9. Remove seasonal closure of Area 1B

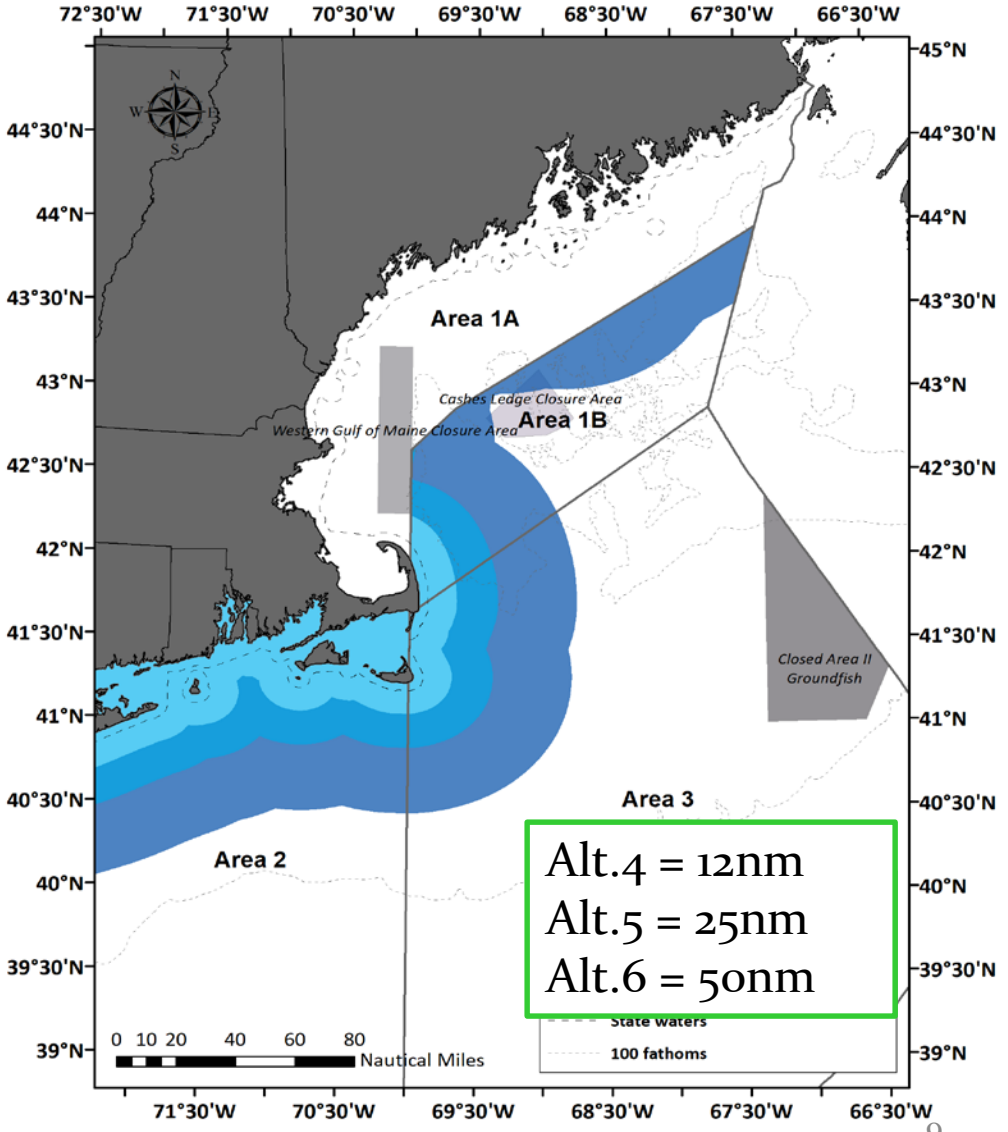
Alts 4-7 have seasonal and spatial sub-options

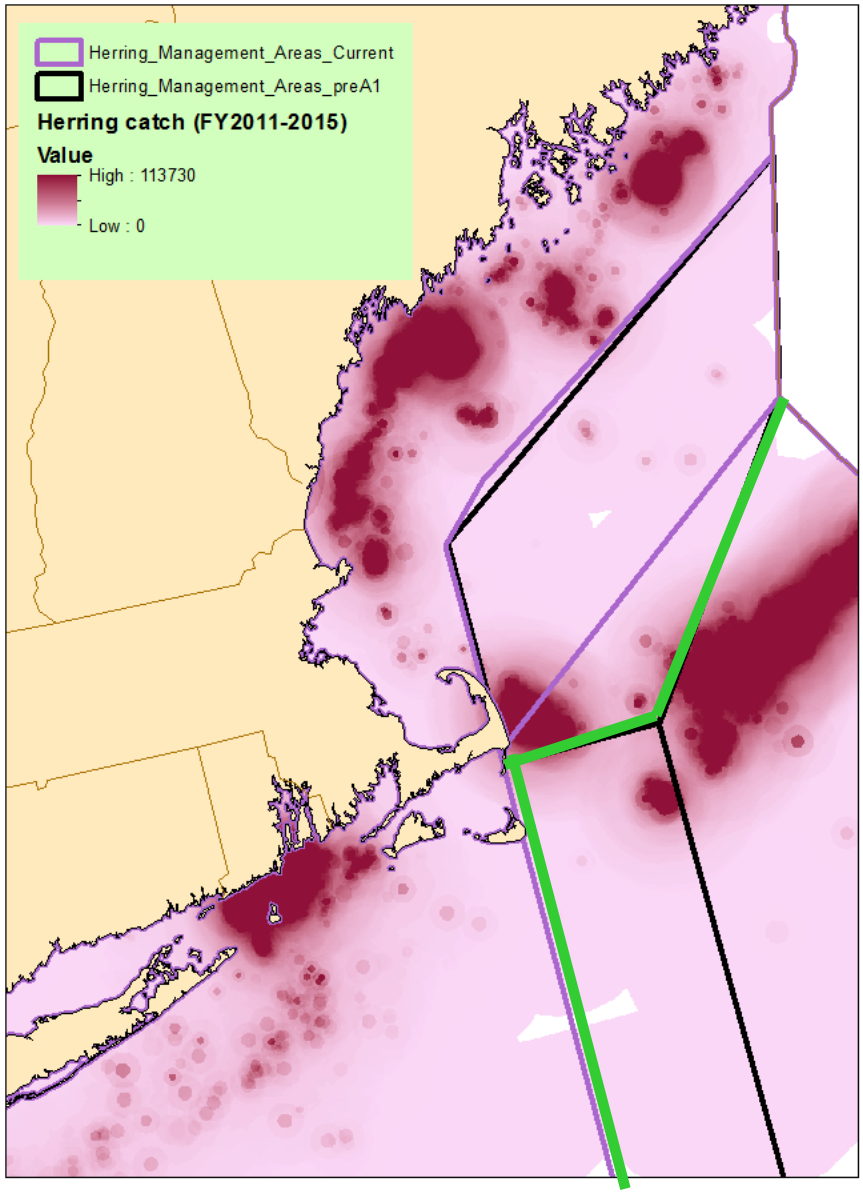
Year-round or
Jun-Sept
Areas 1B, 2 and 3
or
Areas 1B and 3

December 2017 - Council approved range and analysis
NO PREFERRED ALTERNATIVE

LD and user conflict Alternatives 2-7







Alternative 8

Current Boundary – purple

Pre-Amendment 1 – black

GREEN is proposed boundaries.

Alternative 9

Area 1B currently closed Jan-April.

If open all year, effort may spread out and reduce user conflicts in late spring-fall.

Part II

Summary of Amendment 8 public comments (Document #4)

Overview of commenters

- 439 comments received (75 oral, 364 written).
- 17,151 people signed two large form letters
- 492 people gave individual/small group comments.
  - 90% did not commented during public scoping (2015).
  - 71% from New England (30% CT, 27% MA).
  - 8% were herring or lobster fishermen or groups.

General support for No Action

- Need **flexibility** given 2018 Atlantic herring assessment.
- **Current processes are sufficient** to account for herring's role in the ecosystem.
- Atlantic herring recruitment and abundance are more influenced by **environmental factors**.
- More conservative management would prevent achieving **optimum yield** in the fishery.
- Localized depletion is **poorly defined** and scientifically unproved.
- Herring **migrates too much** for localized depletion to occur.
- There may be **unintended consequences** of additional restrictions; shifting effort to other gear types, areas and seasons may do nothing to resolve the concerns that prompted A8.

General support for taking action

- Need **precaution** given 2018 Atlantic herring assessment.
- Need to **ensure enough supply** of herring to benefit predators and all fisheries that depend on herring.
- Concerned about **river herring and shad depletion:**
  - Federal fishery undermines inland restoration efforts;
  - Unfair that A. herring fishery catches RH/S as bycatch while directed RH/S fisheries are prohibited in most areas.
- Localized depletion by, and/or user conflicts with, midwater trawl vessels is occurring.
- Hope **for more herring nearshore**.
- Some saw A8 as a matter of fairness, wanting smaller-scale (predator) fisheries to survive.

Support for specific alternatives

ABC control rule

- Herring/lobster industry supported No Action or Alt. 1.
- Others mostly supported Alternative 2.

ABC control rule timeframe

- Some for Alt.1 (stable) and some for Alt 2 (annual).
- A few wanted flexibility to choose between approaches.
- Some wanted annual review of stock with ABC adjustments.

Localized depletion/user conflicts

- Herring/lobster industry mostly supported No Action/Alt. 1 (seiners supported Alt. 3). Many also supported Alt. 9.
- Others mostly supported Alt. 6 (50 nm). Some supported Alt. 3 combined with one of Alts. 4-7. Some supported Alt. 4, 5 or 6. Year-round options preferred, many supported including Area 2.

Part III
ABC Control Rule
Final Preferred Alternative

A8 Decision Document (Doc. #3)
Identifying final rationale

1. Supported by Amendment 8 analyses
2. Show how measures are consistent with Magnuson Stevens Act and National Standard Guidance

   (Worksheets developed:

   ABC CR - #1, #2, #6, and #8
   LD - #1, 2, 4, 5, 7, 8 and 10).
3. Supported by input from public comments
4. Other?

Amendment 8 Analyses – ABC CR

- Pages 10-13 of decision document (Doc.#3)
- Long-term impacts – Management Strategy Evaluation (MSE) decision tables and web diagrams for many "metrics" or variables.
- Short-term impacts –

  1) estimate SSB, catch and revenue for four different biomass levels from the past;

  2) estimate fishing mortality, probability of overfishing and catch for 2016-2019; and

  3) updated estimates of projections for 2019-2021 using new assessment results (new analysis in PDT memo – Doc. #5).

NEFMC's Risk policy (Nov. 2014)

Recognizing that all fishery management is based on uncertain information and that all implementation is imperfect, it is the policy of the New England Fishery Management Council (Council) to weigh the risk of overfishing relative to the greatest expected overall net benefits to the Nation.

- Four strategic approaches to be taken into account:

1) Probability of undesired outcome and negative impacts;
2) Cumulative effects of addressing risks at all levels;
3) Stability in the face of uncertainty and variability in system;
4) Analysis based decisions using methods that consider tradeoffs, ability to detect signal from noise, and dynamic process that allows review and modification.

- Use of MSE is ultimate track to provide risk-based analysis evaluating tradeoffs with respect to net benefits to the Nation.

Enforcement Committee Input

- Reviewed LD alternatives in November 2016.
- Thirty-minute square blocks easier to enforce than contours.
- The 12, 25, and 50 contour line alternatives encompass increasingly larger areas, and are therefore proportionately harder to enforce.
- Suggestion to replace curving lines with points to approximate the contours to improve compliance and enforcement.
- Cmte did not formally review Alternatives 8 and 9 because those were developed after their meeting on Amendment 8.

2018 Benchmark Assessment

- Final report released in August 2018, after Draft EIS submitted, and after the public comment period ended.
- Our understanding of biomass has changed from being "well above Bmsy" (2.0 Bmsy) to potentially below ½ Bmsy in 2018.
- PDT has updated analyses to be included in Final EIS (Doc.#5).
- New 2019-2021 projections have been completed since 2016-2018 would not really capture realistic near term impacts.

AP/Committee input

- AP supports Alternative 1 (Strawman A) for control rule and Alternative 2 (annual application of control rule for three years for the timeframe).
- Committee supports "Alternative 4b revised" as preferred and Alternative 2 for setting ABC for 3 years with annual application of ABC control rule.
- What is Alternative 4b revised? See Document #5a.

	Upper biomass parameter	Lower biomass parameter	Max F
Alt. 1	0.5	0.0	0.9
Alt. 4b	0.5	0.1	0.7
Alt 4b revised	0.5	0.1	0.8

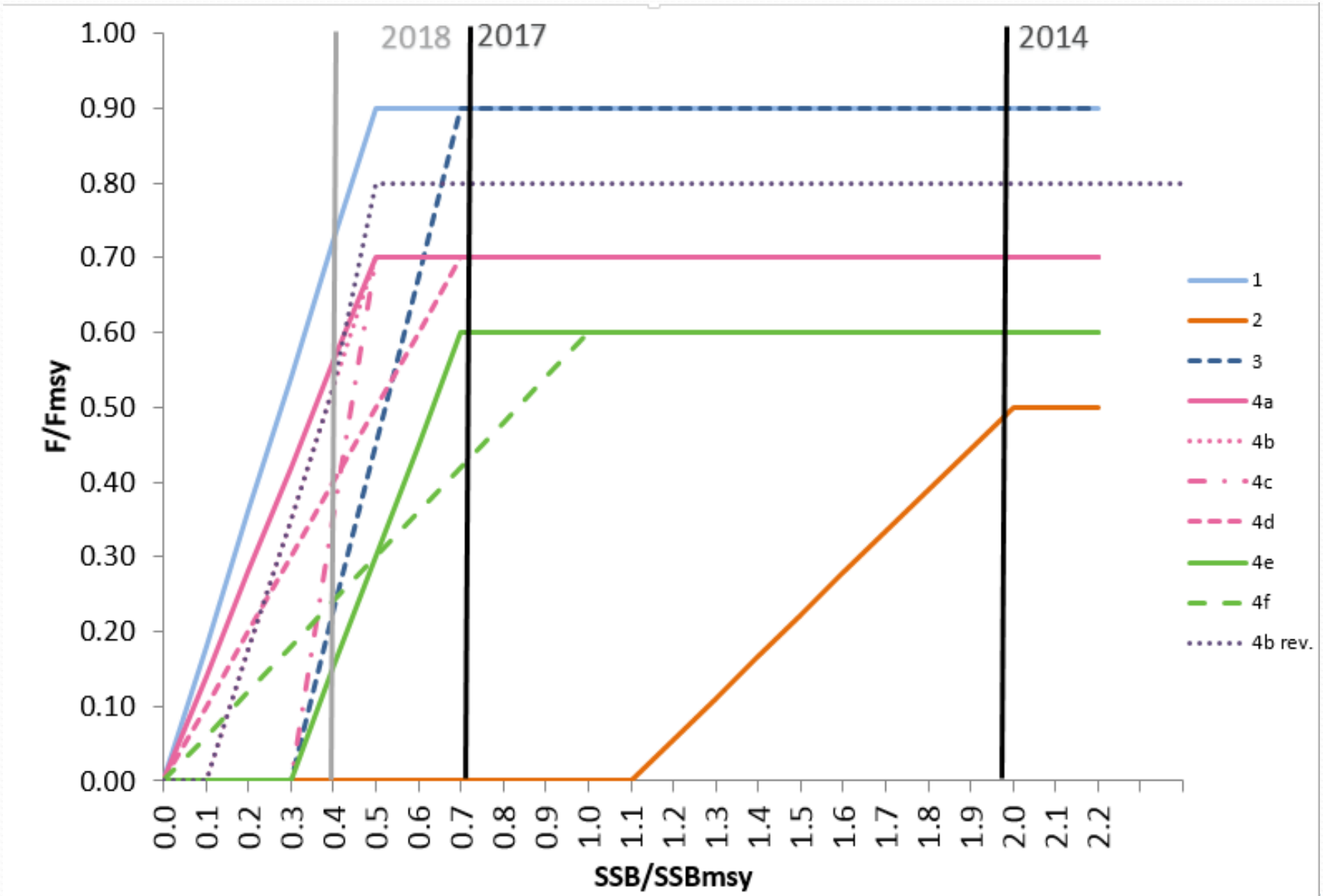
Alternative 4a-4f

1. Set proportion of MSY at 100%, as low as 85%
2. Set variation in yield <10%, as high as 25% (27%)
3. Set prob of overfished at 0%, as high as 25%
4. Set prob of ABC=0 between 0-10%

Over 70 shapes fit these desired performance values.

1. Remove any with upper biomass parameter <0.5
2. Set prob of overfished =0
3. MSY as low as 88% only

Range of ABC CR Alternatives



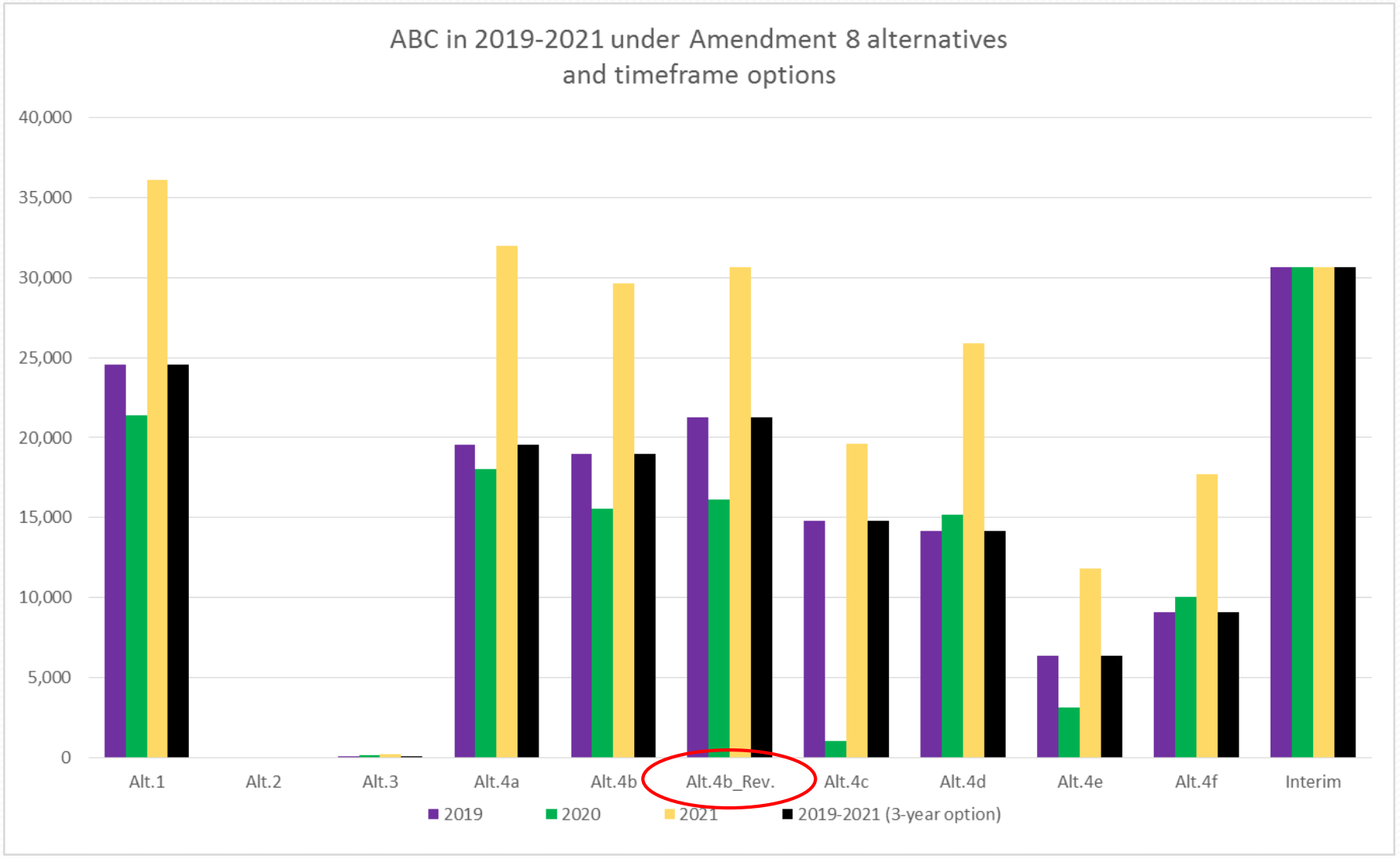
In the short-term

Alt. 4b revised has higher ABC values (catch) and higher probability of overfishing and overfished.

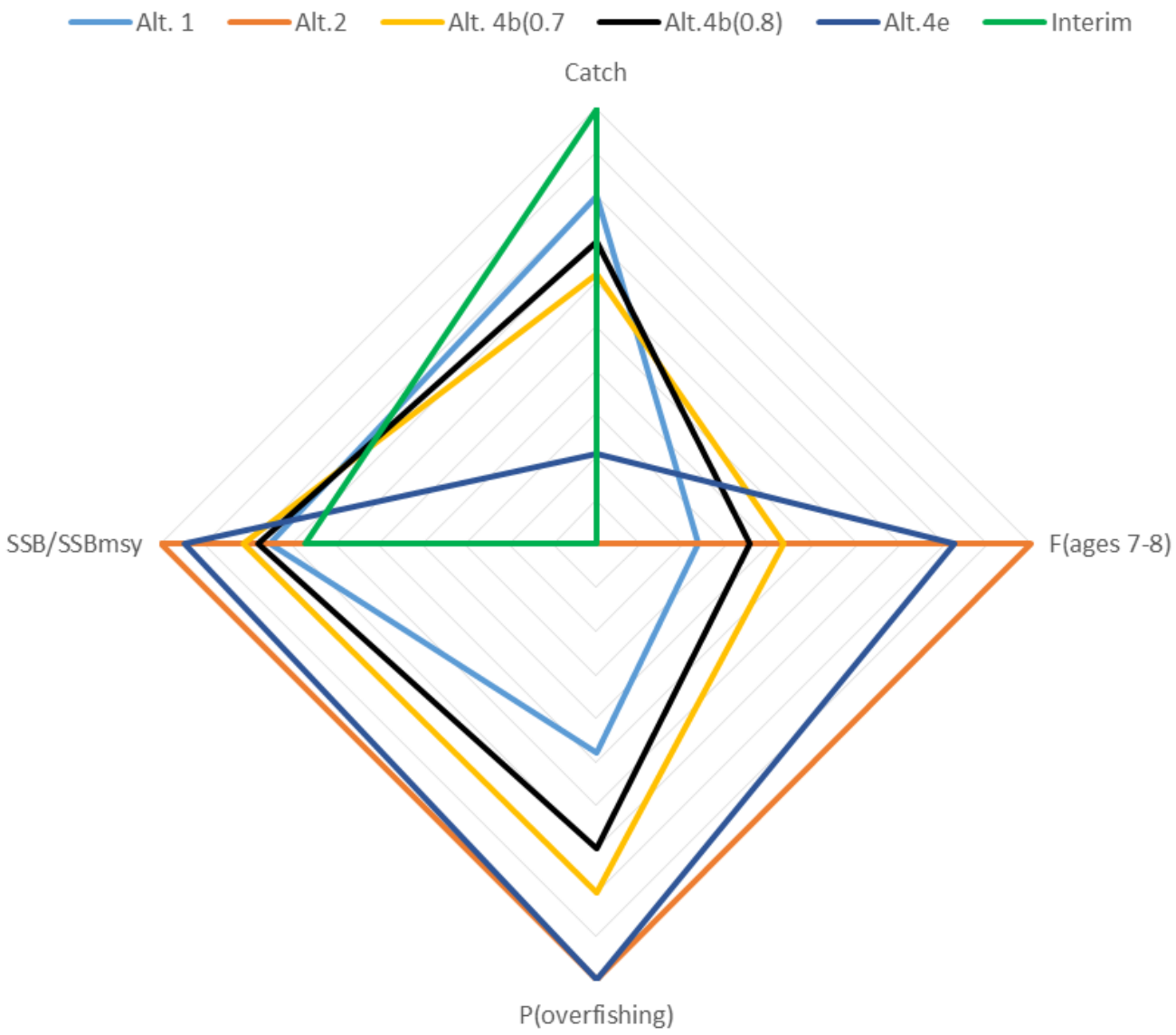
Note: All have high probabilities of overfished with such low biomass estimates (Tables 5, 6, 7 in Doc. #5).

4b original	2018	2019	2020	2021
Catch	49,900	18,980	15,541	29,615
F(ages 7-8)	0.51	0.29	0.17	0.2
SSB	79,673	54,526	60,355	128,666
P (overfishing)	0.5	0.1	0.01	0.02
P (overfished)	0.72	0.88	0.83	0.24
SSB/SSBmsy	0.42	0.29	0.32	0.68
4b revised	2018	2019	2020	2021
Catch	49,900	21,266	16,131	30,659
F(ages 7-8)	0.51	0.33	0.18	0.21
SSB	79,673	52,874	58,617	126,394
P (overfishing)	0.5	0.15	0.02	0.03
P (overfished)	0.72	0.88	0.84	0.26
SSB/SSBmsy	0.42	0.28	0.31	0.67

2019-2021 ABC Projections

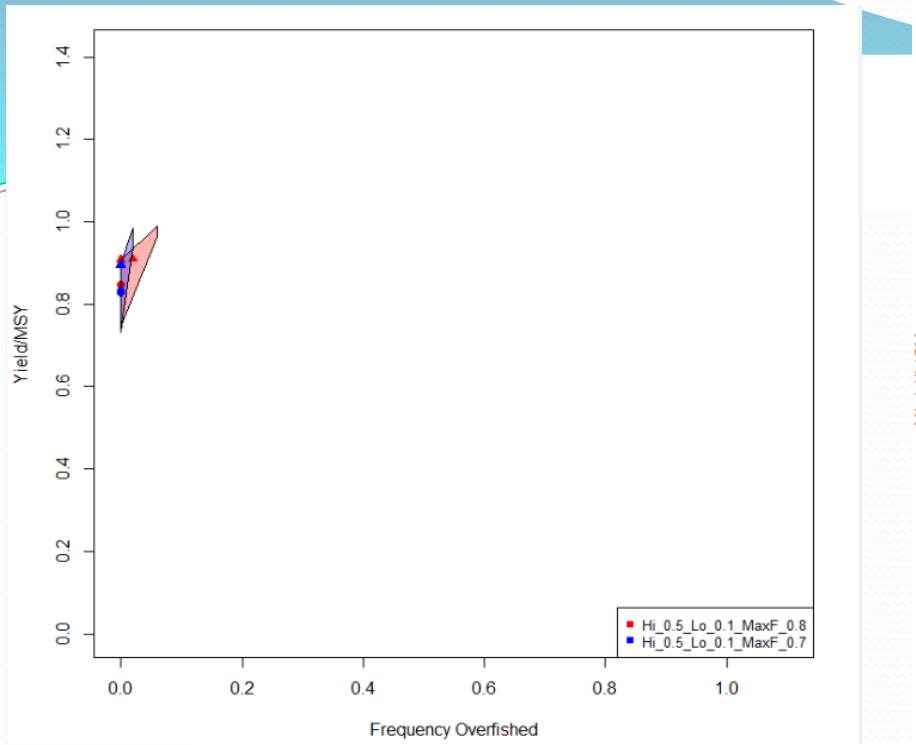


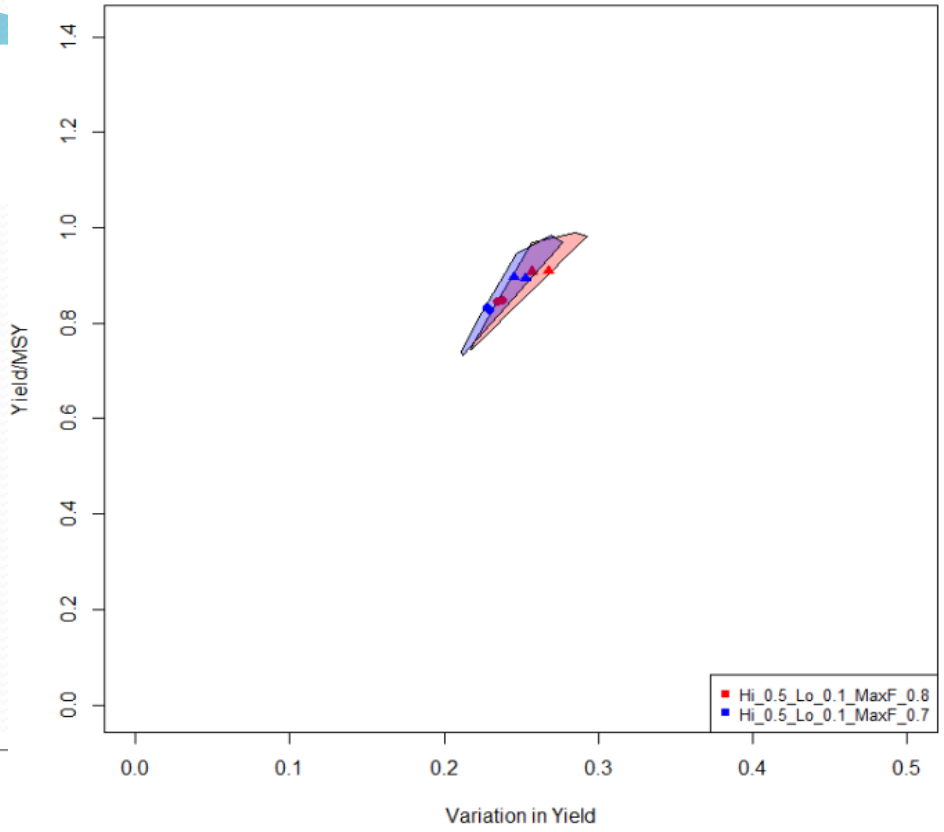
Performance metrics for 2019 for several alternatives



Preliminary Long-term Analysis

- Alt 4b and 4b revised expected to perform very similar in the long-term (LT).
- Updated LT results for the 4 “unbiased” operating models (Tables 4 and 5 in Doc. 5a).
- Four metrics used by the Committee to identify alternatives have very similar performance.
- Overall the LT results for 4b revised fall between Alt.4b and Alt.1.





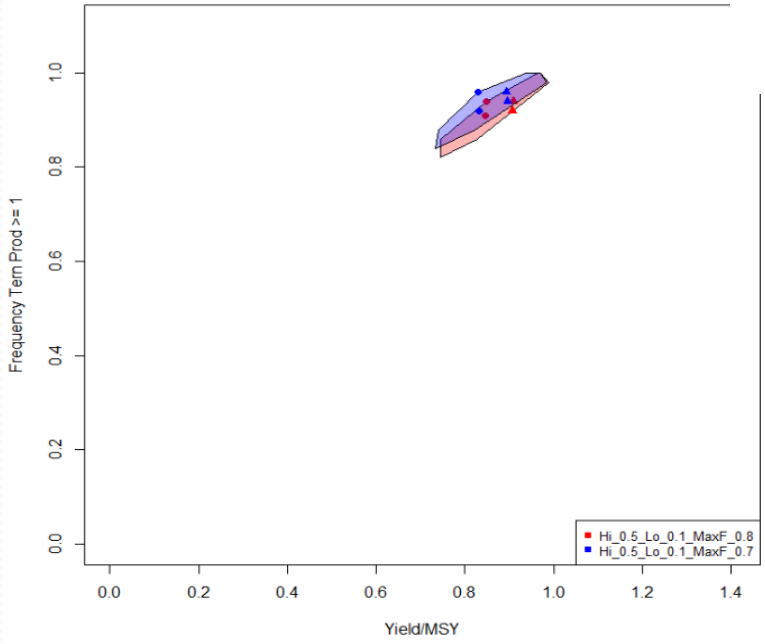


Figure 5 in Doc. #5a

Alt 4B – blue

Alt 4B revised – red

Unbiased operating models only

Triangle – high production model

Circle – low production model

Questions?

Council preferred alternative for ABC Control Rule and method for setting ABC over 3-year timeframe?

Part IV

Measure to address potential localized depletion and user conflicts

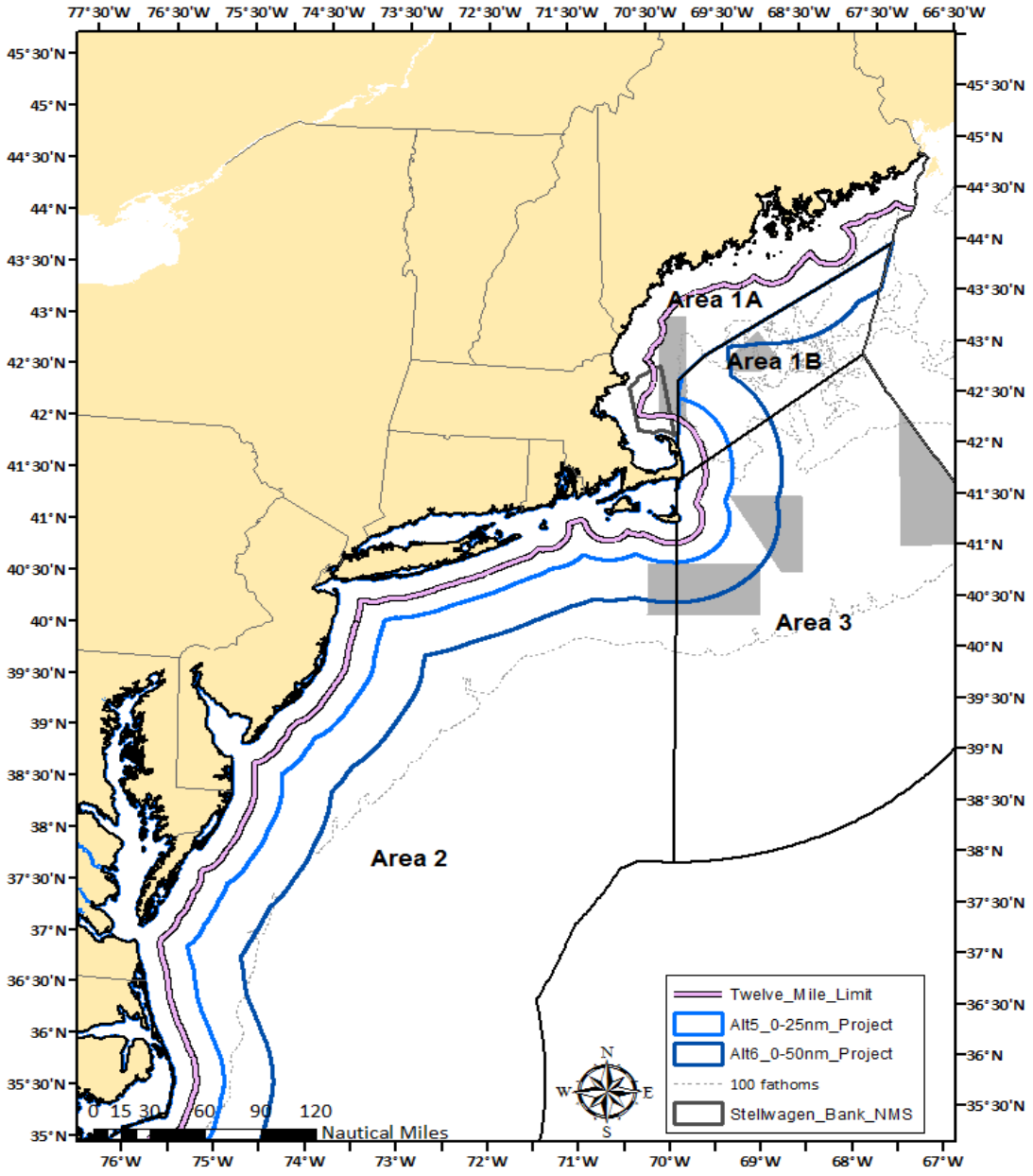
Final Preferred Alternative

Amendment 8 Analyses – LD

- Pages 14-18 of decision document
- Not a straightforward issue, data limitations and challenging to identify if and how other fisheries impacted by the removal of herring alone.
- Analysis: role of herring as forage, fishery footprint maps, overlap analysis, VTR correlation analysis, description of possible effort shifts, summary of literature.
- Economic impacts: What were the herring/mackerel landings/revenue from an area/season?, Likely effort shifts? Ability to catch OY?

AP/Cmte input

- AP supports Alt. 9 (remove seasonal closure in Area 1B).
- Committee supports Alt. 4 (12 nm buffer) with a new spatial sub-option ("C" – all herring areas) and seasonal sub-option A – year round as final preferred.



Preliminary analysis of Alt.4 (sub-options C and A)

- Approach - Alt. 4 combined with portion of Alt. 3 (Doc. #5a).
- Not sufficient time to update herring/mackerel economic models, so estimated revenue impacts inside of 12 nm from Alt.3 results.
- Assumed 75% of all MWT revenue from within 12 nm of Area 1A ($2.5 mil) (Figures 7-9).
- Alt. 4 alone expected to impacts about 18% of MWT total revenues from Areas1B, 2, 3 ($3.3 mil) (Table 7).
- Combined estimate of $5.8 million, or over 30% of total MWT revenue.
- Compared with NEFSC Cooperative Research Study Fleet data (35% of potential total revenue (Table 10)).

Table 7

Sub-options	Description	Time period	Herring/mackerel MWT average nominal revenue			
			Inside 12 nm (Alt 4)	Inside 25 nm (Alt 5)	Inside 50 nm (Alt 6)	Total all areas
A	Areas 1B, 2 & 3; year round	2000-2007	$3.7M (13%)	$6.8M (24%)	$13M (45%)	$28.9M (100%)
		2007-2015	$3.3M (18%)	$4.9M (26%)	$8.0M (43%)	$18.7M (100%)
B	Areas 1B, 2 & 3; June-Sept	2000-2007	$29K (0.4%)	$52K (0.7%)	$0.5M (5.8%)	$7.9M (100%)
		2007-2015	$0.3M (4.4%)	$0.4M (5.9%)	$1.3M (19%)	$6.8M (5.7%)

Impacts are likely between Alternative 5 and Alternative 6

Part V
2019-2021 Specifications and possible in-season action for 2019

Herring Timing Issues

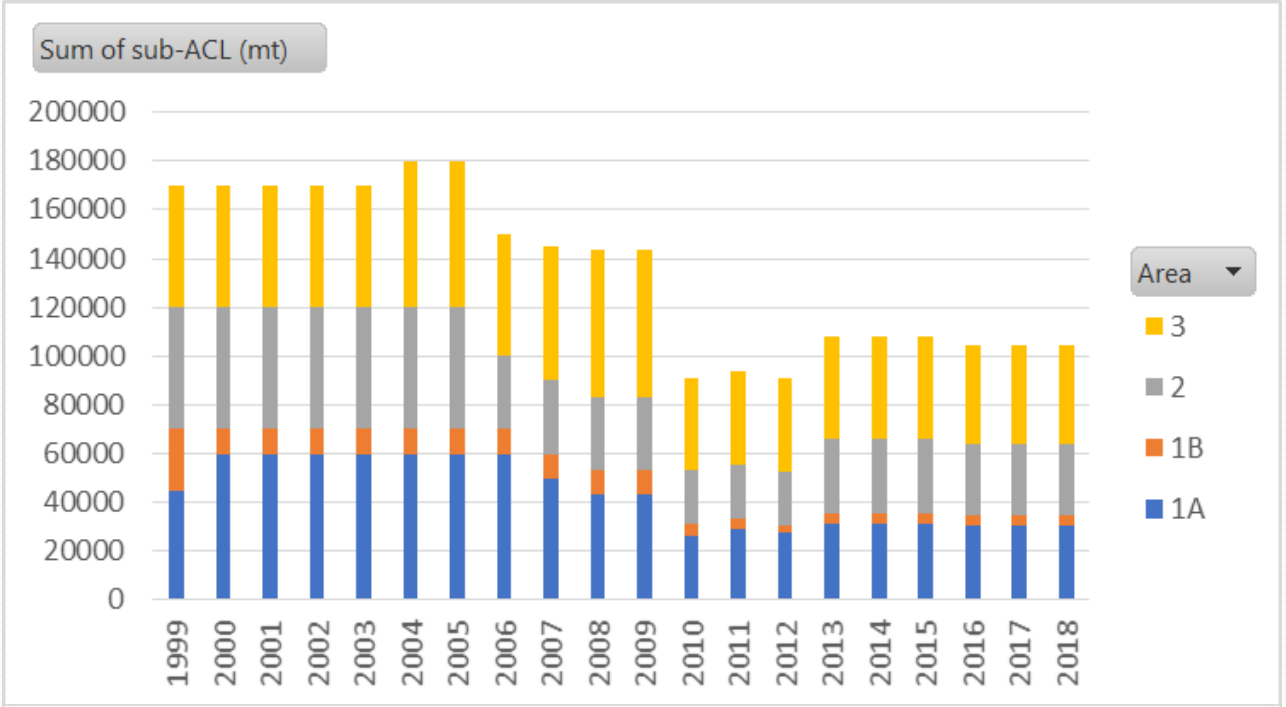
- Document #6 – PDT memo
- Executive Committee discussed Council consider recommending NOAA Fisheries take in-season adjustment to reduce 2019 catch limits.
- If the 2018 in-season adjustment rolls over (49,900 mt) catches will be too high for 2019; probability of overfishing and overfished very high.
- Total catches of 30,000 or lower needed to get probability of overfishing below 50% if 2018 catch limits are realized.

Herring AP/Cmte input

- AP motion of support, using the same catch proportions by area as the last specifications package.
- Cmte motion postponed.

Recommend the Council request NOAA fisheries develop an in-season action that would set 2019 catch limits with the following guidance:

- Using the most recent assessment and projections;
- Using the ABC control rule approved the by Council;
- Proportionally reduce the fixed gear set-aside;
- Set the border transfer to 0 mt; and
- Maintain the sub-ACLs for herring management areas based on the same proportions as the last specifications package (Area 1A=28.9%, Area 1B=4.3%, Area 2=27.8%, Area 3=39%).


Sum of sub-ACL (mt)
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
1999
2000
2001
2002
2003
2004
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2015
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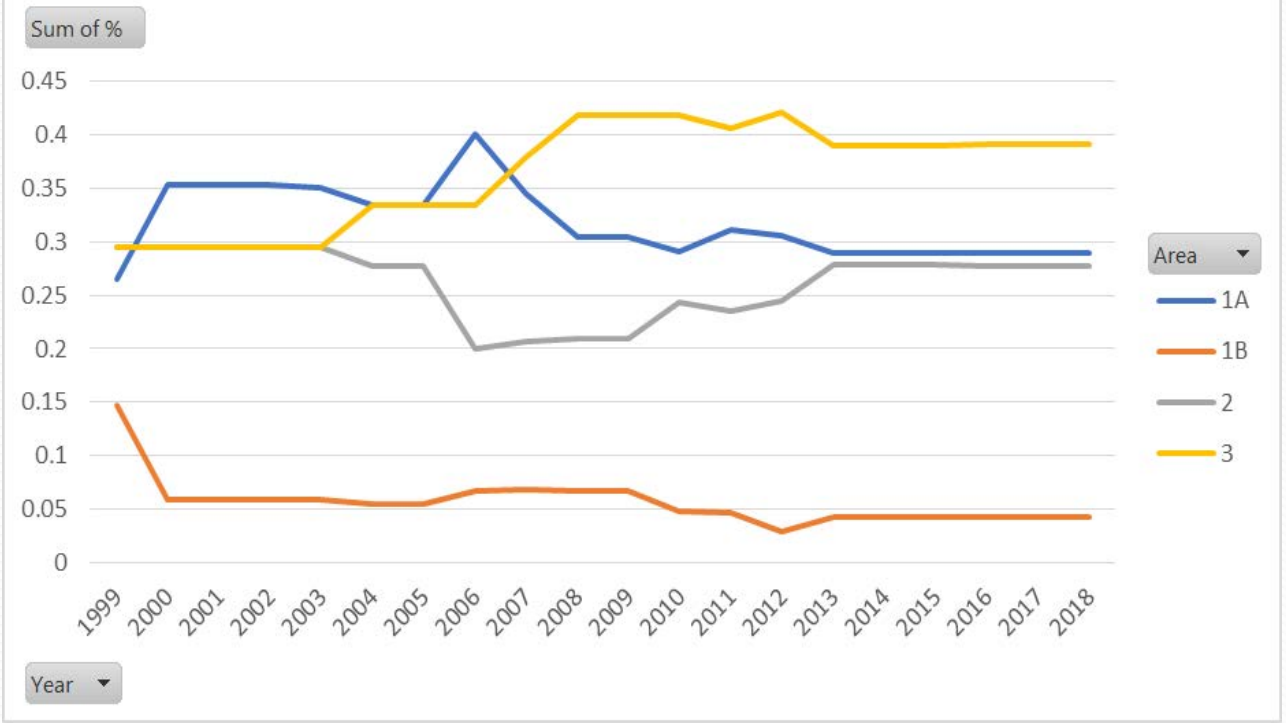
Area
3
2
1B
1A


Sum of %
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Year
Area
1A
1B
2
3

Herring catch by area

- Figure 11 – allocation versus actual catch by area.
- Area 1A over 95%, Area 1B variable (50-150%), Area 2 variable under 20%-100%, Area 3 under 50%, then 80-100%, under 50% again in 2016 and 2017.
- Percent of total catch per area (2010-2017)

	1A	1B	2	3
% total landings 2010-2017 (AVG)	36.5%	4.7%	21.9%	36.9%

Possible 2019 ABC

Alternative 4b revised ABC	**21,266**
Management uncertainty buffer	6,200
Research set-aside	452
Fixed Gear set-aside	56
Total ACL	14,558

- ***The SSC has not met and this is subject to change.***
- If postponed Herring Cmte motion is adopted, and Alternative 4b revised control rule is applied, the sub-ACLs for 2019 would be similar to the cells in blue.

	2019 based on recent spec proportions		2019 based on 2018 In-season proportions	
1A	4,207	28.9%	8,111	55.6%
1B	626	4.3%	773	5.3%
2	4,047	27.8%	2,392	16.4%
3	5,678	39.0%	3,311	22.7%
Total	14,558		14,588	