



# ***SSC - Mackerel***

*July 2021*

# Mackerel

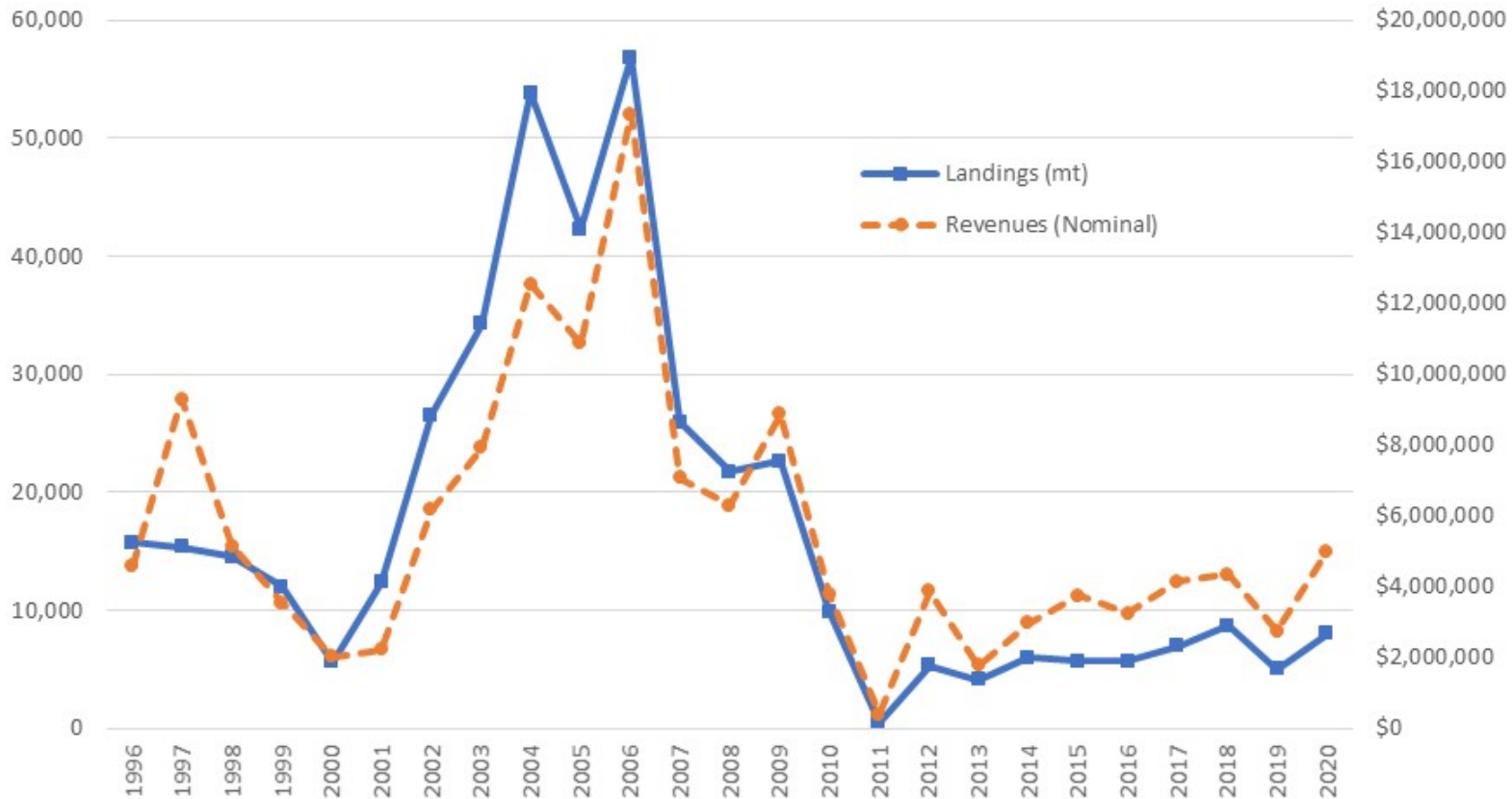
- Mackerel began a rebuilding program on November 29, 2019, which was designed to rebuild the stock by 2023.
- Compared to the previous assessment, the Spawning Stock Biomass (SSB) in 2016 (the terminal year from that previous assessment), was revised downward by 29% in the new 2021 Management Track Assessment (MTA).
- SSB is estimated to have increased 180% from 2014 (the time series minimum) to 2019.

# Mackerel

- In the new MTA, the estimated proxy for Maximum Sustainable Yield declined by 17% (to 34,103 metric tons (MT) annually) compared to the previous assessment.
- The fishery was not constrained by the river herring and shad (RH/S) cap in 2020, and ended the year at about 46% of the commercial quota.
- 2019 and 2020 catches were below even the most conservative rebuilding option (with the lowest 2019-2020 catch limits), so regardless of which rebuilding plan the Council had selected, the current findings would have persisted.

# From Fishery Info Doc

Mackerel Landings (MT, left and solid blue line) and Ex-Vessel Revenues (nominal dollars, right and dashed orange line) 1996-2020

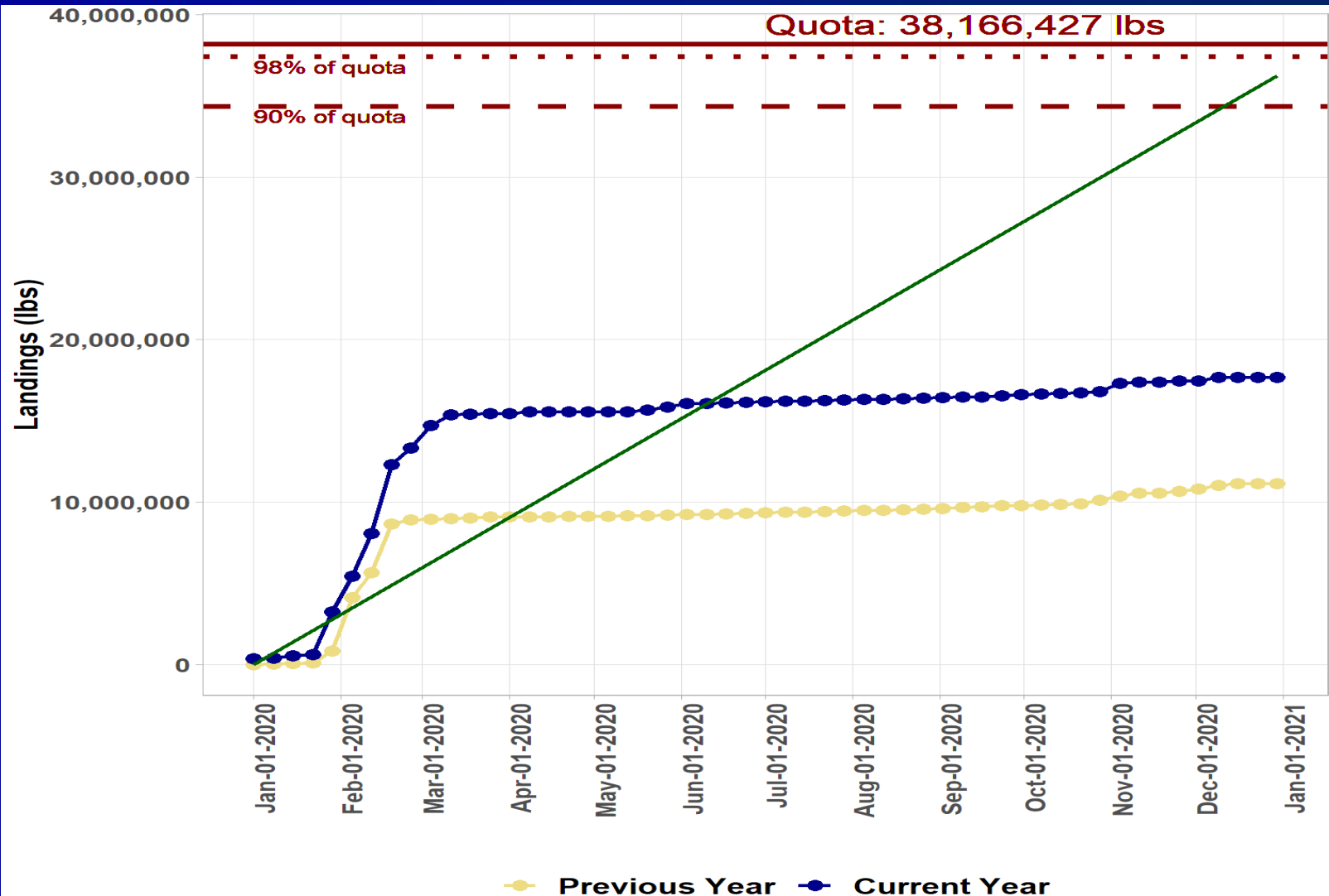


# From Fishery Info Doc

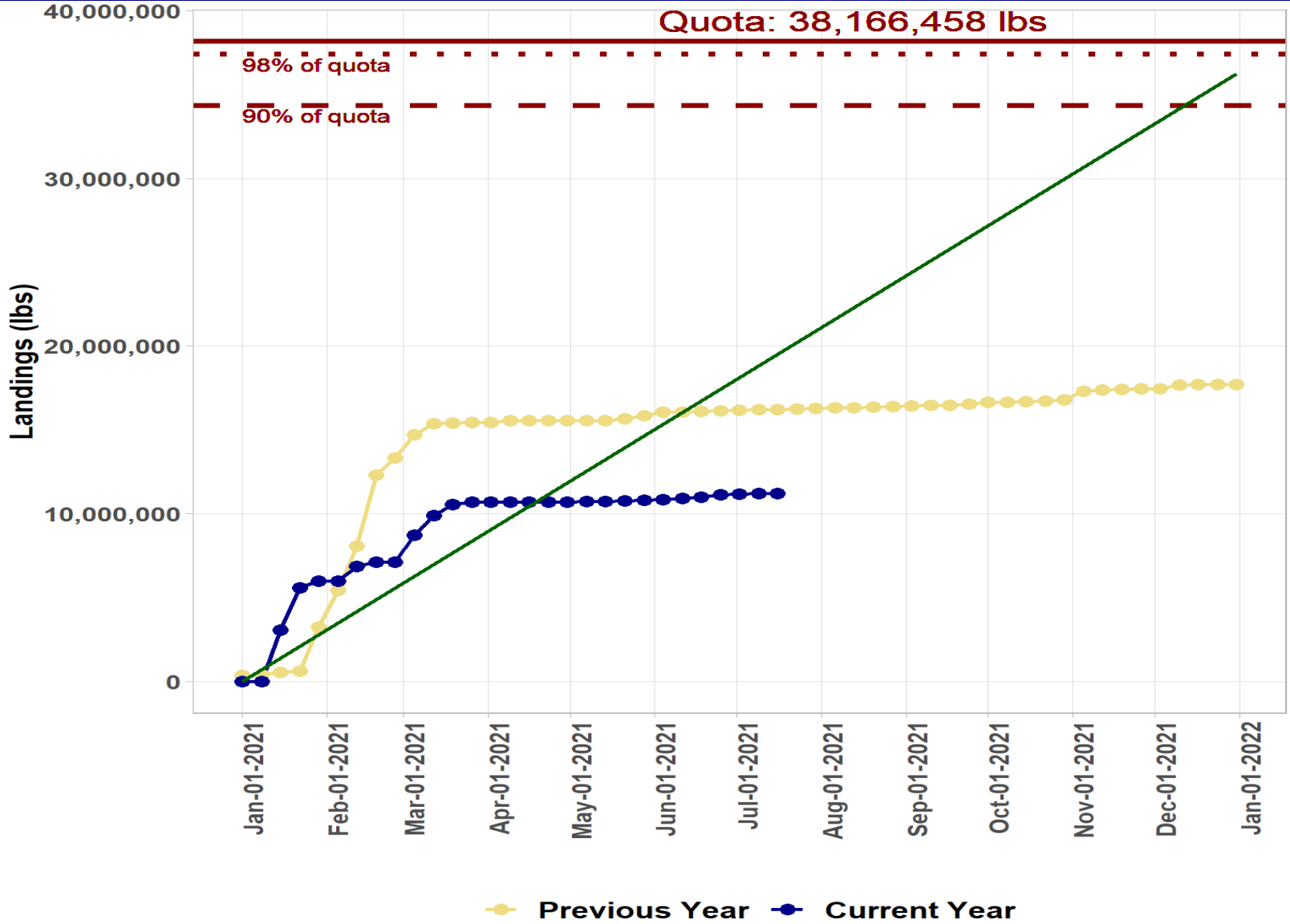
Mackerel Inflation-Adjusted Price \$/MT



# From Fishery Info Doc



# Current year (29%)



# Fishery Performance Report

- Thermal/regime shifting
- Covid data gaps, fresh market impacts
- Trade issues – tariffs/container costs
- Herring RSA issue, New England's 12-mile line
- Mixed input on rebuilding approaches
- Lack of ability to control recreational catch



# Staff Perspective

- Since likely substantially overfishing in 2021 at quota, warrants *considering* potential emergency action for 2021/early 2022.
- Roll into new rebuilding plan ASAP – consider full and more recent lower recruitment. Consider full range of timelines
- P\*s are likely to be very low...

# Staff Perspective

- Rebuilding plan can begin again, generally needs at least 50% chance of rebuilding to target (~181,000 MT with updated [1975+ recruitment] reference points) in 10 years.
- Emergency action would need to (and apparently could) *reduce* overfishing.

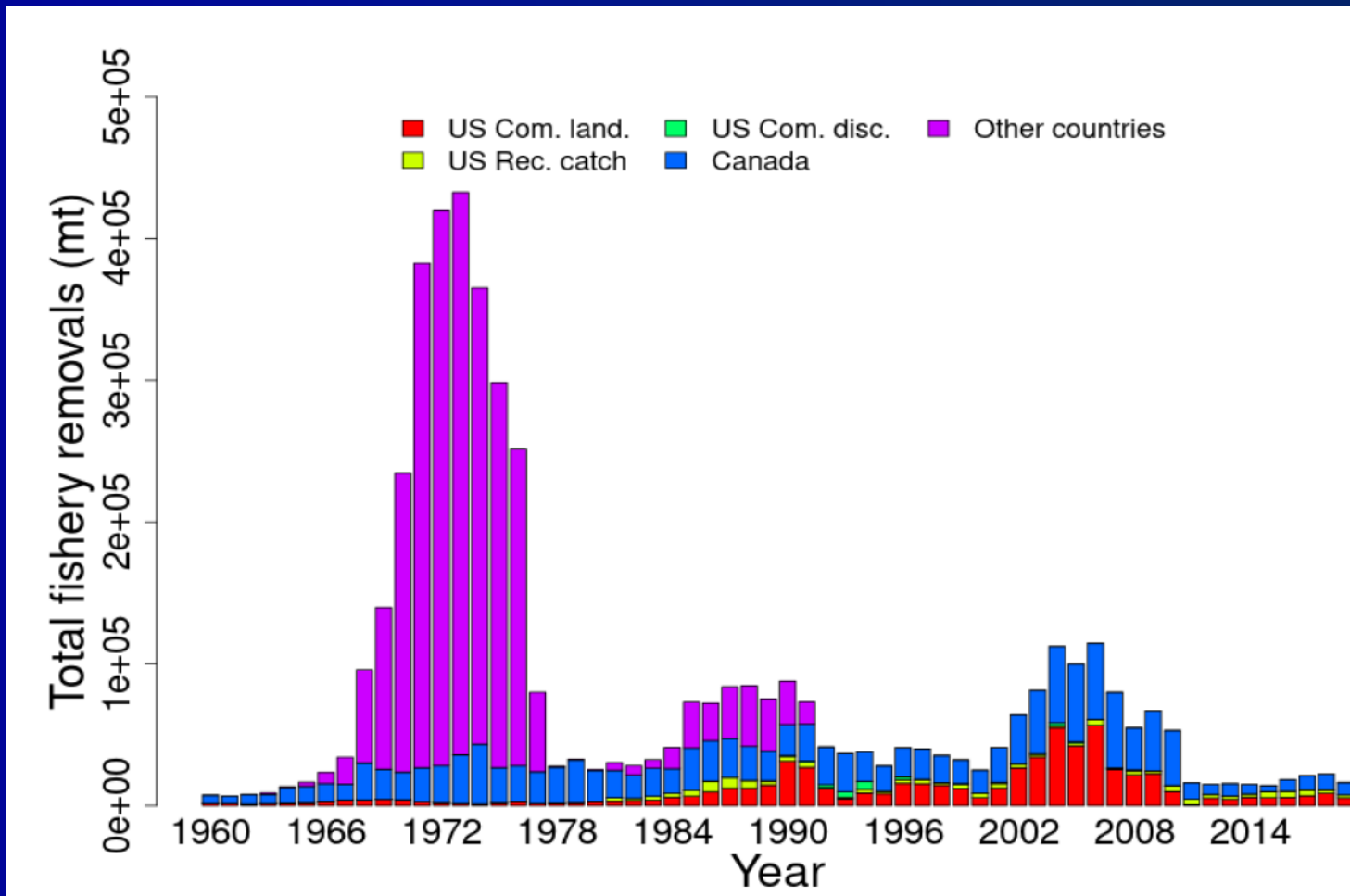
# Staff Perspective

- Grey area in terms of risk policy – diverged already for rebuilding plan, but rebuilding plan not tenable
- Can never “rebuild” with anticipated yields unless get “typical recruitment”
- The lowest catch in the time series occurred in 2015: 14,185 MT
  - Likely to facilitate stock increases during rebuilding discussions.
  - 4/5 recent years R above lower R median

# Staff Perspective

- Consider 14,185 MT as emergency action fishing level recommendation
- Thoughts on rebuilding?
- SSC (July) → Council (Aug) → SSC (Sept) → Council (Oct)

# Catches



(from MTA)

# Mackerel Short Term Projections

Table 3: Short-term projections of total fishery catch and spawning stock biomass for northwest Atlantic mackerel based on a harvest scenario of fishing at  $F_{MSY}$  proxy between 2022 and 2023. The primary U.S. commercial mackerel fishery in 2020 occurred before the COVID pandemic began and discards represent a small proportion of total catch; therefore, the preliminary 2020 total catch estimate of 18,038 (mt) was used in projections.. Catch in 2021 is assumed as the sum of the U.S. ABC and the Candian quota (23,184 (mt)).

Year	Catch (mt)	SSB (mt)	F
2020	18038	62039 (27791 - 120790)	0.366
2021	23184	70137 (29523 - 140000)	0.412
2022	14881	84382 (38079 - 188330)	0.22
2023	18596	103970 (52807 - 261522)	0.22

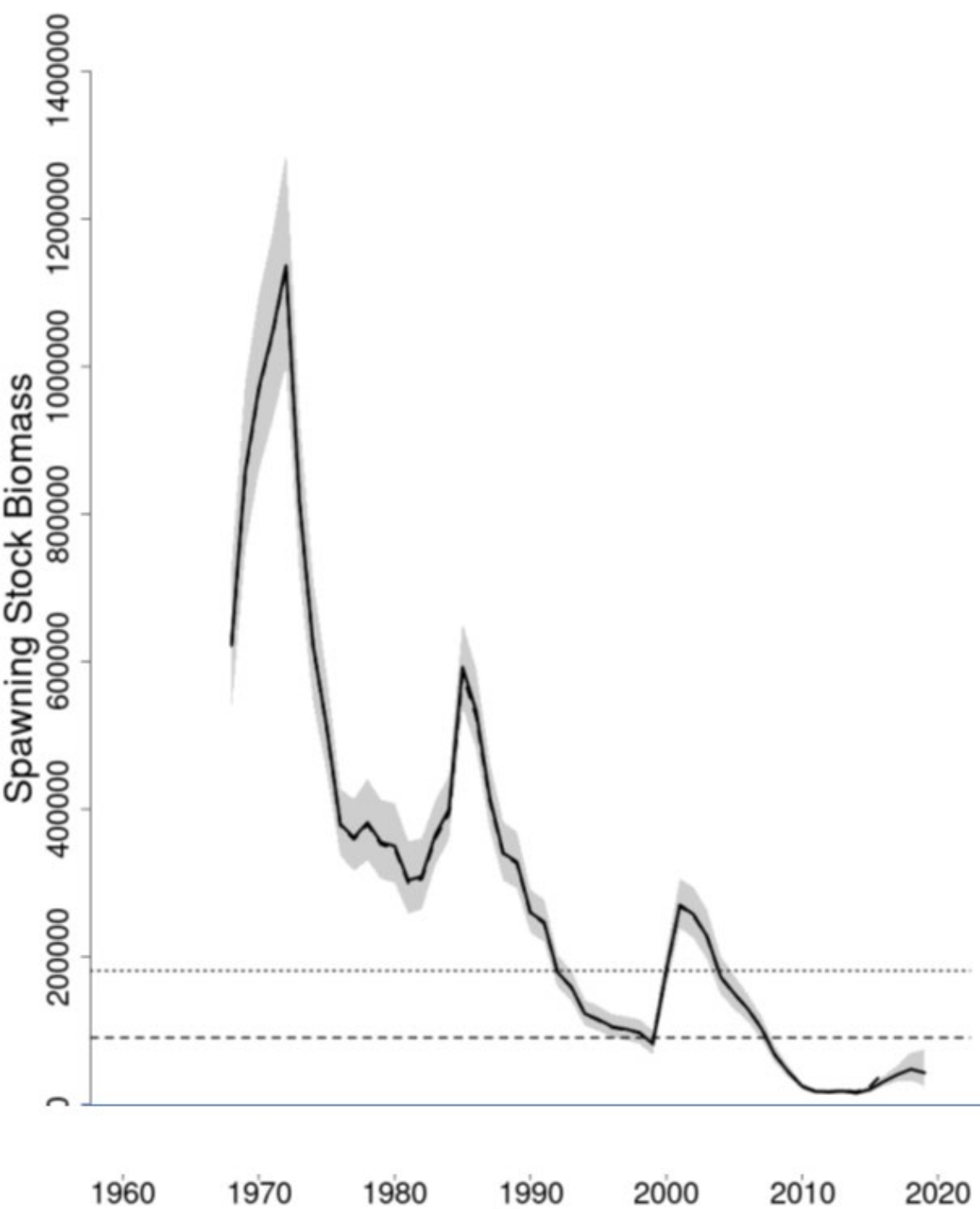
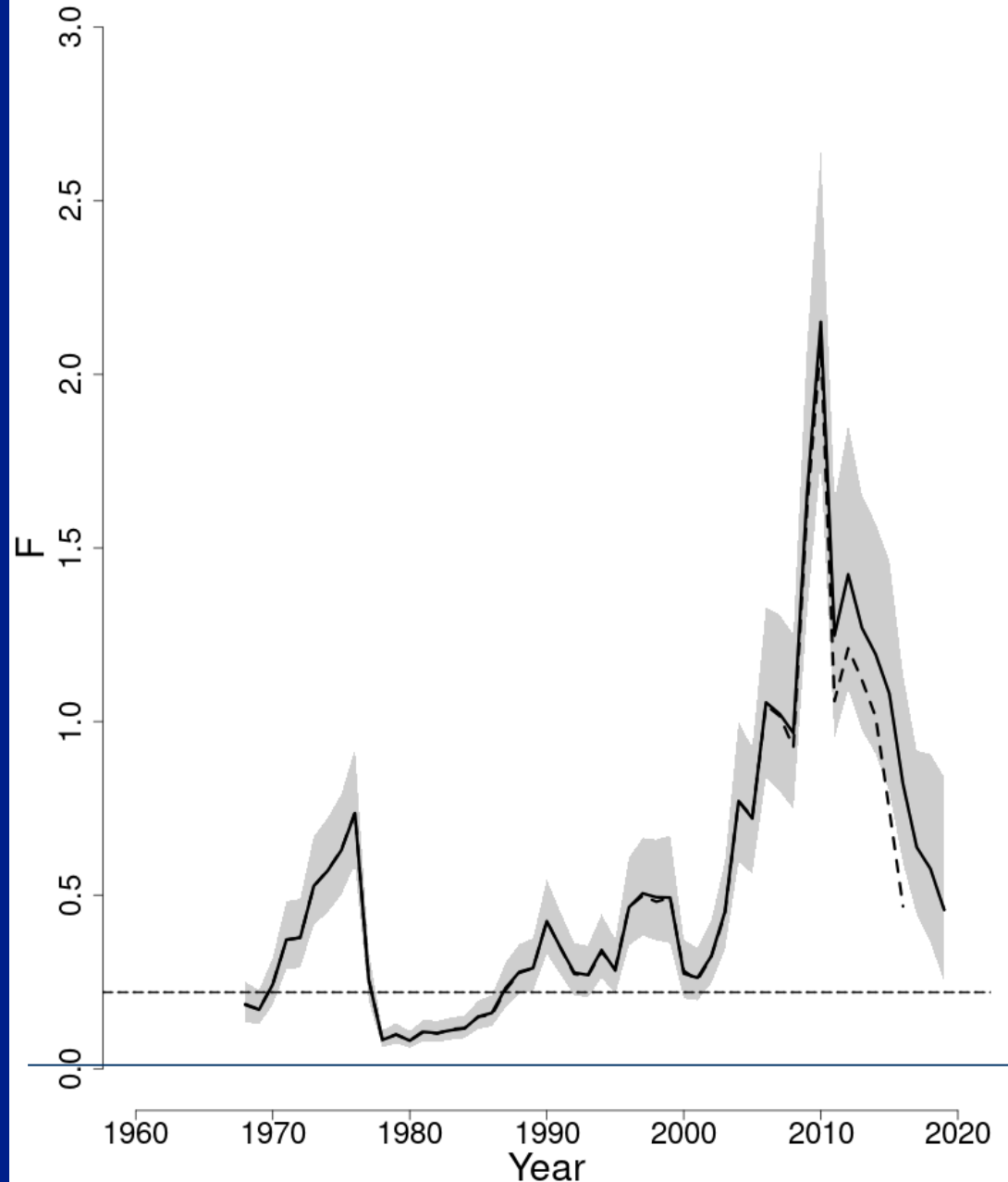


Figure 1: Trends in spawning stock biomass (mt) of northwest Atlantic mackerel between 1968 and 2019; SSBThreshold (1/2 SSBMSY proxy; horizontal dashed line) as well as SSBTarget (SSBMSY proxy; horizontal dotted line) based on the 2021 assessment + approximate 90% lognormal confidence intervals

# Mackerel

Figure 2: Trends in  $F$  current (solid line) and previous (dashed line) assessment and the corresponding  $F_{\text{Threshold}}$  ( $F_{\text{MSY proxy}}=0.22$ ; horizontal dashed line). + approximate 90% lognormal confidence intervals





# Mackerel

Figure 2: Trends in Recruits (age-1) (000s)

