



Atlantic Mackerel 2024-2025 Specifications

December 2023 Council Meeting

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Overview

- Management Summary
- A bit of history (assessments)
- Recent performance
- Advisory Panel (AP) Input
- Scientific and Statistical Committee (SSC)
 - Updated advice
- Staff/Monitoring Committee Recommendations
- Council discussion/motions

Acronyms

- SSC = Scientific and Statistical Committee
- ABC = Acceptable Biological Catch
- ACL = Annual Catch Limit (ABC-Canada)
- AP = Advisory Panel
- MT = Metric Tons = 2,204.6 pounds
 - 450 MT = almost 1 million pounds

Management Summary

- Atlantic mackerel plan began in 1978
- *Limited Access* directed fishery
 - Three Tiers with trip limits for Tiers 2/3
- Open access/incidental permits: 20,000 pounds
- Phased trip limits as quota approached

- River herring/shad (RH/S) cap (2018/19 closures)

2023 Specifications (MT)

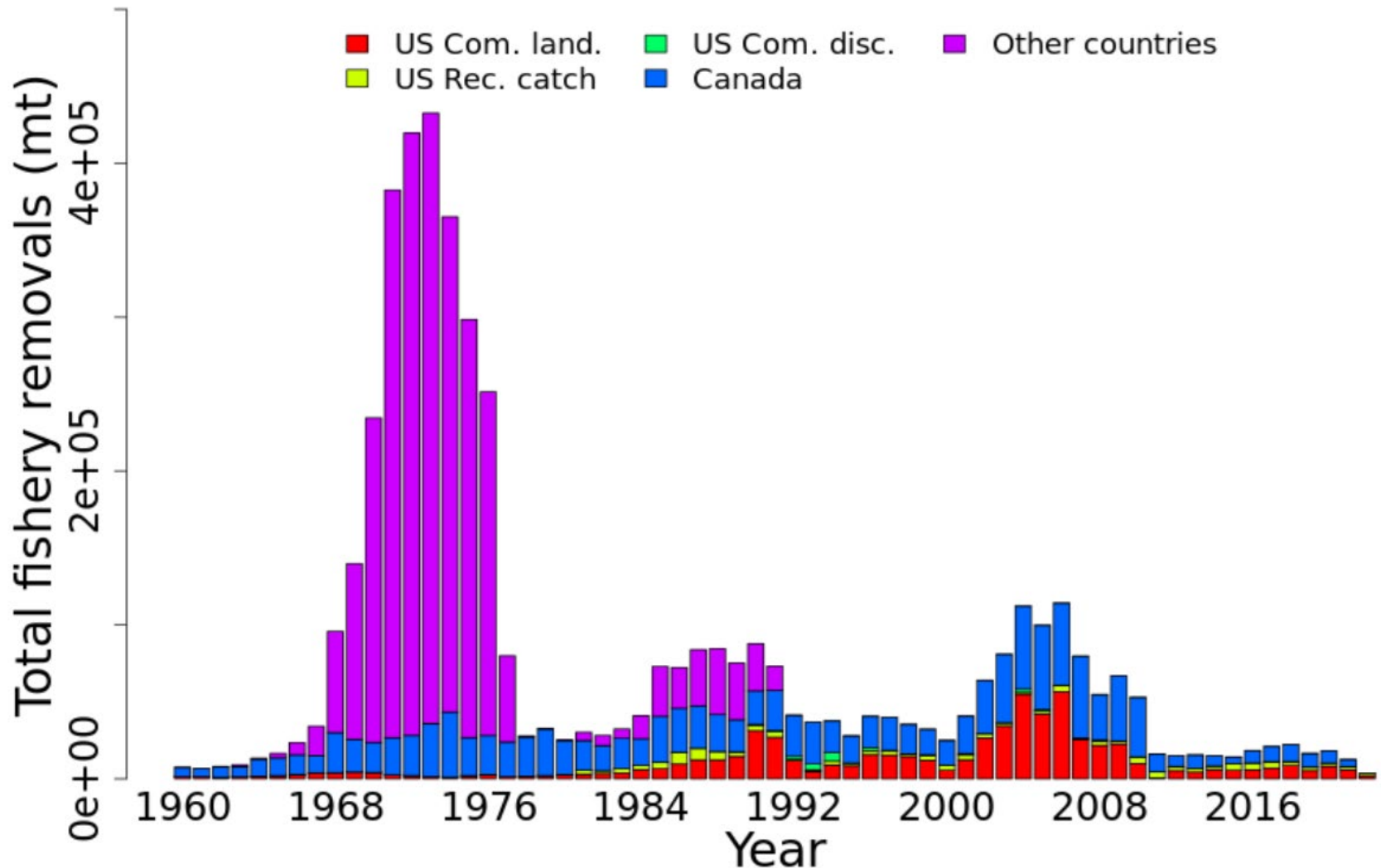
ABC/ACL	8,094	a
Canadian Catch Deduction	2,197	b
Rec Catch Deduction	2,143	c
Commercial Discards	115	d
Commercial Quota	3,639	$e = a - b - c - d$
Before May 1 First Closure Threshold (-886 mt)	2,753	$f = e - 886$
May1/after First Closure Threshold (-443 mt)	3,196	$g = e - 443$
Final Closure Threshold (-100 mt)	3,539	$h = e - 100$

Rebuilding

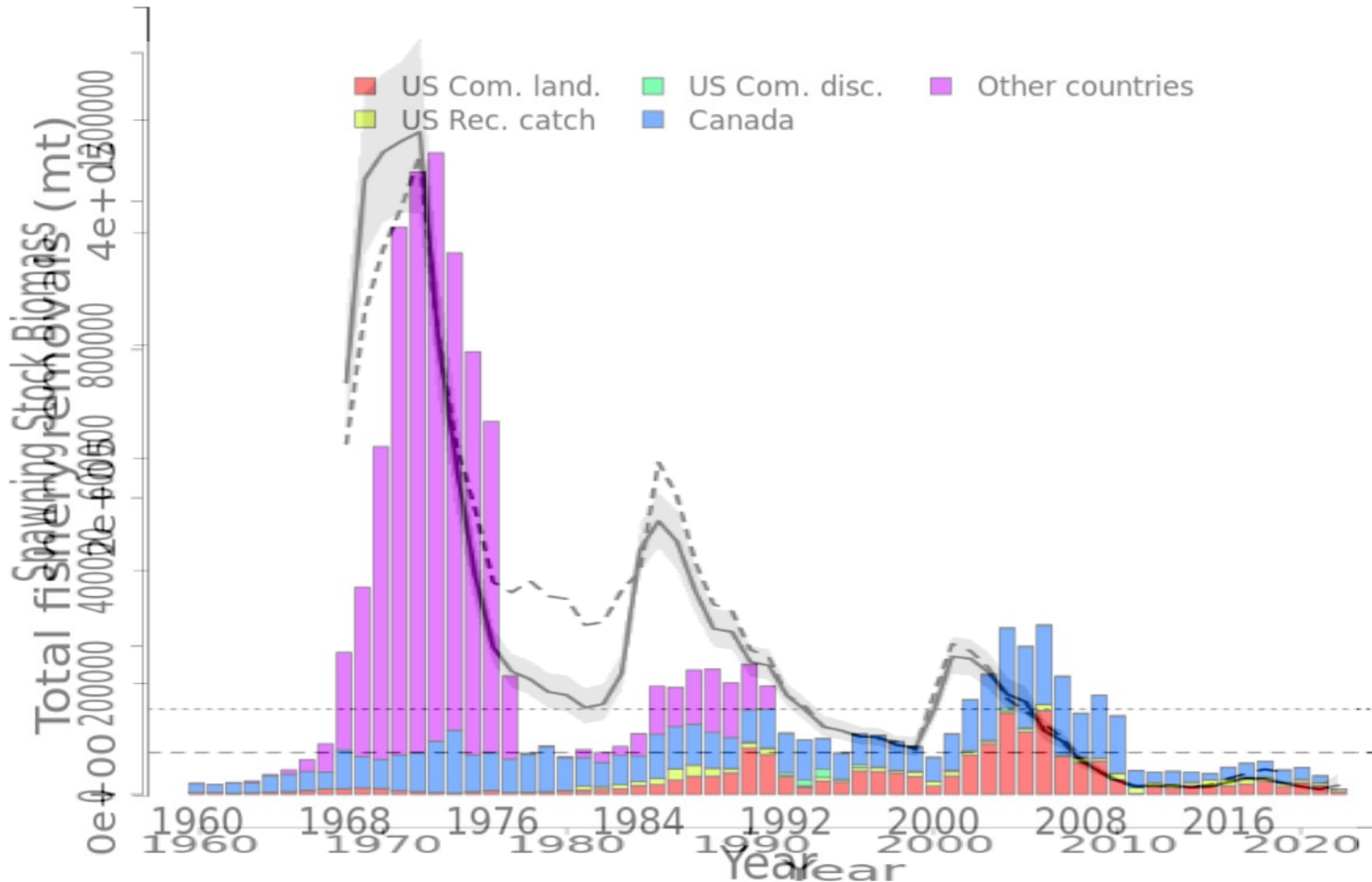
Table 1. Revised rebuilding plan catch and initial biomass trajectory.

	Catch (MT)	Biomass (MT)
2023	8,094	80,745
2024	9,274	91,738
2025	10,540	103,756
2026	11,906	116,857
2027	13,408	131,291
2028	15,004	146,553
2029	16,631	162,239
2030	18,261	177,731
2031	19,814	192,045
2032	21,215	204,796

History – Fishery



History – Fishery



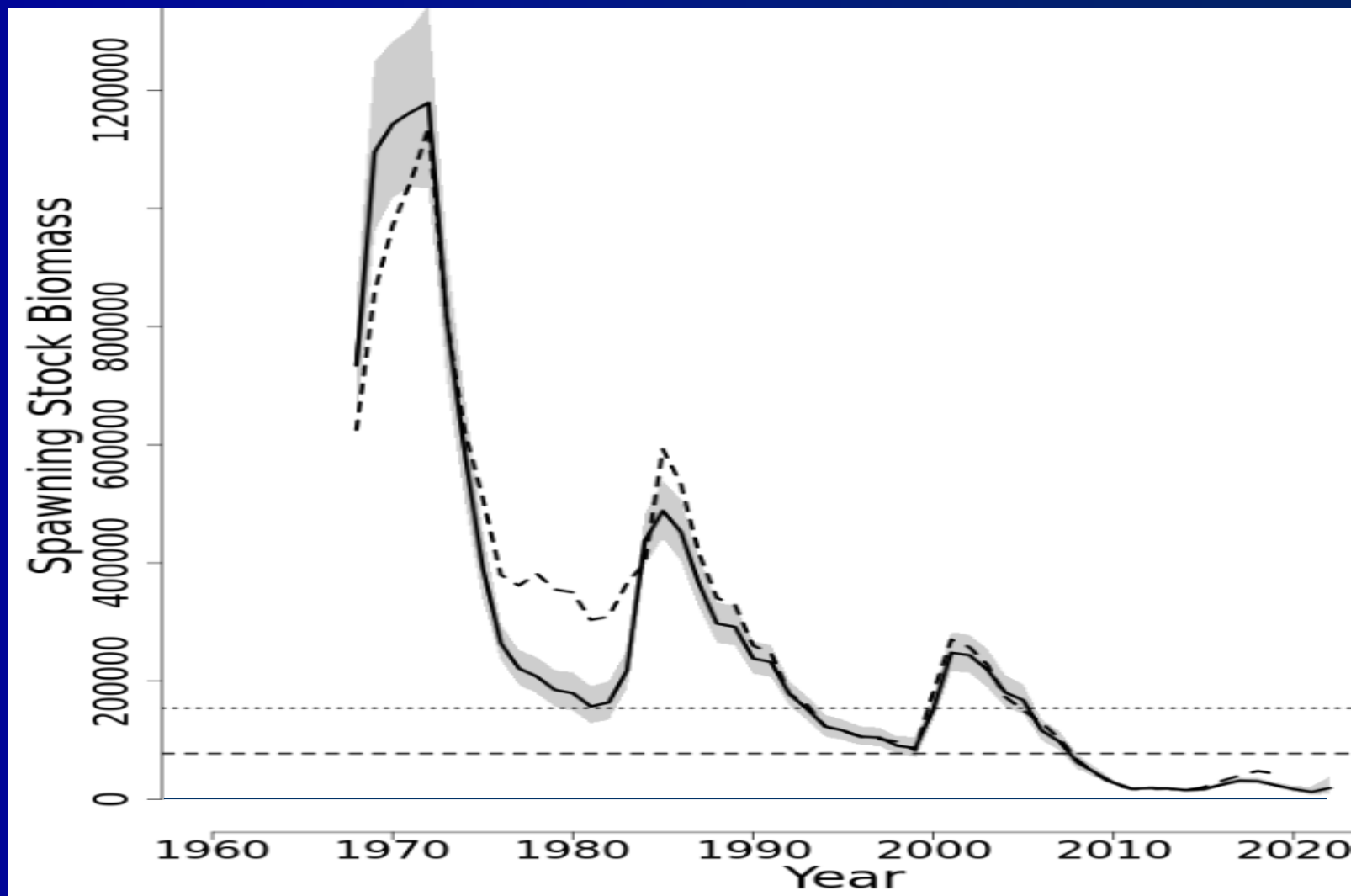
History - assessments

- 2005: In 2003/2004, stock highest ever...
- 2009/2010 TRAC: something's wrong...
- 2018 Benchmark: Overfished, and overfishing since late 1980s!
- 2021/2023 MTAs: not much change...

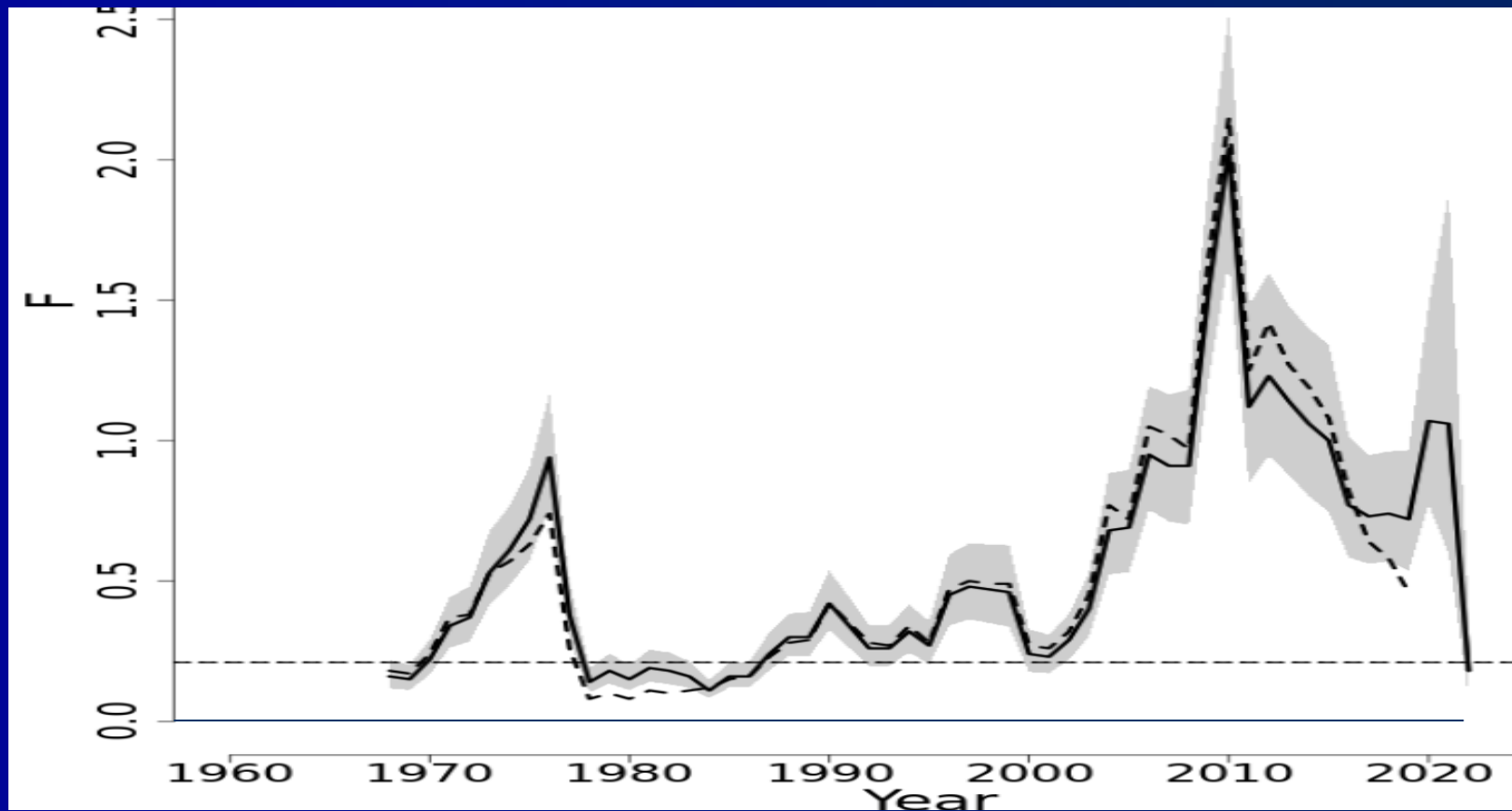
History - assessments

- The 1997 mackerel allowable biological catch was specified about ten times higher than what we now think the entire SSB was in that year...

Stock Status – to 2022



Stock Status – to 2022



Stock Status – in 2022

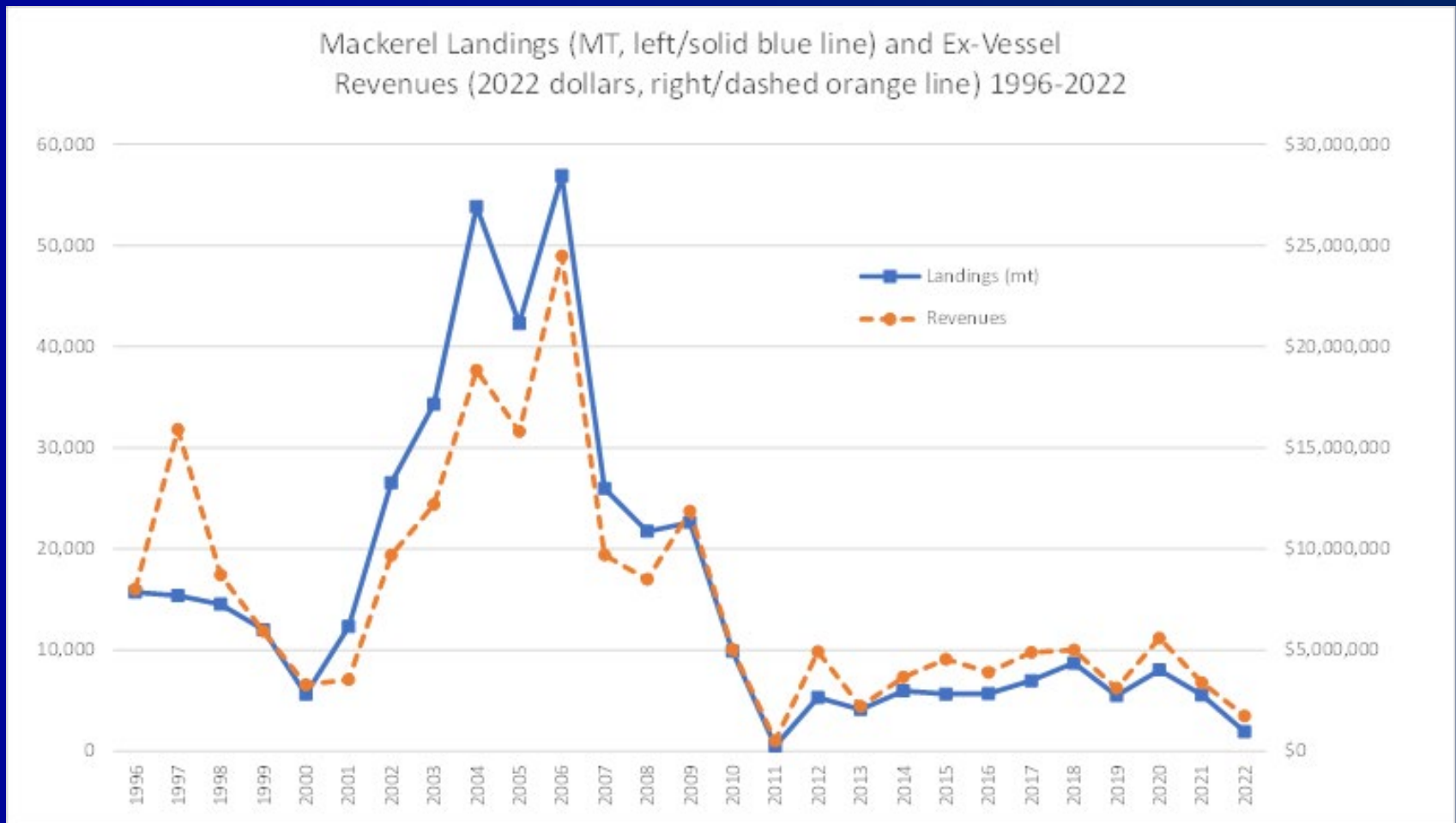
- 12% of the biomass target
- Just under overfishing (low 2022 catch)
 - 1st time in 35 years

Aug 2023 Emergency Action

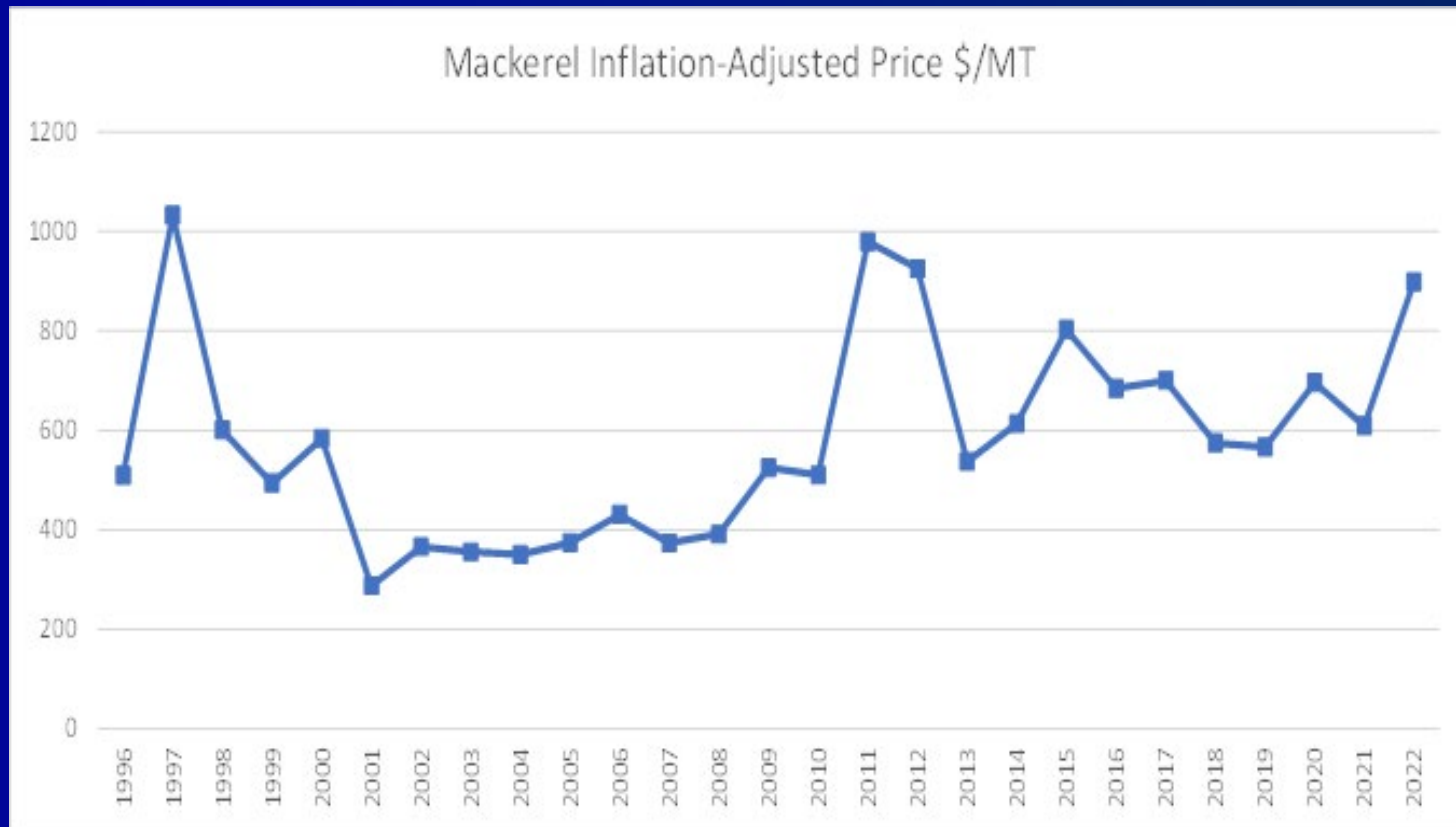
- Given assessment and likely 2024 quotas...
...close directed commercial fishery
- October 12, 2023: interim trip limits of 20,000 lb for limited access vessels and 5,000 lb for open access vessels

Recent Performance...

Landings/Revenues 1996-2022



Prices 1996-2022



2022 Landings Details

2021

2022

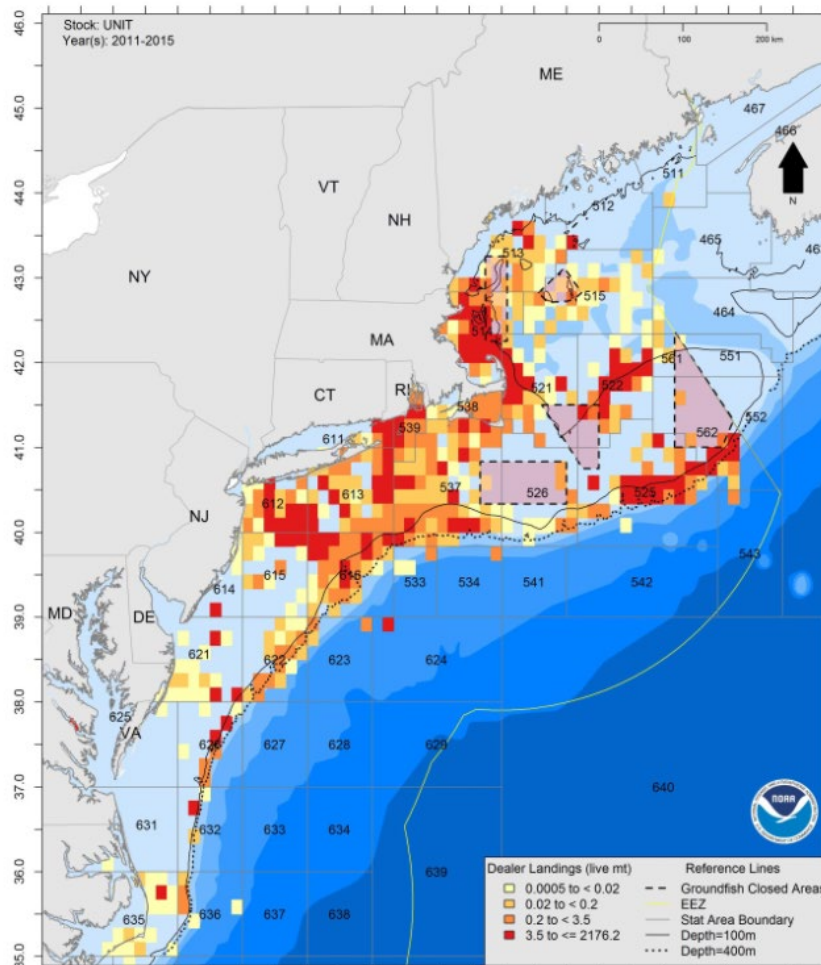
Stat Area	Metric Tons	Stat Area	Metric Tons
522	2,023	514	1,412
521	1,854	522	147
612	992	521	47
514	450	537	35
Other/CI	332	539	25
Total	5,652	611	22
		616	12
		Other/CI	27
		Total	1,725

GEAR	MT
TRAWL,OTTER,MIDWATER	1,155
HAND LINE, OTHER	249
LONGLINE, BOTTOM	247
UNKNOWN	165
TRAWL,OTTER,BOTTOM,FISH	90
Other	42
Total	1,948

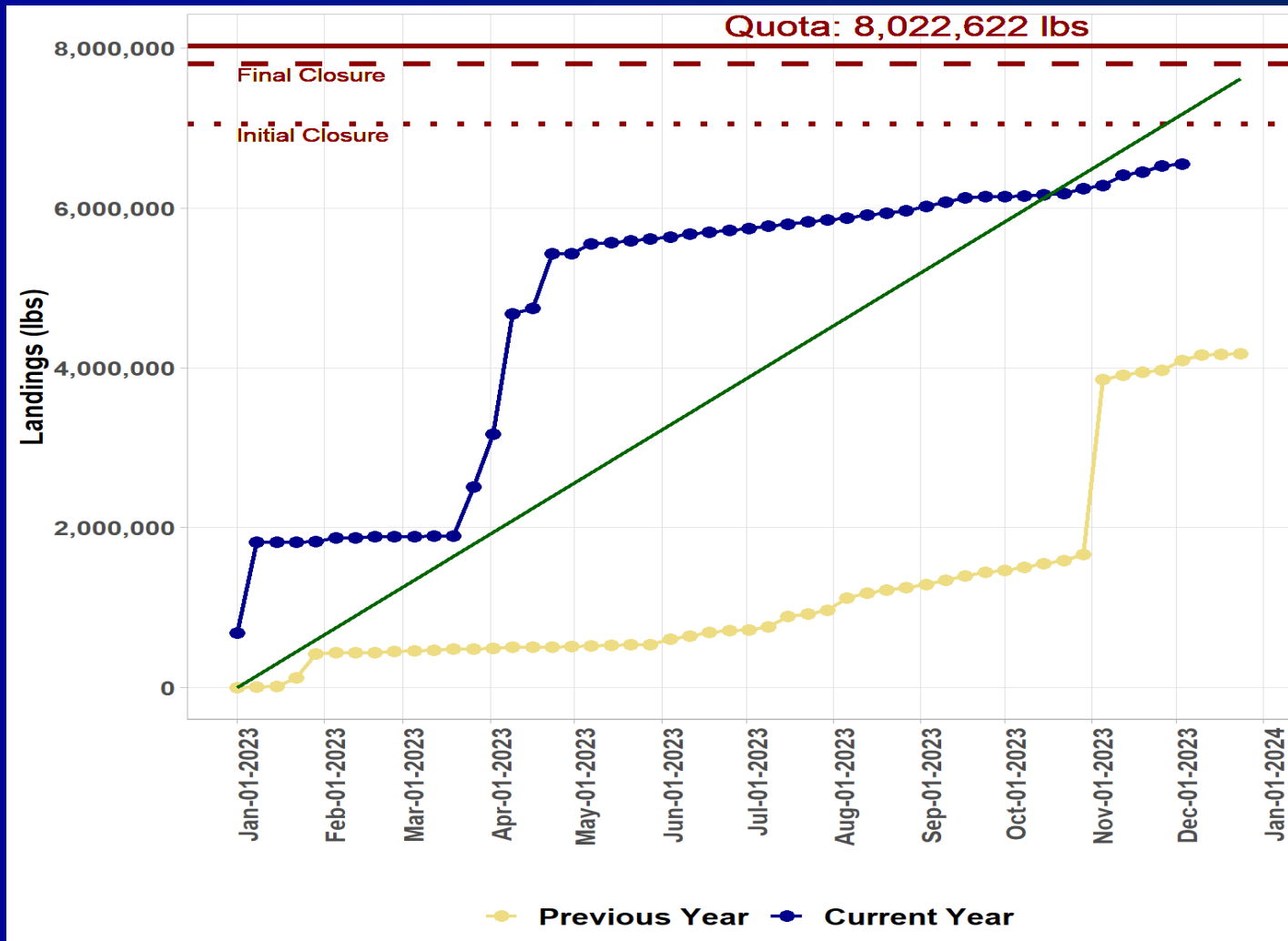
State	Metric_Tons
MA	1,530
ME	302
RI	88
NY	11
Other	17
Total	1,948

Areas of catches 2011-2015

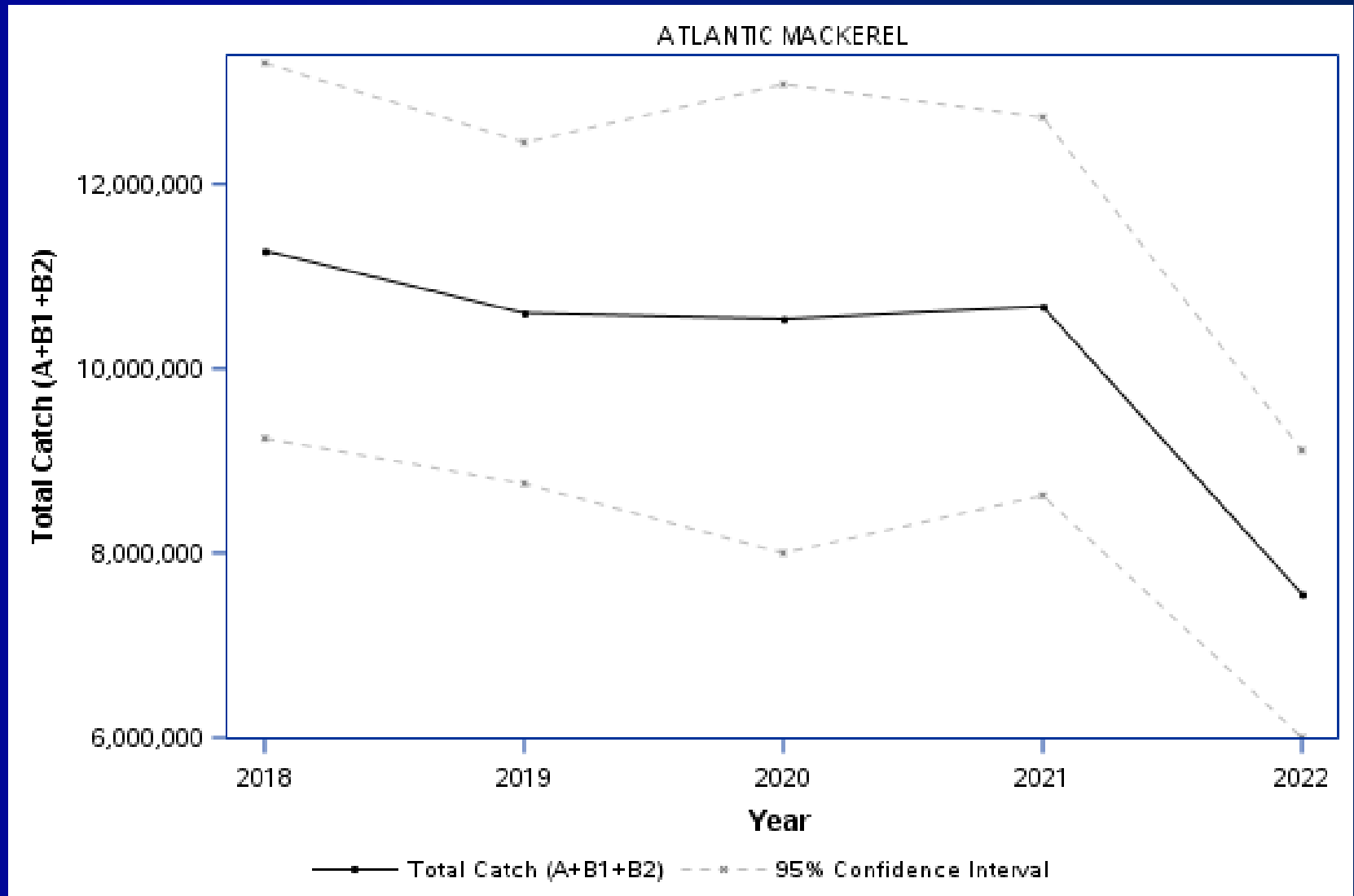
Figure A2: Atlantic mackerel commercial landings from 2011-2015. Landings for all gears other than paired midwater trawl were reported via dealer reports matched to a vessel trip report (VTR). Landings for paired midwater trawl vessels were reported via VTRs. Total Dealer Landings reported (mt): 21,490.5. Dealer Landings from trips with location data (mt): 20,352.0 (94.7% of total).



2023 (blue) / 2022 (orange)



Recreational Catch



AP Fishery Performance Report

- Demand strong
- Scarce in southern areas – no other unusual environmental observations
- Inshore NE buffer and low herring quotas impacted recent (2021/2022) landings
- Lower RH/S quota would have ended 2023 fishery prematurely; observer coverage
- Fishery Performance Report moot given criticism/restrictions on the fishery

Mackerel - FPR

- Canadian alignment / Gear / size limit
- Recreational catch issues
 - 2022 decline after stability since 2018
 - Impact on fishing mortality?
 - Potential shift with state permitting

Canada

- Stock assessment trends like US
- Closed fishery in 2022 and 2023
- Official Canadian correspondence has requested a similar response from US management

SSC Recommendation

Atlantic Mackerel:

The Tortuous and Torturous Path to ABC

- **July**
 - SSC review Level 1 assessment
 - BUT overfishing NOT occurring → Level 2 Assessment required
- **August**
 - SSC reports preliminary findings to Council pending confirmation by external peer review panel
- **September**
 - SSC recommends set of projection scenarios
 - External Level 2 review panel meets
- **October**
 - SSC reports results of September meeting to Council
 - SSC review recommends ABC consistent with most recent assessment and uncertainties of recent projections
- **December**
 - Council decision on 2024-2025 quotas

SSC Recommendation

Atlantic Mackerel: Four Scenarios

- **Overarching consideration:** Rebuild by 2032 with a 60% or greater chance of rebuilding.
- Considered four scenarios with varying methods of adjustment for uncertainty in recent recruitment estimates.
- Selected scenario adjusts the initial stock size by setting the 2022 recruitment to the median of the time series.
- Considered appropriate in view of the overestimation of rebuilding in recent years and low precision of estimated year class strength in the terminal year of the assessment.

SSC Recommendation

Atlantic Mackerel: SSC Recommendations

Projection	2024	2025
Year-specific (mt)	2,726	3,900
Averaged (mt)	3,200	3,200

- “Averaged” projection is consistent with Council’s target rebuild probability of 60.5% but slightly less than average of year specific harvests. $(3,900+2,726)/2 = 3,313 > 3,200$ mt
- Why? Taking additional 474 mt in 2024 requires forgoing 700 mt in 2025.

SSC Recommendation

Atlantic Mackerel: Uncertainties

- Retrospective pattern of overestimating stock biomass and recent recruitment
 - Overestimation of SSB → Catches set too high
 - Overestimation of Recruitment → projections are too optimistic
- What is role of natural mortality vs fishing mortality in depleted status of Atlantic Mackerel?
- Recent updates of Canadian bait and recreational harvests
- Reliance on DFO egg survey. US egg survey is less useful because it does not sample during peak period of spawning
- Changing distribution patterns increase local abundance, extend spawning periods, and alter efficacy of biological surveys.

Monitoring Committee v1

- Deduct 74 MT for Canada
- Maintain deductions for recreational catch and commercial discards (2,143 MT and 115 MT)
- The remainder for commercial landings is...
 - 394 MT for 2024
 - 1,568 MT for 2025.

Monitoring Committee v2

- Deduct 74 MT for Canada
- Maintain deductions for recreational catch and commercial discards (2,143 MT and 115 MT)
- The remainder for commercial landings is...
 - With averaged ABCs...
 - 868 MT for 2024/2025

Monitoring Committee

- With extra quota, still mostly incidental but can increase trip limits:
- initial trip limit of 20,000 pounds for limited access permits; 5,000 pounds open access
 - Until 80%, then...
- 10,000 pounds for limited access permits and 2,500 pounds for open access
- 7% over in 2021, 25% under in 2022
 - 2023 was running in between

?s, Discussion, Motions

- Specifications and Trips Limits
 - Keep previous or use averaged ABC and higher trip limits?
- Staff recommends adopting the new option, an averaged/constant ABC approach
 - 2024/2025 stability

Backup Slides

2020-2025 Research Priorities

ATLANTIC MACKEREL

SHORT-TERM/SMALLER SCALE

- 16. Continue to collect and evaluate mackerel egg data (ECOMON survey).
- 17. Revisit stock structure and spawning components based on recent otolith microchemistry and/or genetic data.

LONG-TERM/LARGER SCALE

- 18. Evaluation of time and age-variant natural mortality and predation mortality for this stock
- 19. Evaluate data quality and assessment sensitivities for U.S. recreational data, and unmonitored Canadian data.
- 20. Develop methods for using acoustics to determine Atlantic mackerel abundance and/or catchability.
- 21. Initiate a reproductive study in the U.S. to obtain fecundity estimates and spawning seasonality. Update Canadian fecundity estimates (which are currently based on a 1986 publication) and compare estimates between countries.
- 22. Obtain biological samples from all components of the fishery and covering both spawning contingents.
- 23. Continue to pursue modeling approaches that explicitly account for the spatial structure of the stock (i.e. two spawning contingents).
- 24. Investigate possible growth and maturity differences between spawning contingents.
- 25. Explore potential changes in environmental conditions (habitat changes, larval diets, cannibalism, etc.) that impact larval survival and recruitment.