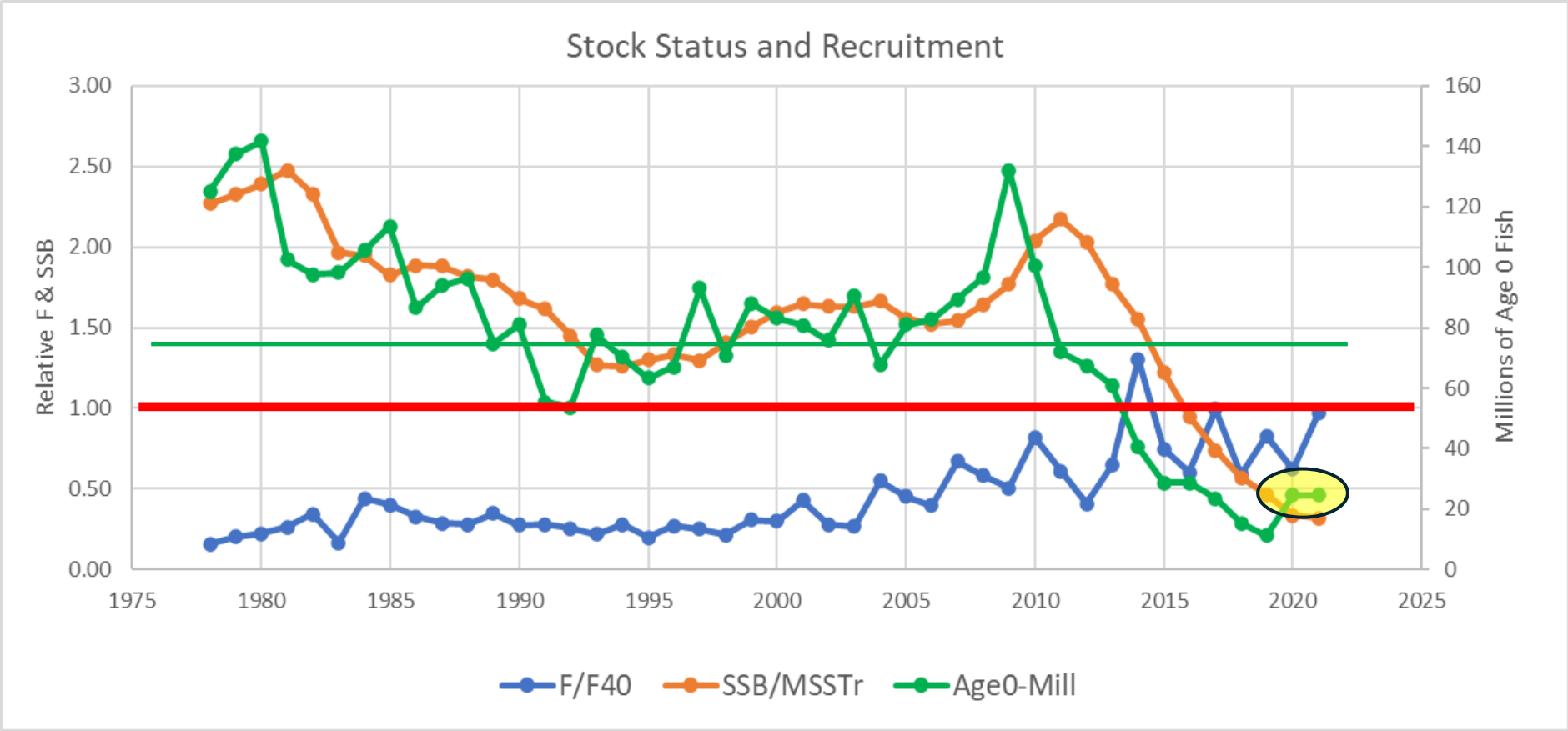
Black Sea Bass

Population Conditions and Management Challenges

Yesterday, Today, and Tomorrow

CAVEAT: These figures include information for numerous sources with sources noted on each slide. In some figures, data from different sources are combined on a plot to illustrate key points and to provide a common currency. For example, SEDAR 76 uses landings in pounds and discards in numbers for input values. To illustrate landings in numbers or discards or pounds, the assessment estimates are used. The assessment "fits" landings very close so the overall trends, which is adequate for the resolution of these charts and the intended purpose of this discussion.

Population at a Glance – SEDAR 76



- Overfished
- Not Overfishing
- 12 years declining recruitment
- 11 years below Long-term average recruitment

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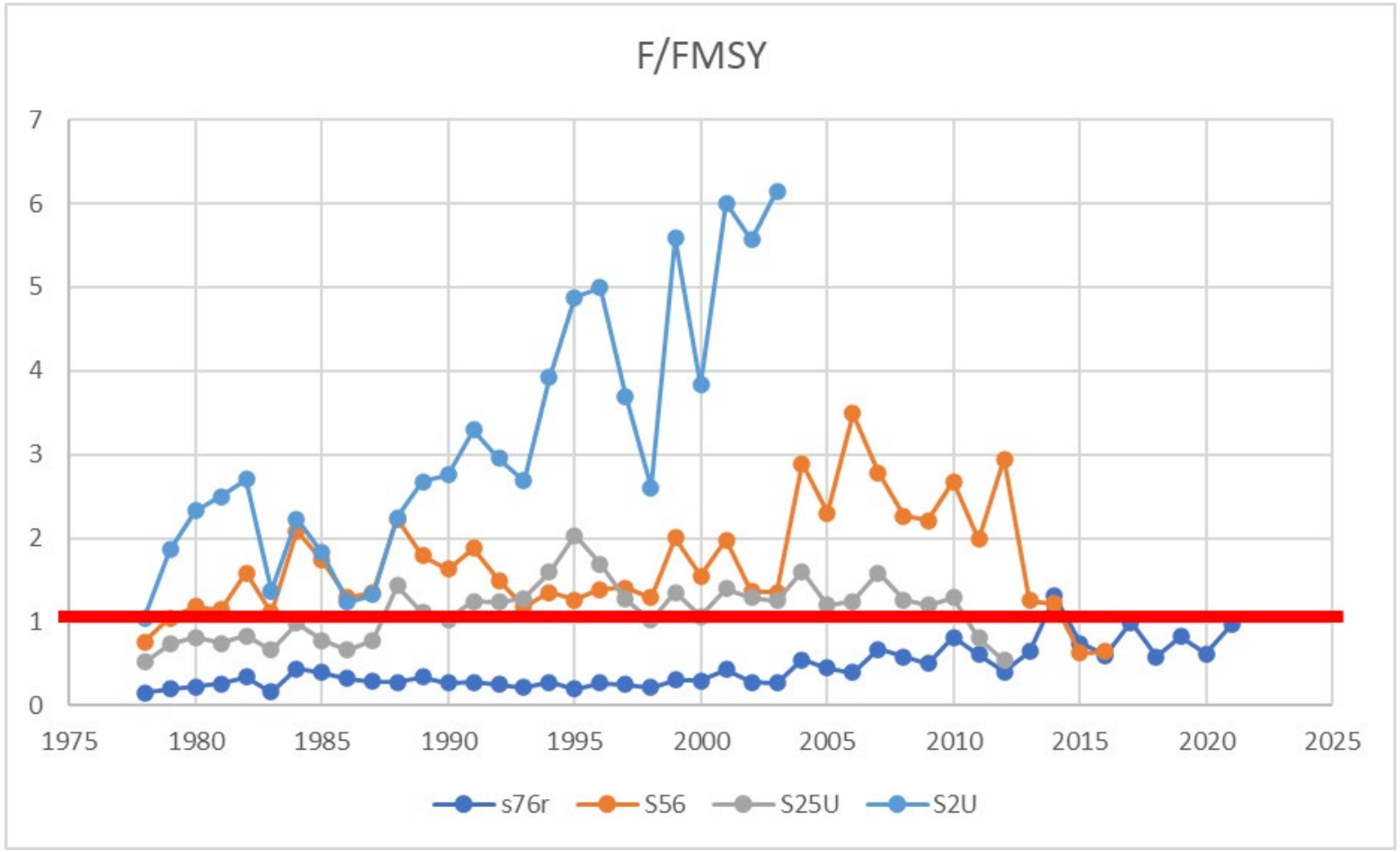
not previously considered overfished nor overfishing

Don't Count on it
No survey 2020
2021=2020= '14-'19 avg

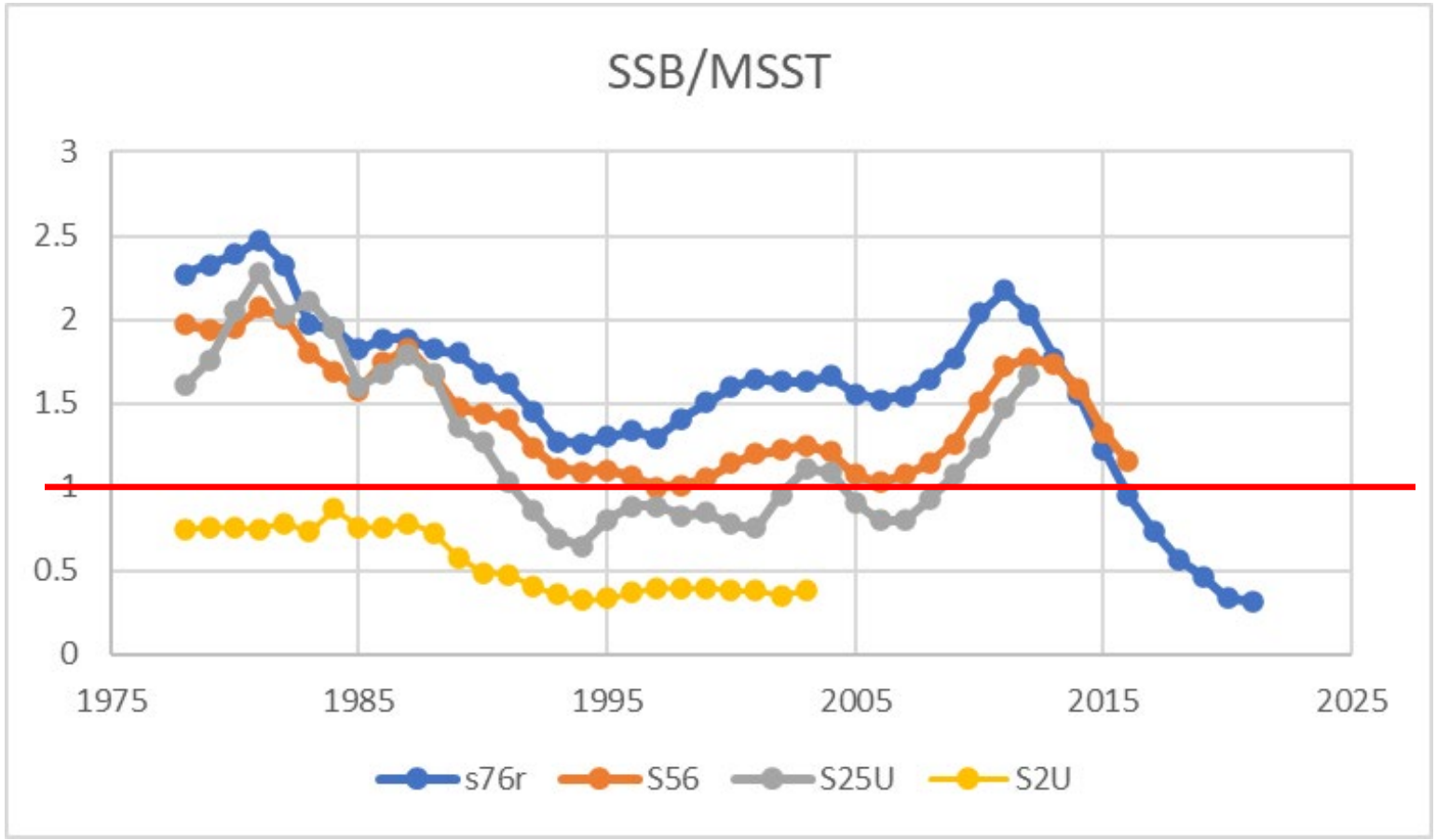
Overfishing Status History (F/MFMT)



- Stock is not overfishing
- Prior assessments indicated overfishing was occurring
- S76 indicates stock was not overfishing except 2014

From Prior SEDAR Assessment Final Reports

Overfished Status History (SSB/MSST)



- Stock is Overfished
- S56 estimated stock was never overfished
- S76 indicates stock was not overfished until 2016

From Prior SEDAR Assessment Final Reports

Yesterday's Problem:

Rebuilding, Overfishing, Recovering

Amendment 4, 1992

- Overfished based on SSR – Spawning Stock Ratio
- 10 year rebuilding Plan

Amendment 15A, 2008

- Overfished per SEDAR 2U
- Revised rebuilding plan, 10y 2006-2015

many other actions addressing overfishing

S76 Mgmt history and SAFMC.net

Amendment 18A, 2012

- SEDAR 25 – Not overfished (SSB/MSST), but also not rebuilt (SSB/SSBMSY)
- Updated rebuilding strategy (fixed catch)

Reg Amendment 19, 2013

- SEDAR 25Update: Stock is rebuilt, not overfishing
- Big Increase in ACLs

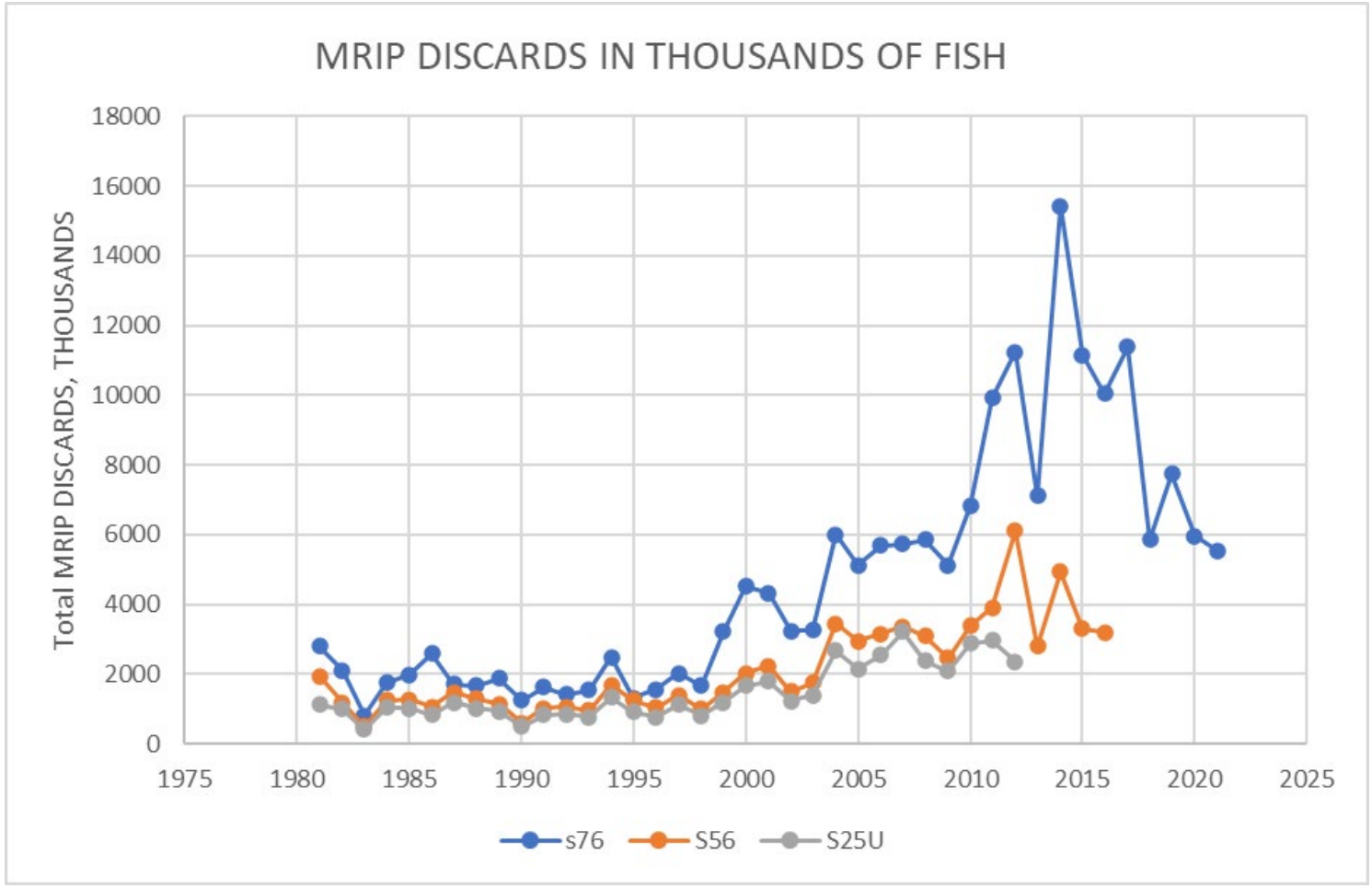
RA25 2016

- S25U, Raise the bag, not reaching OY

Abb. Framework 2 2019

- SEDAR 56 – Stock still doing well

Changing inputs, changing assessment outcomes



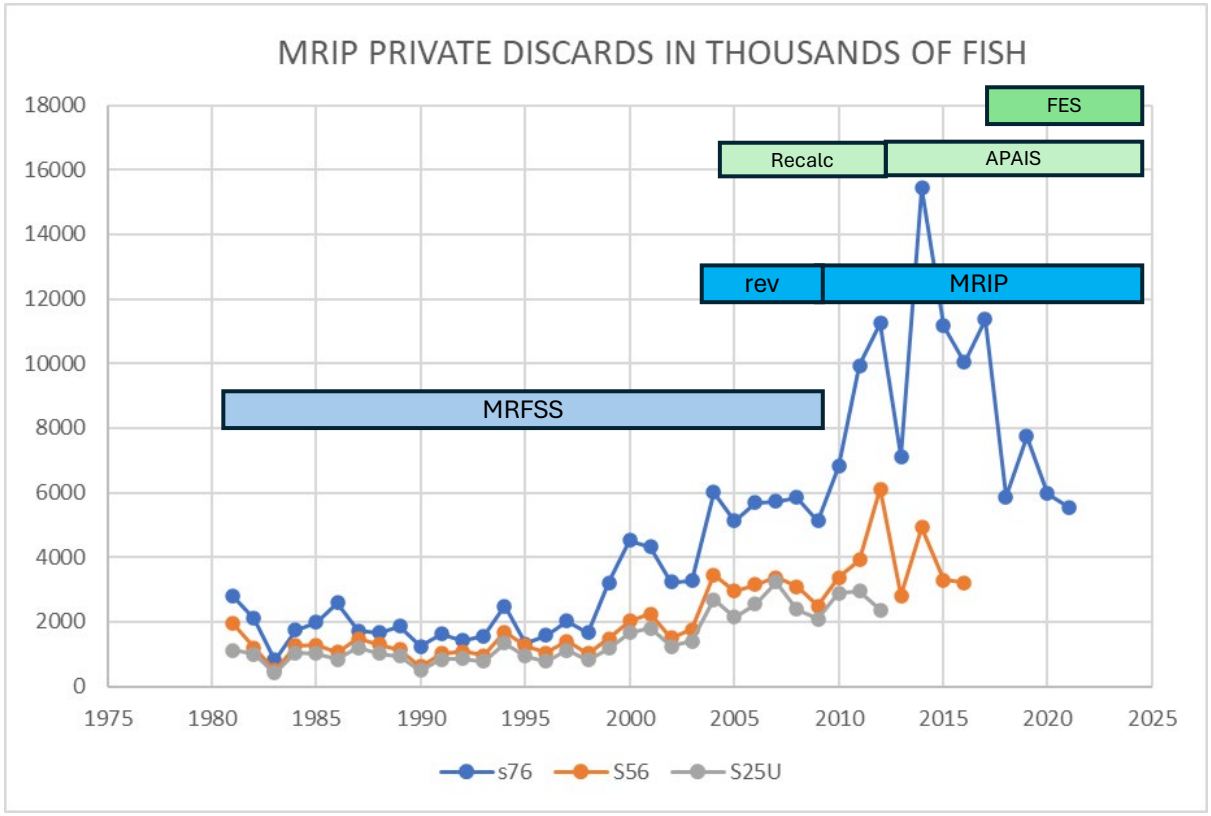
From Prior SEDAR Assessment Final Reports

Some of the other changes since SEDAR 2

- Discard mortality rates
- Assessment methods
- Survey methods
- Abundance index calculations
- Life history understanding

MRIP, total fish discard SEDAR assessment reports. Includes all discards – not adjusted for discard mortality (to avoid confounding with discard mortality changes over time)

Estimation Challenges contribute to assessment changes over time



- Assessment Inputs, Total Private Rec Discards
- MRIP dominate discards: 81-99% of total over time, 96% last 5y
- Pre S25 – input not in SAR

MRFSS – Original Protocol, 1981- 2007
Used in SEDAR 2 – not shown

MRIP – Replaces MRFSS, Major Redesign phased in 2009-2010 w/recalculation to 2004

SEDAR 25 in 2013: MRIP 2004-2011 + MRFSS Calibrated 1981-2010

APAIS Revision (Access Point Angler Intercept Survey) in 2013 with recalculation to 2004

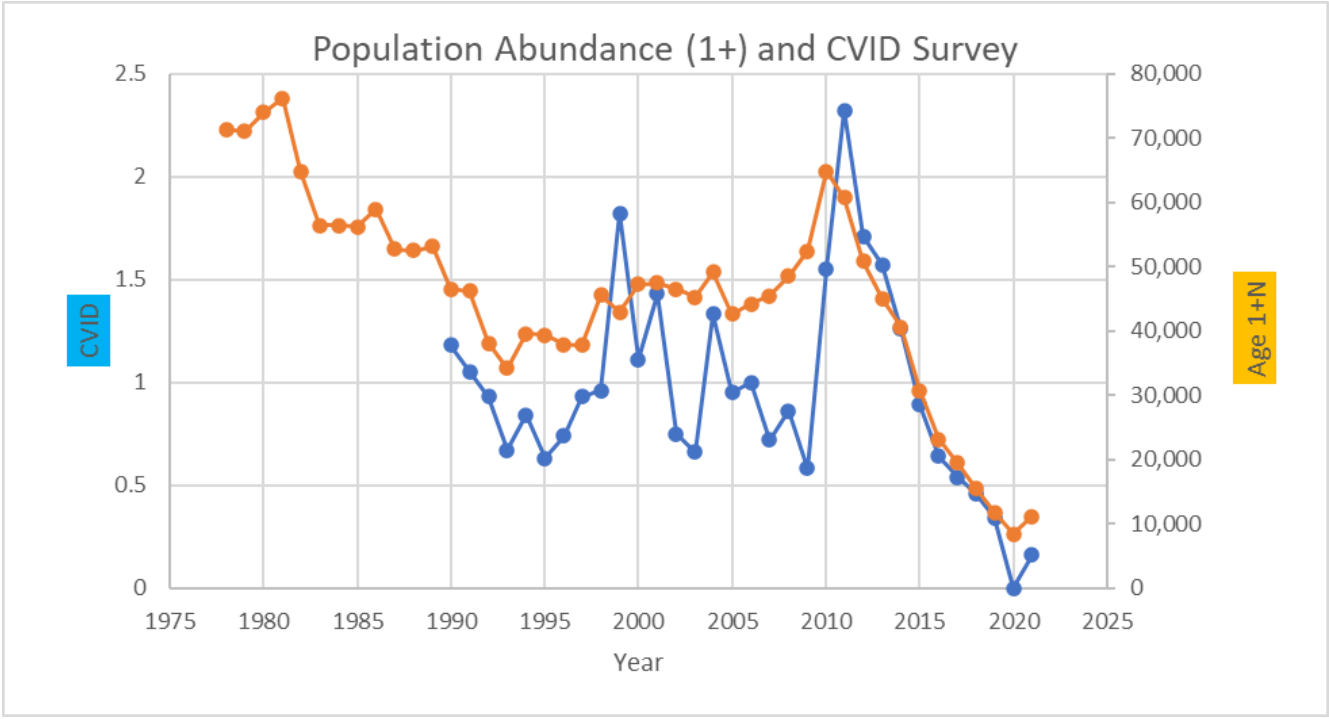
SEDAR 56: MRIP Calibrated For APAIS and older MRFSS to MRIP/APAIS

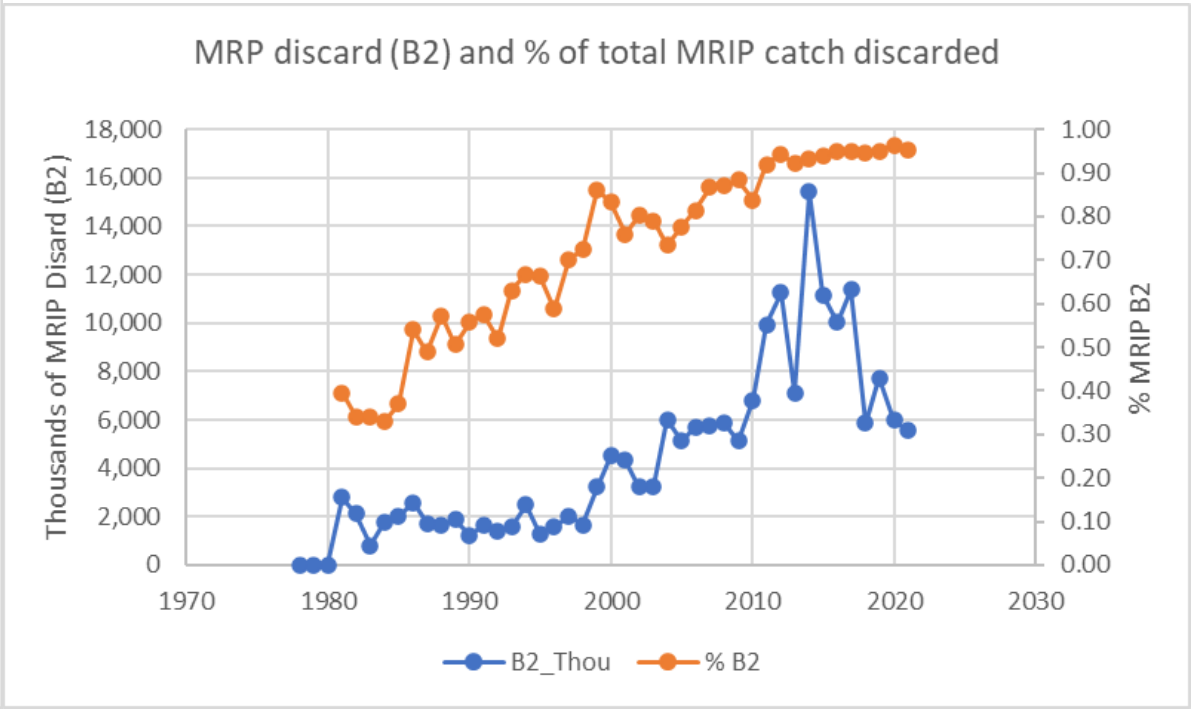
FES: Fishing Effort Survey replaces CHTS (Telephone Survey) in 2018.
FES and CHTS overlap 2015-2018 for calibration
MRIP Re-estimation for FES, entire time series

SEDAR 76 – FES re-estimation for all

https://www.fisheries.noaa.gov/recreational-fishing-data/marine-recreational-information-program-milestones

Today's Problem: Declining Abundance and Increasing Discards, Overfished, near Overfishing



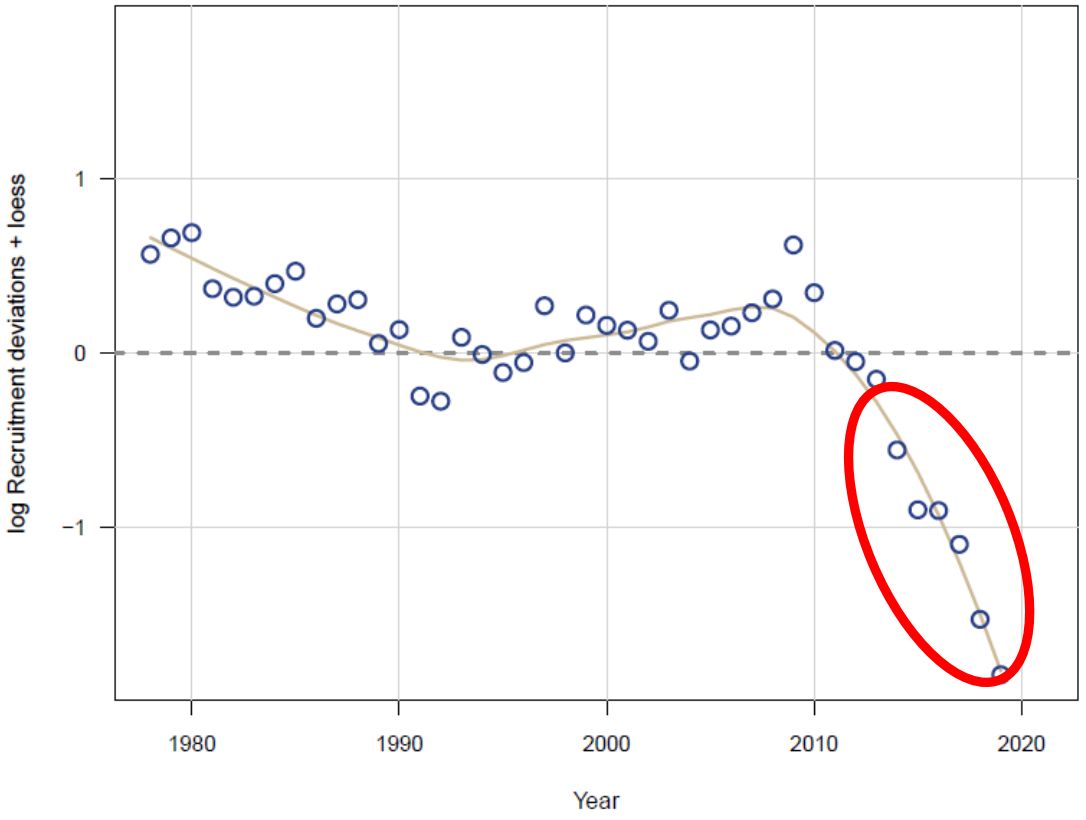


While MRIP estimates are uncertain and FES is under evaluation, there is clear evidence of population concerns that need to be addressed

From SEDAR 76 SAR and MRIP working paper

Near 10 Years of less than expected recruitment

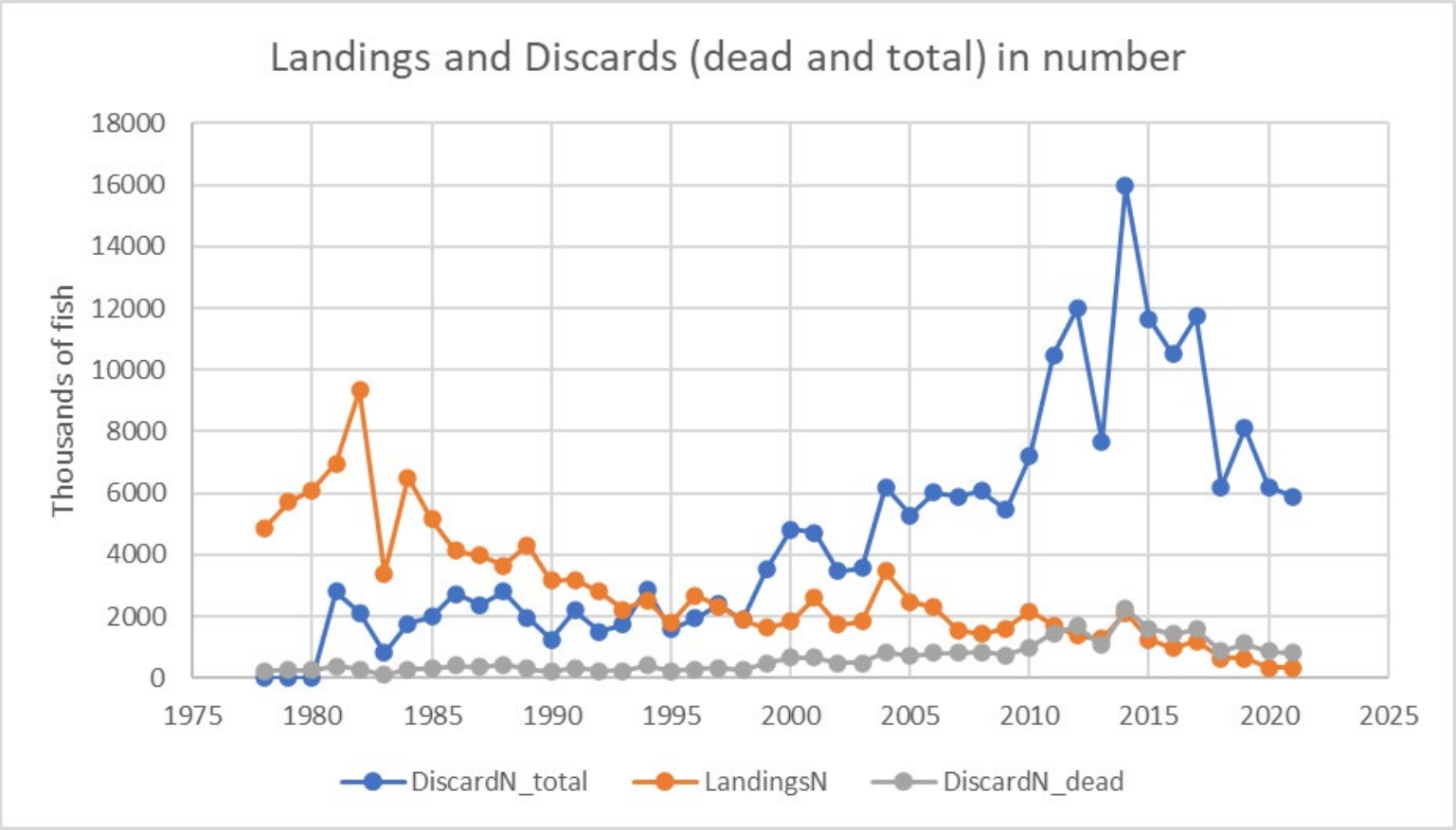
- S76 – Figure 28



Cost of Recruitment Failure

- Long Term R in Projections
  - 71 million
- Est'd average 10y 2010-2019
  - 45 million (2010 was good)
- Est'd average 5y 2015-2019
  - 21 million
- Deficits
  - 10y : 260 million
  - 5y : 240 million

Long term decline in landed fish, discard dominance



- Total landings decline while discards rise
- Impact of FES and recalibration into the late 90's – part of the discard increase?
  - about half of the MRIP discards occur in state and inland waters
- Overall discard mortality ~14%

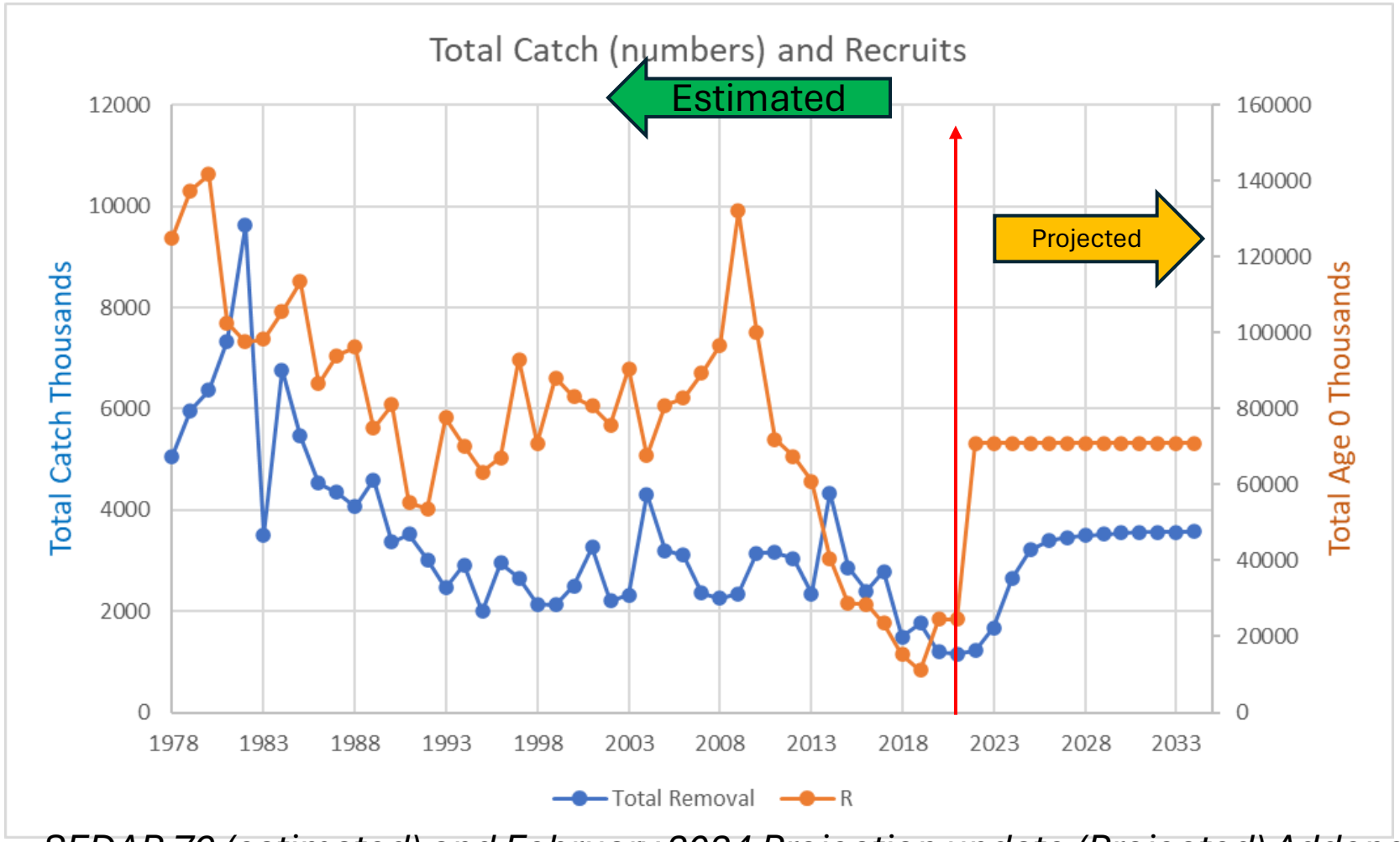
SEDAR 76 Tables Total Discards in Numbers (TOTDN) table 4, as input
Total Landings and Discards, Numbers (TotalLandN) and (DdeadNtotal) are estimates, tables 16 & 18

Tomorrows Problems:
What does this mean for the future & how to rebuild the stock

- Projection scenarios carry recent fishery conditions into the future
- High discarding rates in the last few years translate into high discarding rates in the projections
- Future recruitment levels?
- Climate impacts?

Today's challenges drive tomorrow's problems

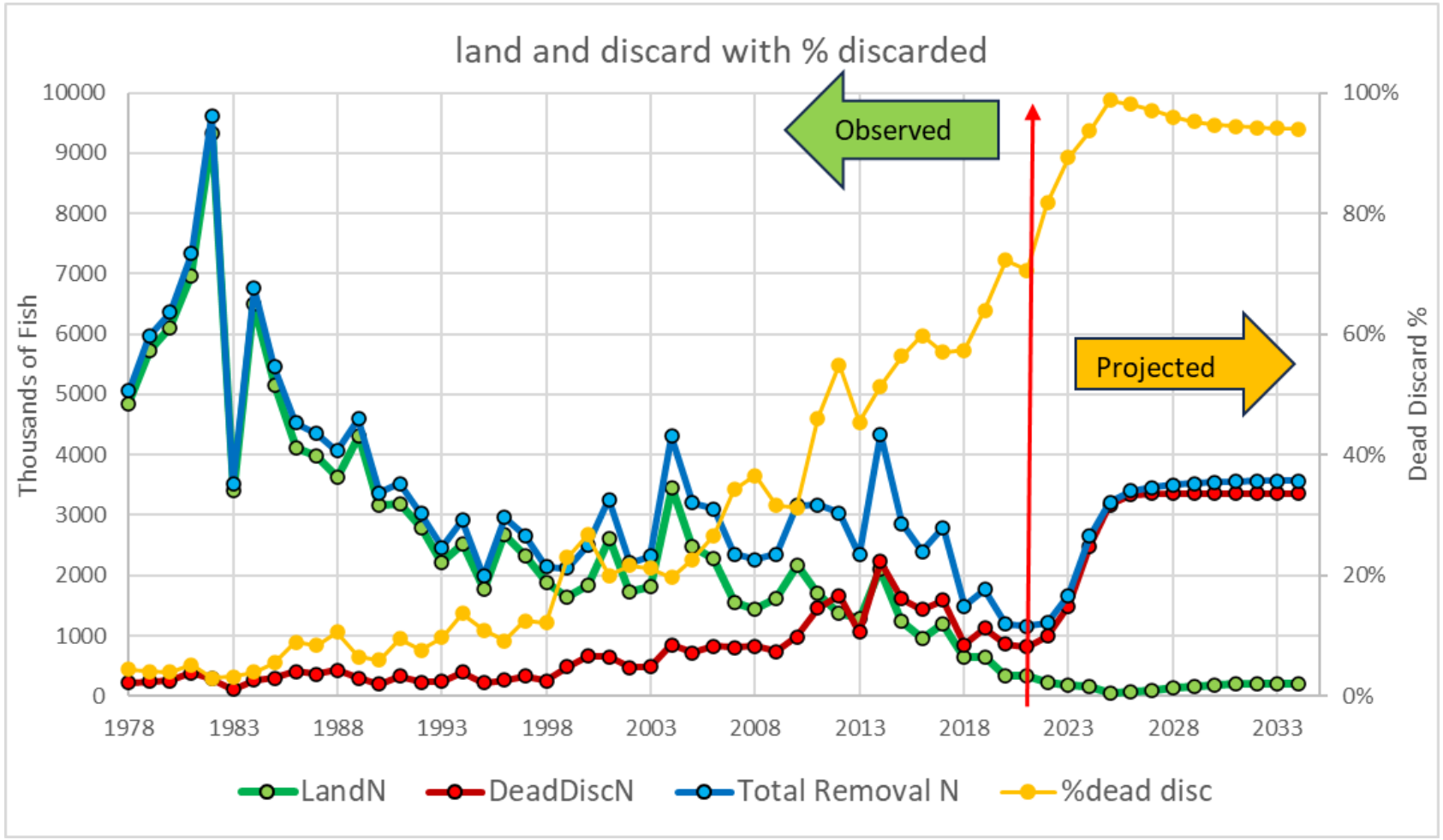
Estimated Recruitment and SSB Goal for the OFL and Rebuilding Schedule Projection



- Based on long term average R assumption
- Terminal year 2021
- 2022-2034 projected
- Addendum 3 Projection, F70% rebuild, 2/9/24 SSC meeting

SEDAR 76 (estimated) and February 2024 Projection update (Projected) Addendum 3

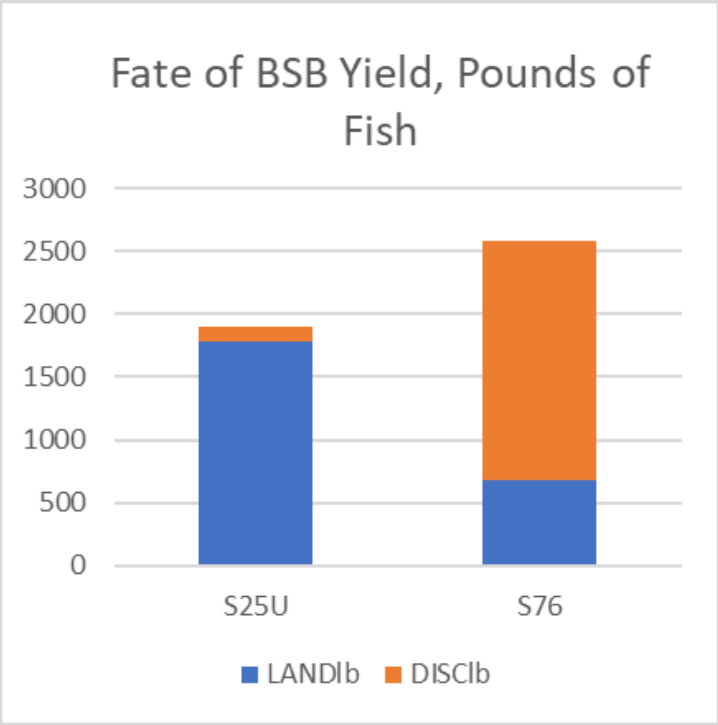
BSB DISCARD PROBLEM

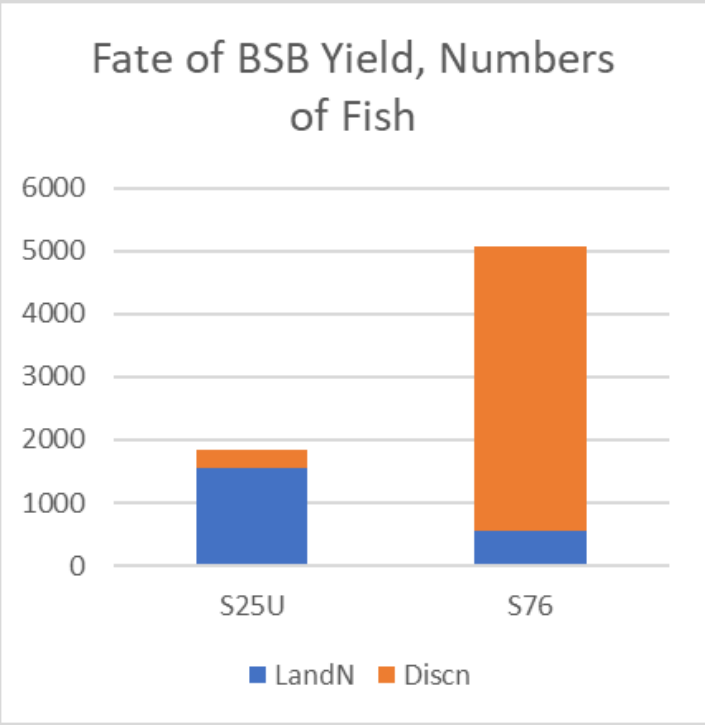


- S76 Terminal Yr 2021
- FROM LATE 90S TO PRESENT TOTAL REMOVAL SHIFT FROM LANDINGS TO DISCARDS
  - Blue line track Green (landings) then Red (discard)
- PROJECTIONS (OFL, Rebuilding) LOCK IN TRANSITION TO DISCARD FISHERY, EVEN EXTEND BEYOND OBSERVED LEVELS
  - 98% 2025

SEDAR 76 SAR and Addendum 3 Projections

Even without overfishing occurring, Discard losses decrease overall yield





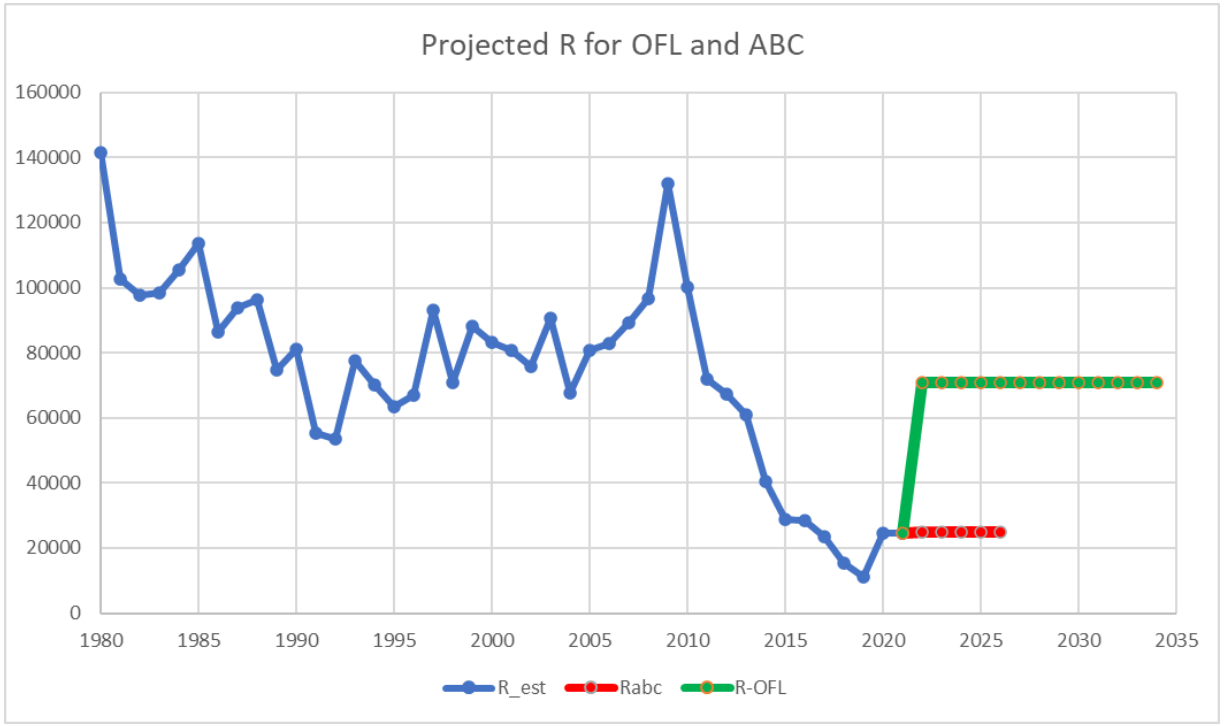
- Larger expected population of S76 provides small increase in MSY poundage – lots of small discarded fish
- If the S76 rebuilt population experienced S25U discard rates, MSY in pounds could exceed double
- Shifting 50% of current discard to landings could add 1.5 million pounds of yield

S25 Update final report and S76 Addendum 3
MSY (numbers) based on average catch weight, last 3Y, 1.14lbs S25U and 1.24lbs S76

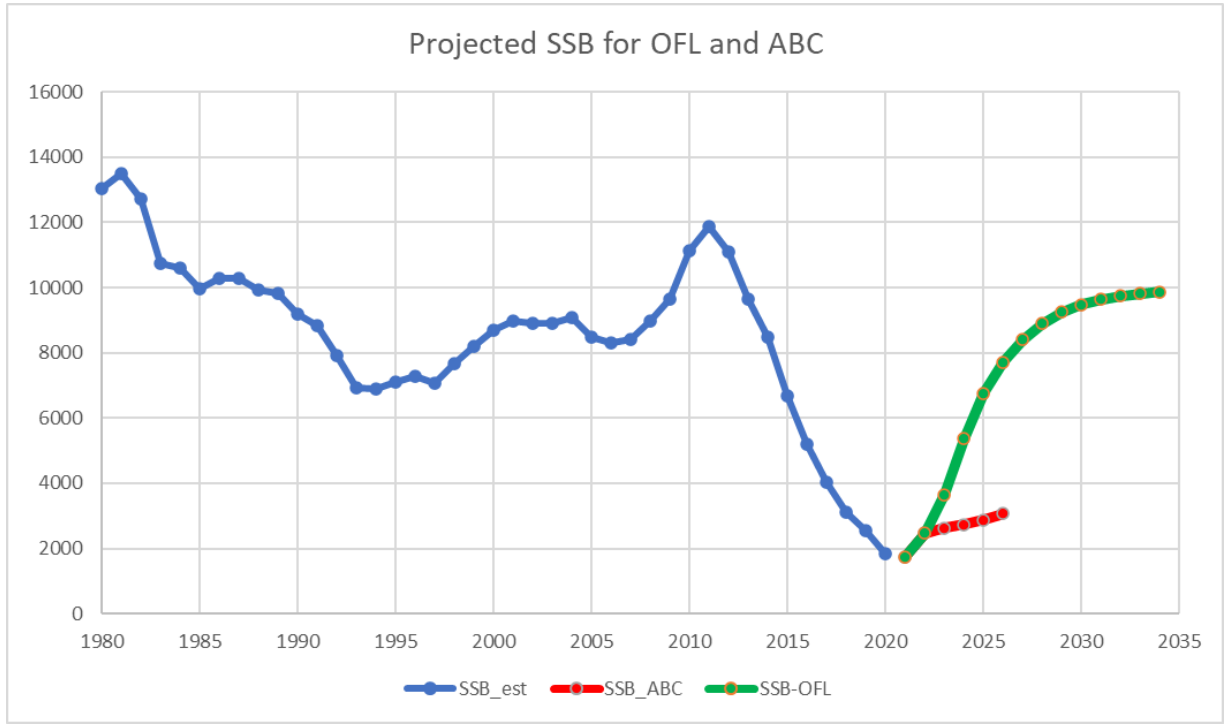
OFL and ABC Scenarios

Reflect Recruitment Uncertainty

- Recruitment Predictions



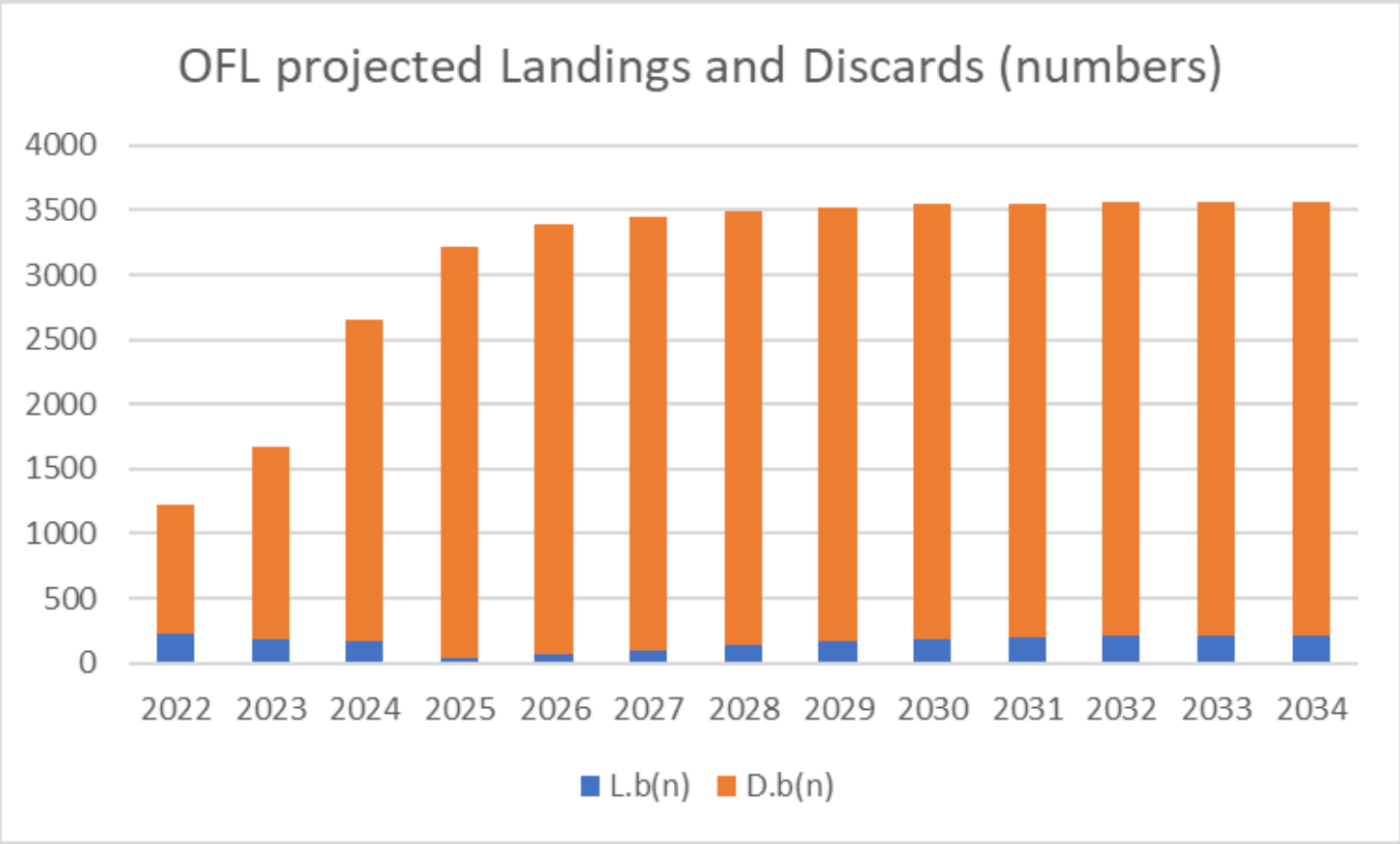
- SSB Predictions



What has recruitment done since 2019 (last actual estimate, no 2020 survey)?

SEDAR 76 SAR and Addendum 3 Projections

Rebuilding Projections
(long term recruitment)



- If current fishery patterns continue and the rebuilding projections are achieved, the future is a discard only fishery

SEDAR 76 Addendum 3 Projections

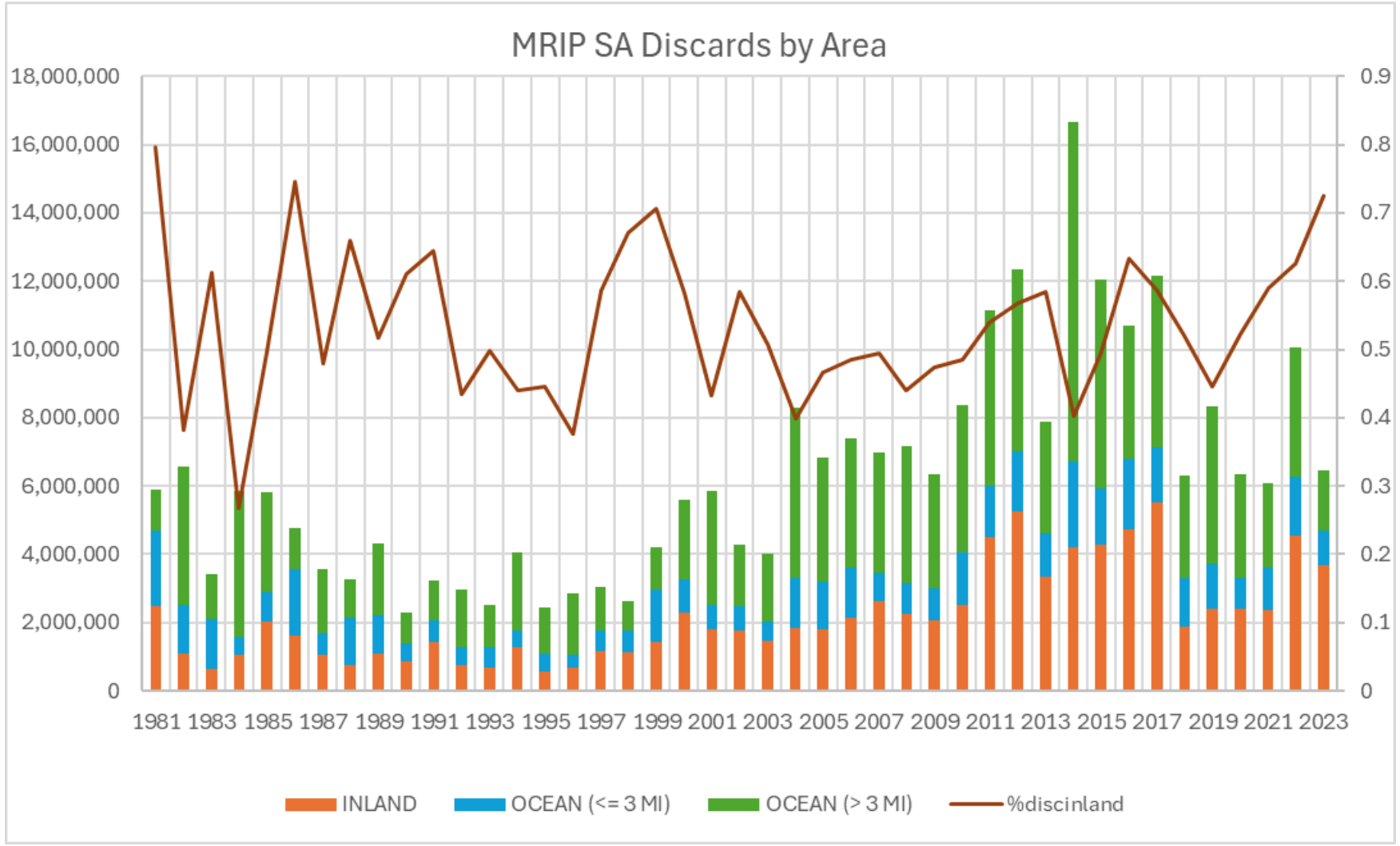
Can we get to 1990s stock abundance in 2030 and restore 1990s discard levels of 10-20%, rather than ending up as projected with 95% discard losses?

To Increase Abundance:
Lower overall F
(requires lowering discard F)
Better Recruitment

To Change the Discard Future:
Change how fishery functions

Payoff
Greater MSY lbs
Greater satisfaction

Black Sea Bass Discards by Area



- Regulatory progression is toward actions that increase discards
  - higher size
  - lower bags
  - divergence between comm and rec size
- >50% of Discards inland/inshore – not EEZ

Pers. Comm, NMFS : MRIP online query 2/9/24

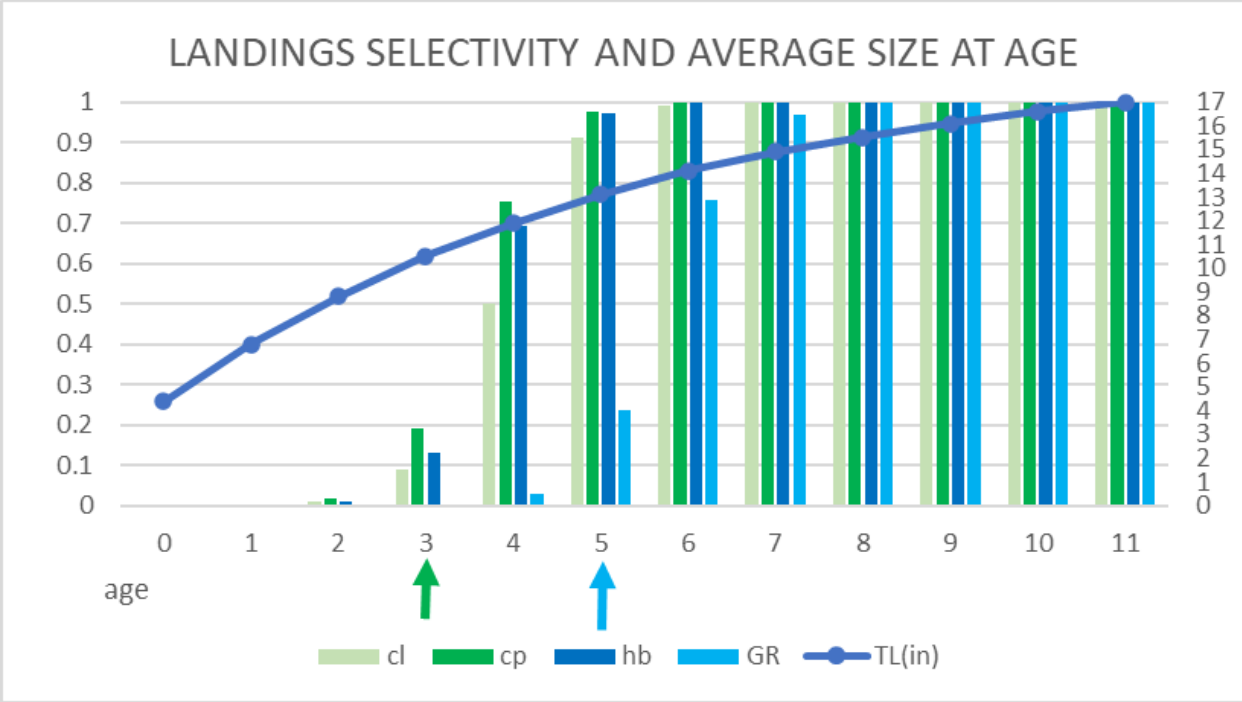
How do different commercial and recreational size limits impact discard patterns?

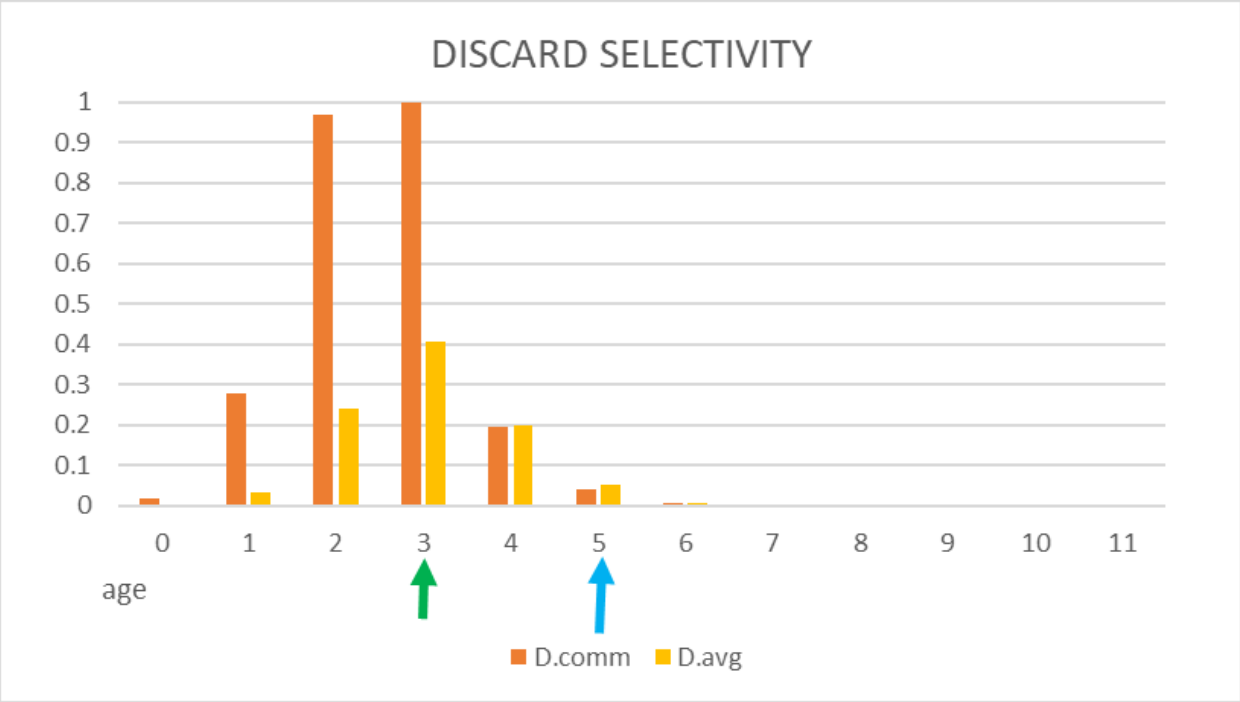
BSB grow pretty quick at younger ages
age 3: 10.5”
Age 5: 13.1”

Comm: 11”
Rec: 13”

Equalize Size Limits?

Recent Average Selectivity by Sector for landings and discards

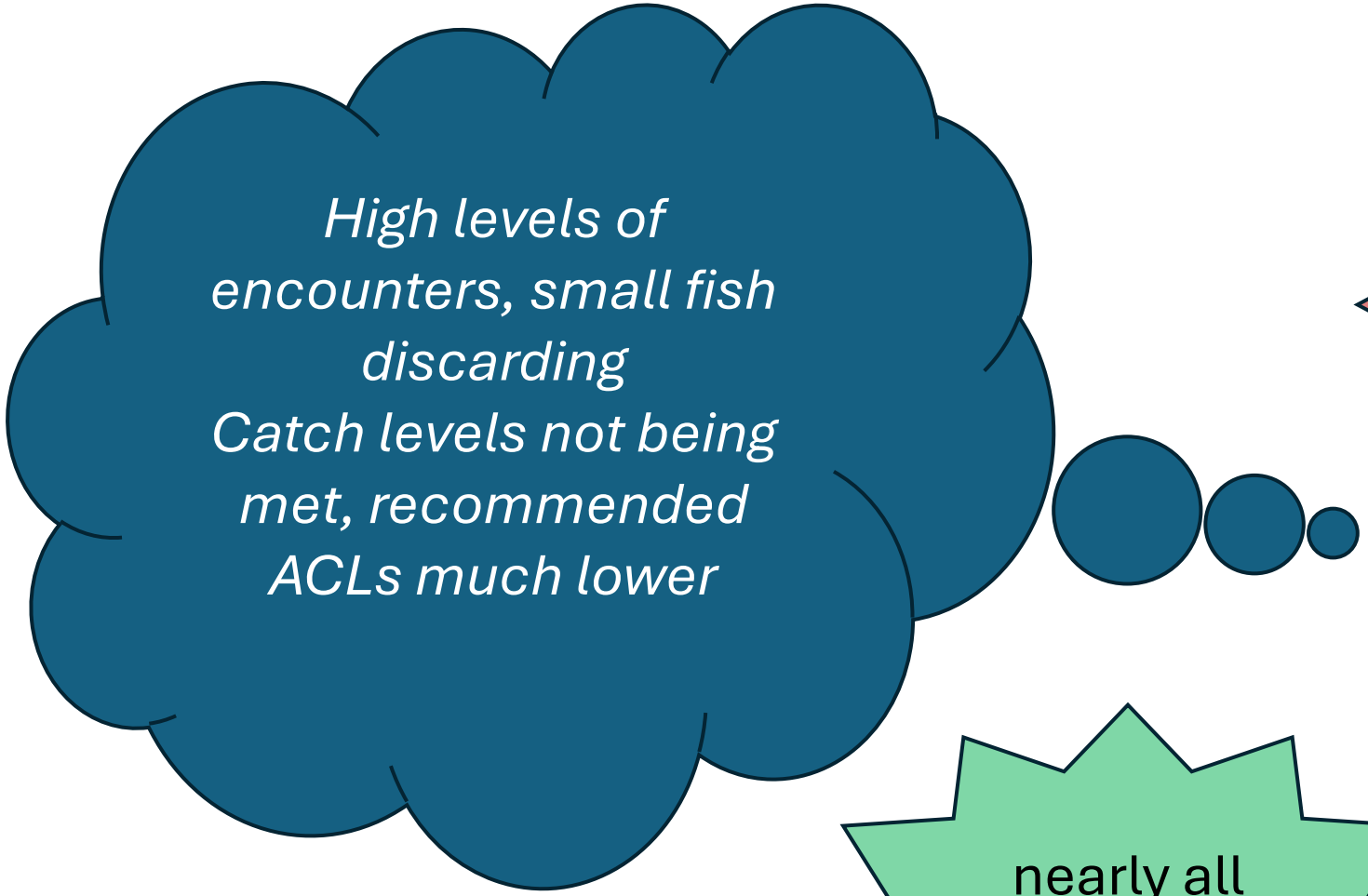




Selectivity indicates the amount of each fleet's annual fishing mortality rate (F) exerted on each age

SEDAR 76 SAR

Age 6 abundance is about 25% of Age 4 abundance



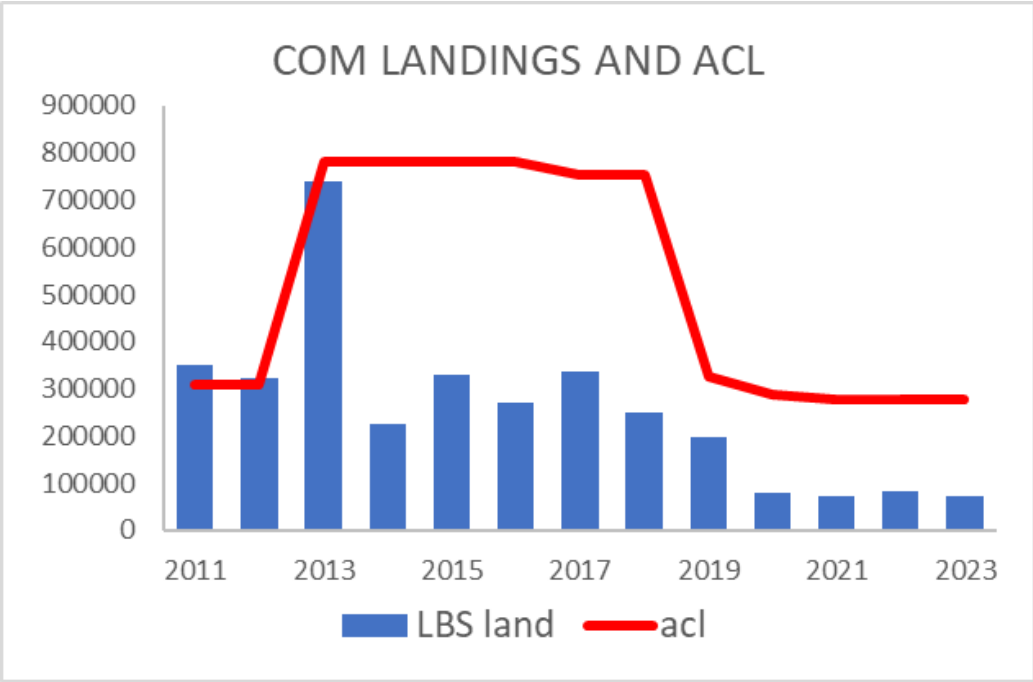
Significant Inland/Inshore availability young, small fish

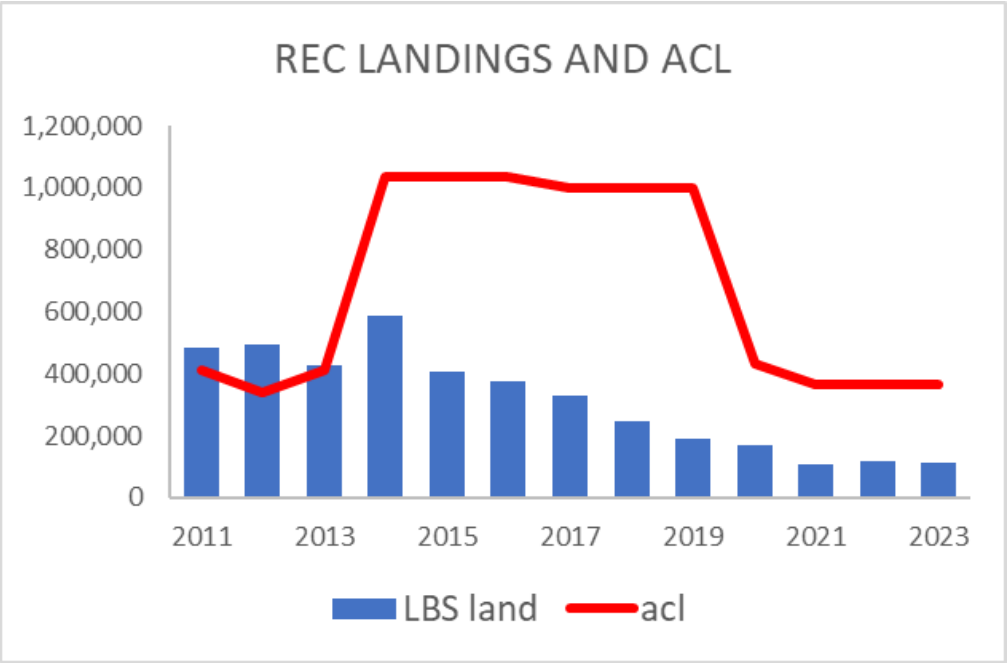
nearly all rec fish discarded

Aggregate Rec Limit?
Reduced Rec Bag Limit?

Landings and ACL by Sectors

(FROM SERO ACL MONITORING WEBSITE, 2/27/24)

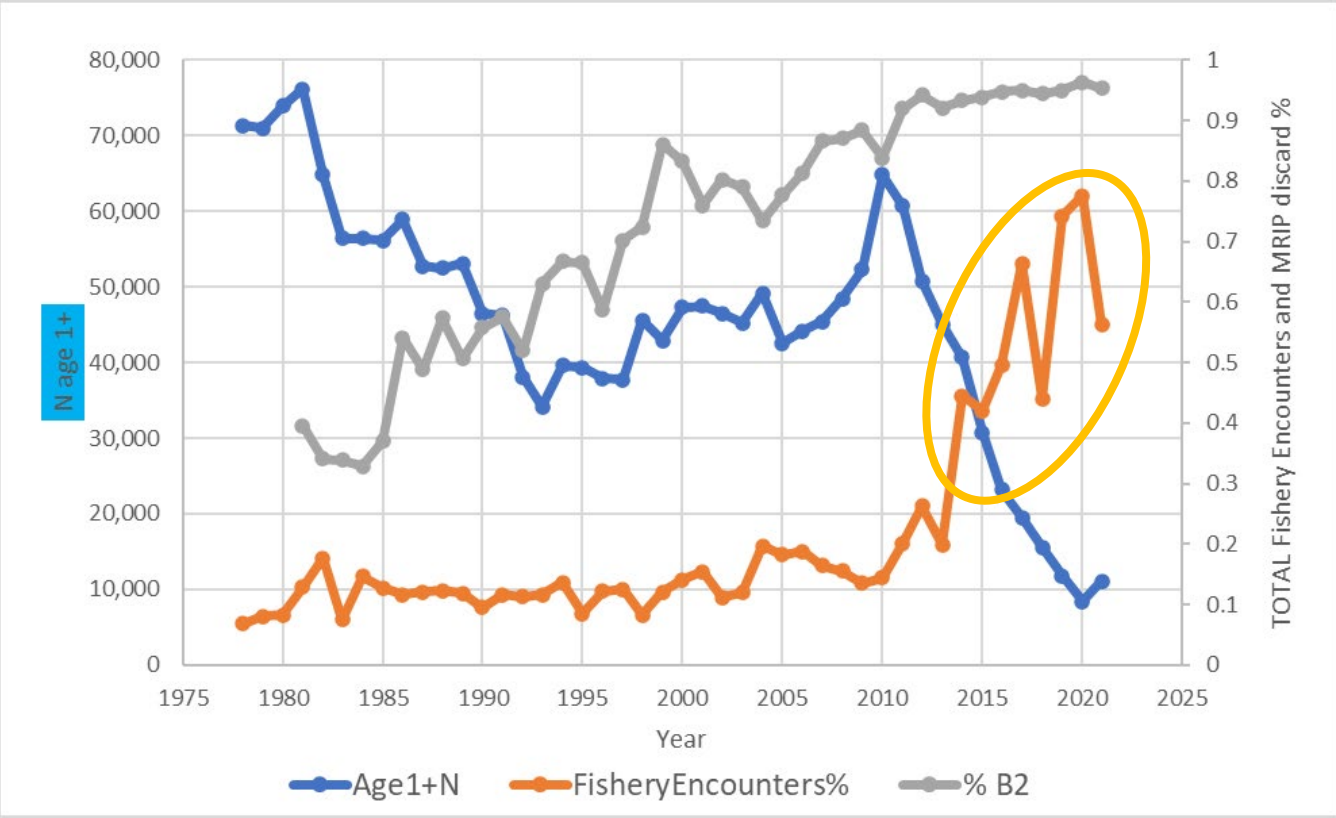




- These years are past the 2011 Population Peak
- Neither sector achieved the high SEDAR 25 ACLS 2013 – 2019
- Com fishery closed in 2013

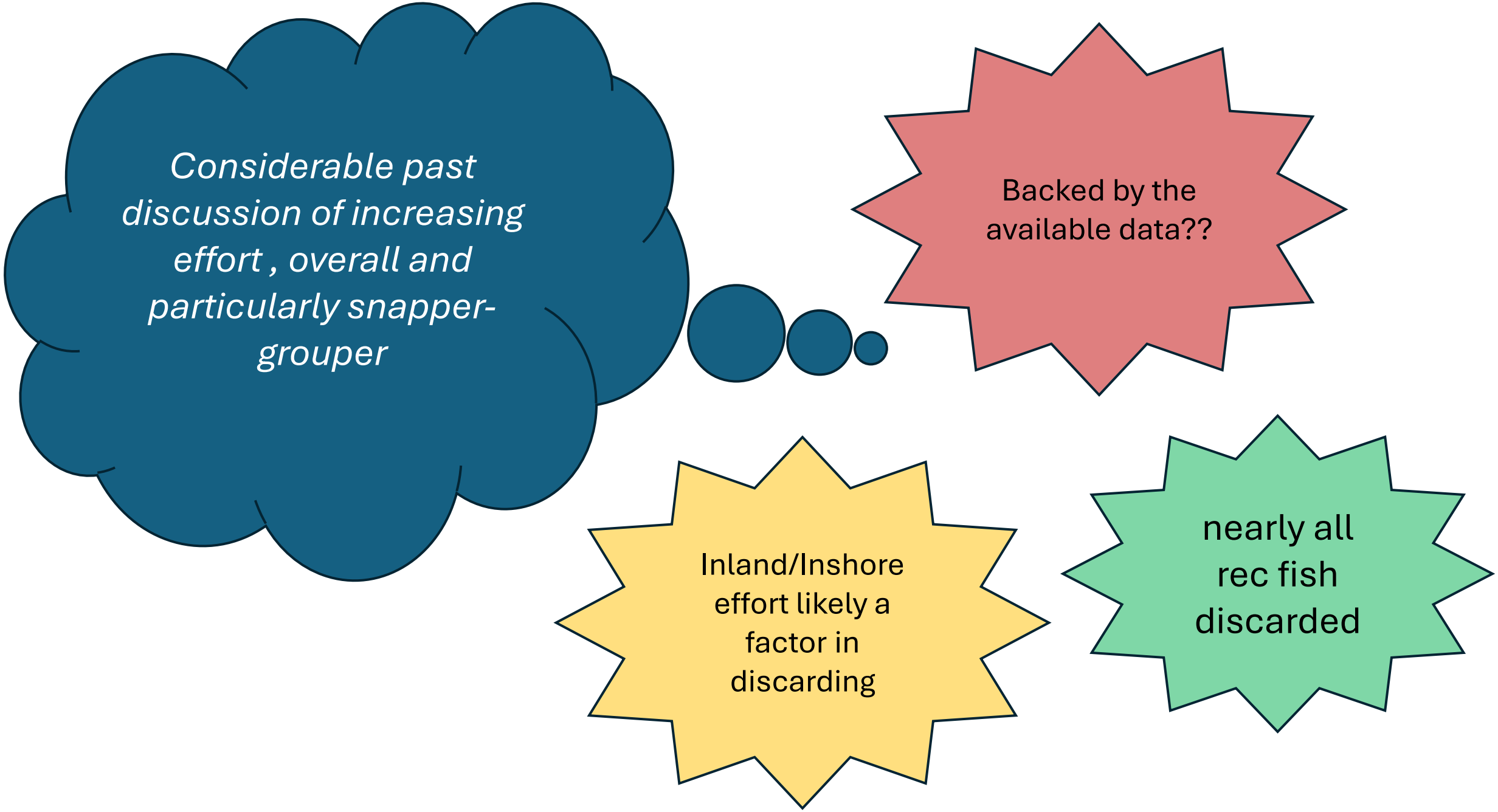
Being below an ACL is not always OKAY!

Something Changes after 2018

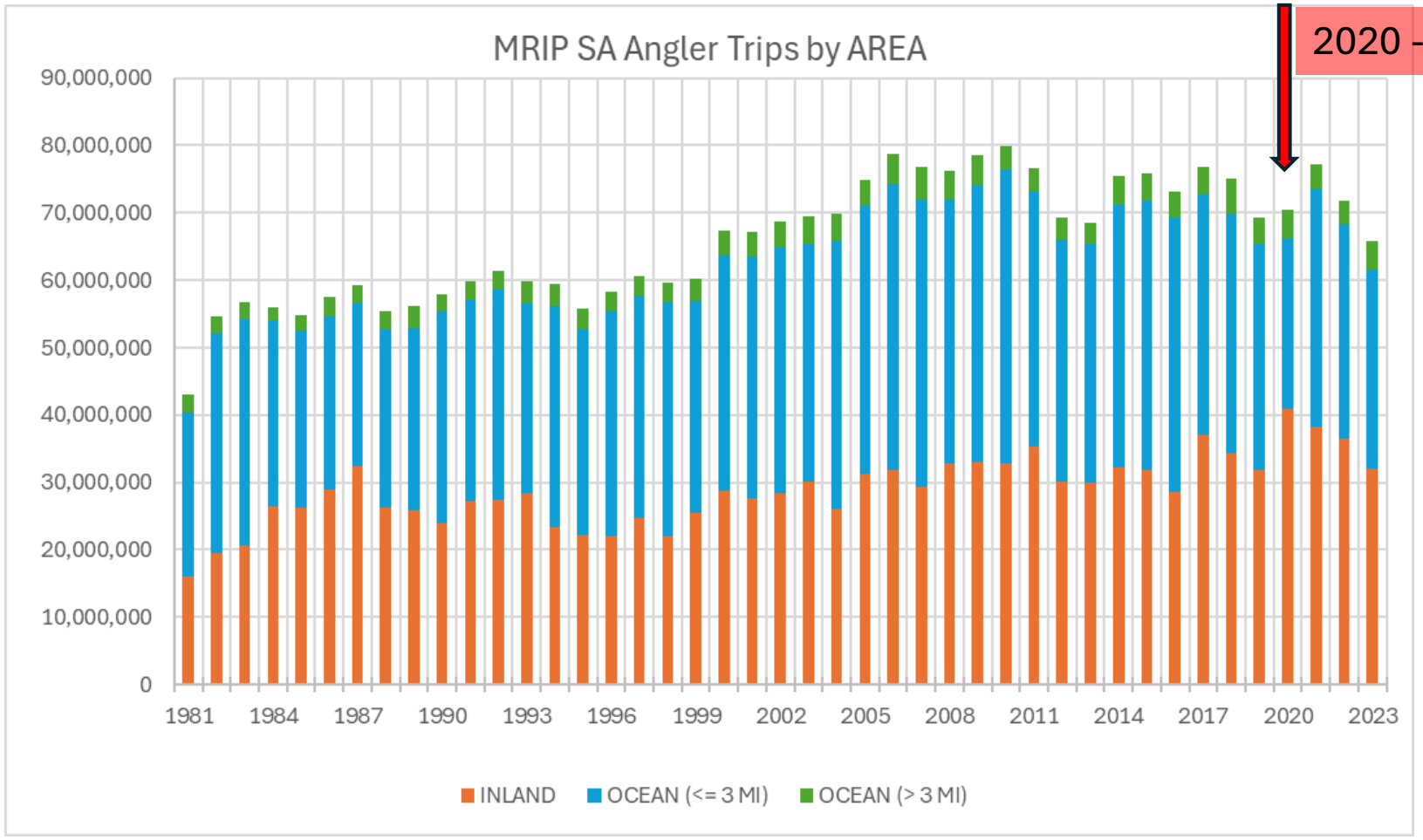


- "Encounters" – the total number of black sea bass reported by MRIP – landed or discarded, dead or alive
- Around 10% most of the series
- Jumps to 40% - 80% after 2014
- recall total discards peaked 2011-2017
- Rec discard rate now around 95%

SEDAR 76 SAR and MRIP working paper


Considerable past discussion of increasing effort , overall and particularly snapper-grouper
Backed by the available data??
Inland/Inshore effort likely a factor in discarding
nearly all rec fish discarded

SA effort – are we past the peak?

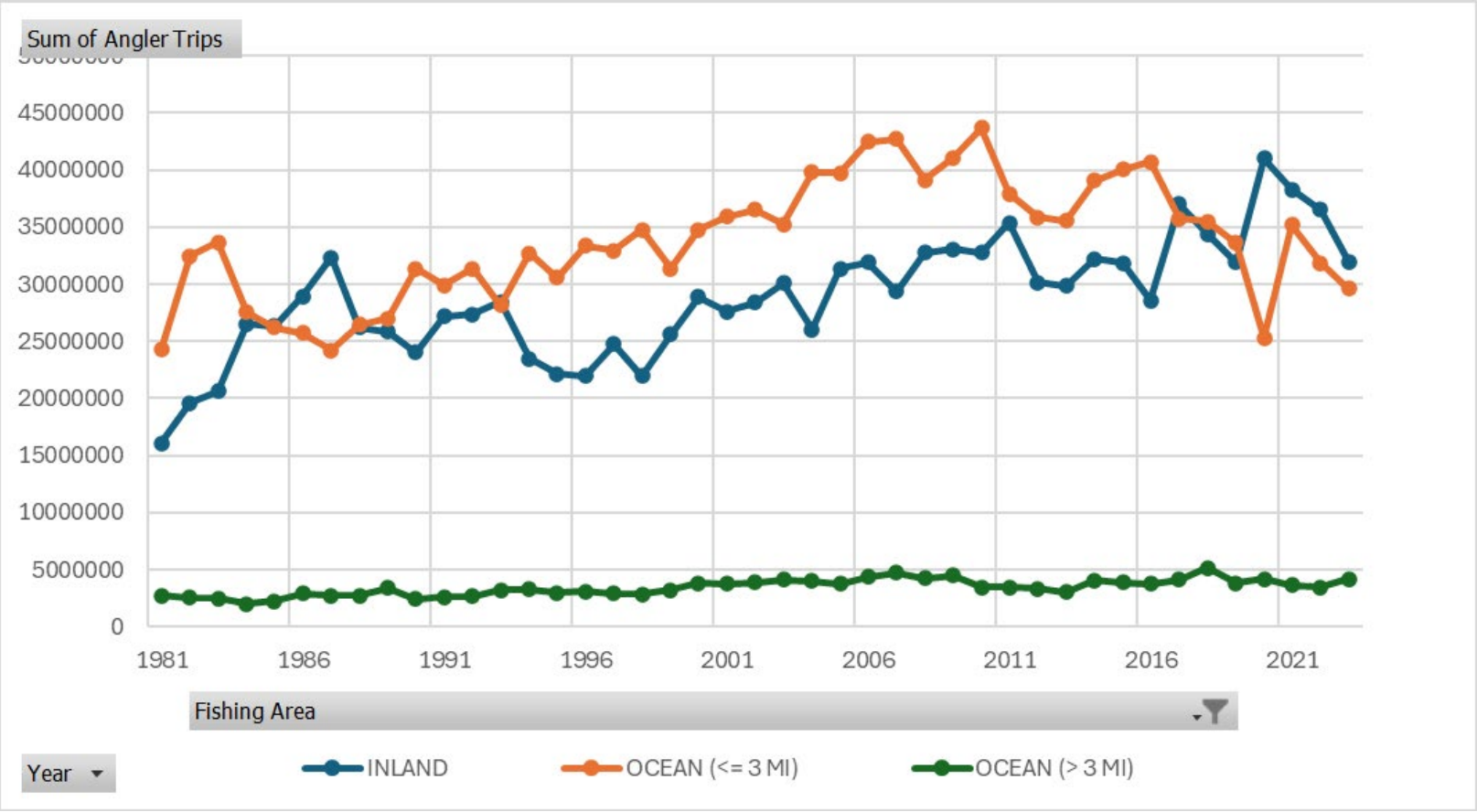


- Total peak 2005-2011
  - 77m total
- Last 5y 71m total
- Avg % trips by Area
  - Inland 44%
  - Inshore 51%
  - Offshore 5%
  - No trend
- Recent decline…post COVID or just noise (see 2010-13)

Pers. Comm, NMFS : MRIP online query 2/9/24

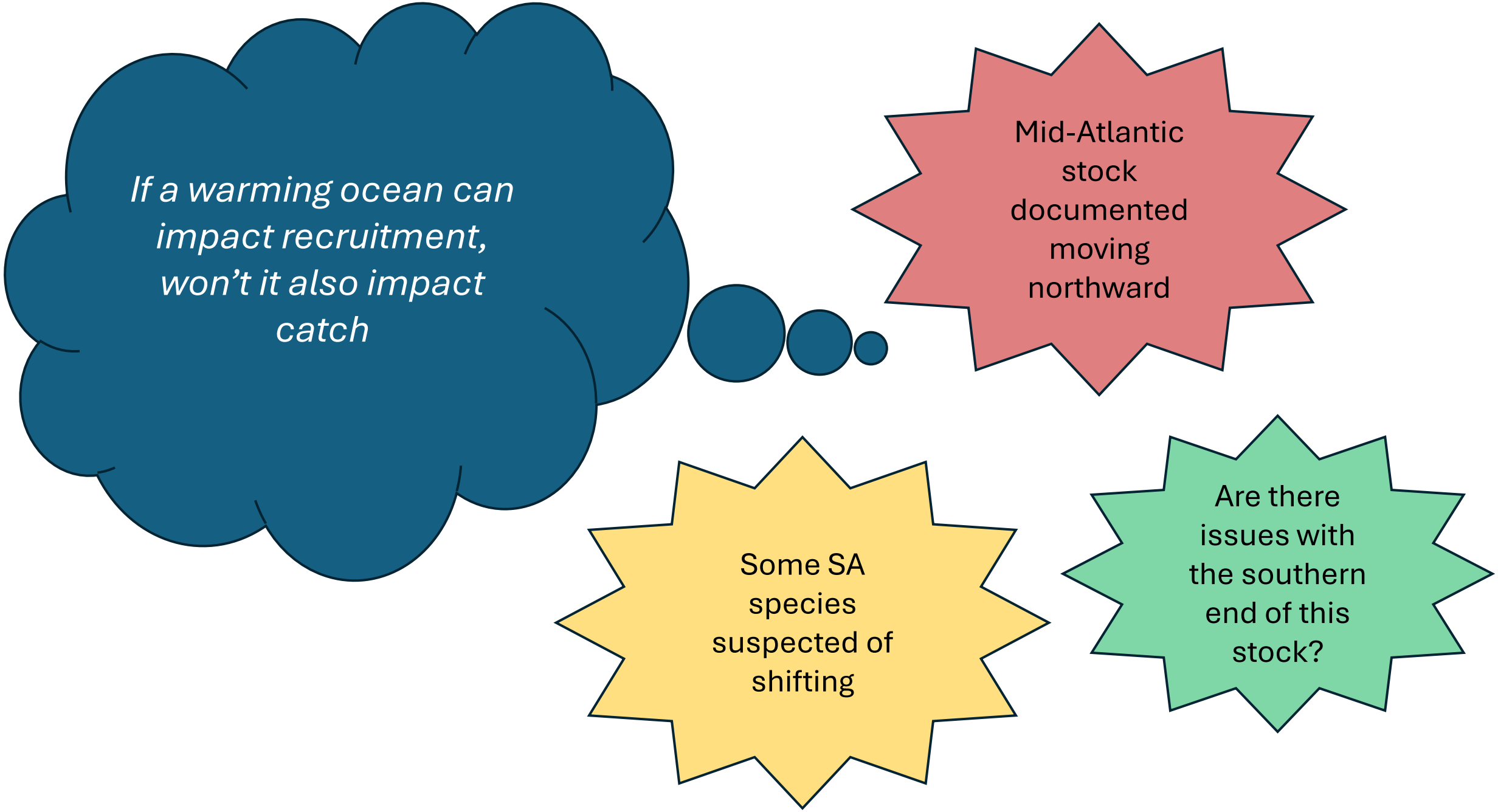
MRIP EFFORT TRENDS BY AREA

Same info as prior slide, different view

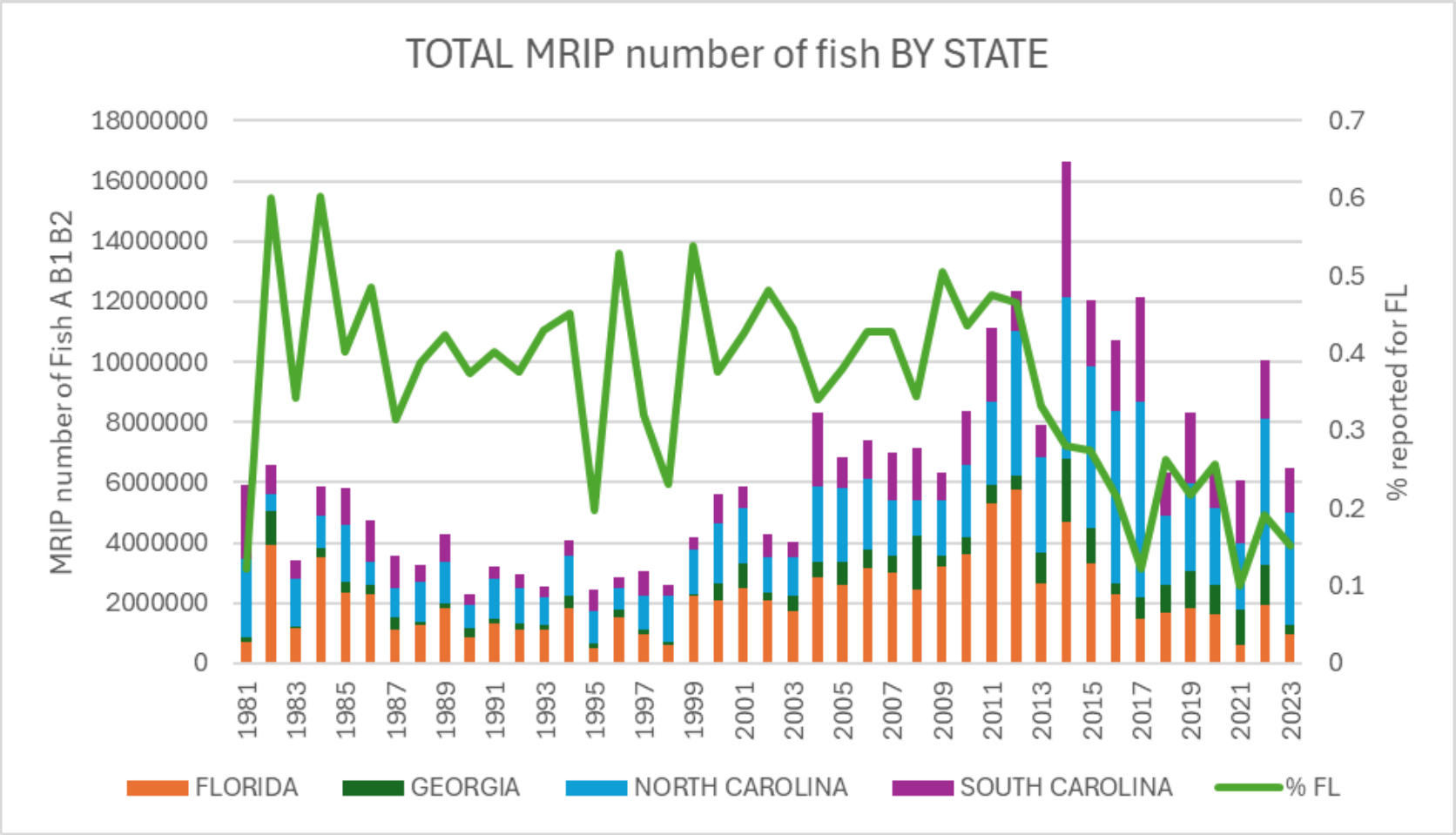


- Ocean<3mi peaked 06-11.
- Ocean>3mi very flat for decades
- Inland peaked 2020…COVID…since declined.

Pers. Comm, NMFS : MRIP online query 2/9/24


If a warming ocean can impact recruitment, won't it also impact catch
Mid-Atlantic stock documented moving northward
Some SA species suspected of shifting
Are there issues with the southern end of this stock?

MRIP ENCOUNTERS BY STATE



- Florida's portion of total Black Sea Bass reported by MRIP
- Early Years
  - 40% 1989-1991
- Recent Years w/o 2020
  - 20% 2017-2019
  - 12% 2021-2023

Pers. Comm, NMFS : MRIP online query 2/9/24

Conclusions ???

- Despite an assessment in constant flux and significant input uncertainties, independent surveys (CVID) provide strong evidence that the stock is in significant decline.
- Climate change may be contributing to recruitment failure and loss of the stock on its southern end – are long term projections based on historic conditions realistic?
- Recreational discards due primarily to the size limit are a major challenge for management to solve.
- Projection assume current discard F continues. Need to reduce discards and change the Landings:Discard relationship to increase chances of success and optimize satisfaction and access from the available production.