



Butterfish
Specifications
2023-2024

Aug 2022

Overview

- Stock status
- Current primary measures
- Fishery Performance/AP Report
- SSC Recommendation
- Monitoring Committee

Outcome: 2023/2024 Specifications

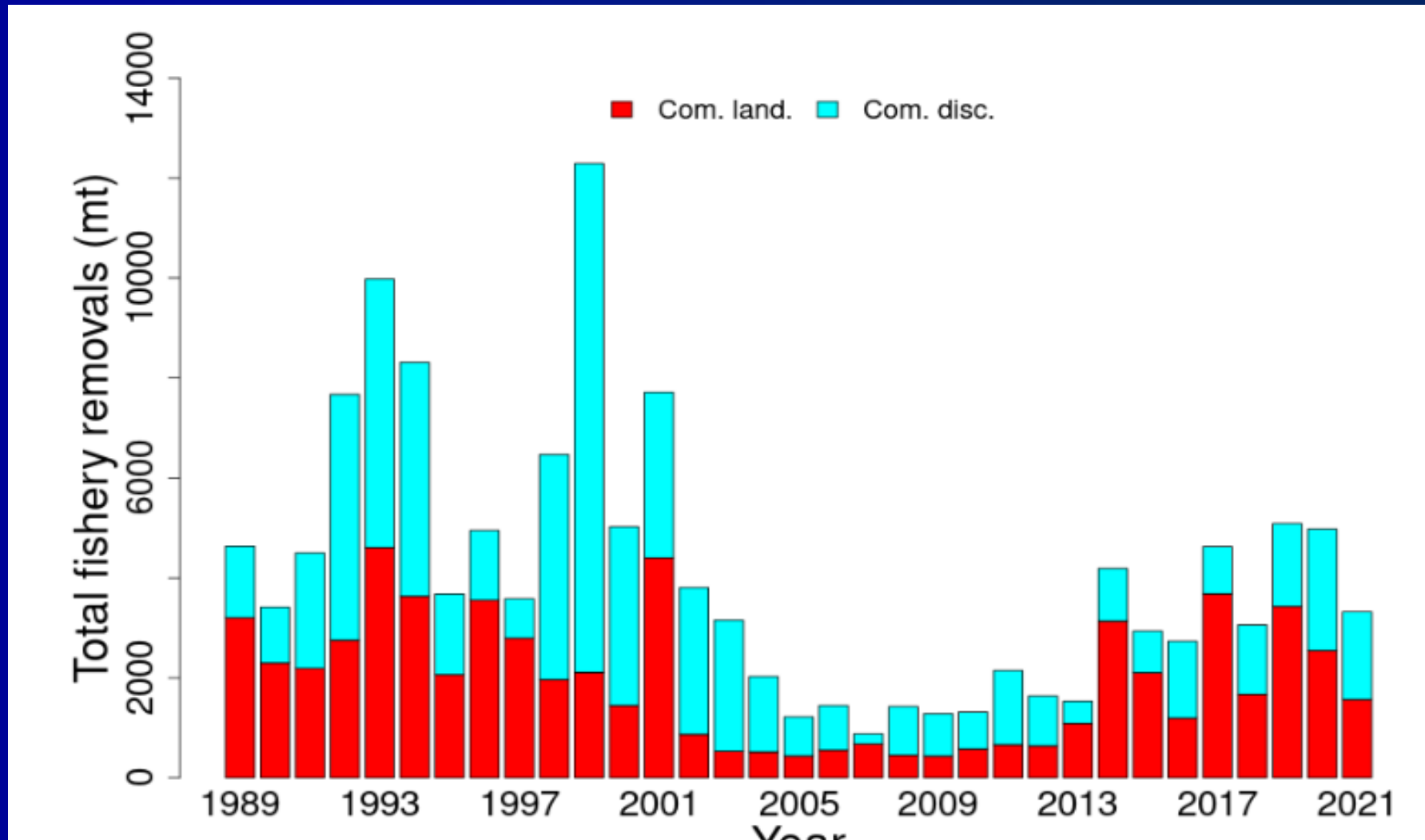
Stock status

- Research Track Assessment
 - Management track assessment
 - Industry perspectives working paper
- “not overfished or experiencing overfishing...likely to be robust to the major sources of uncertainty”
- Uncertain what *would* cause overfishing

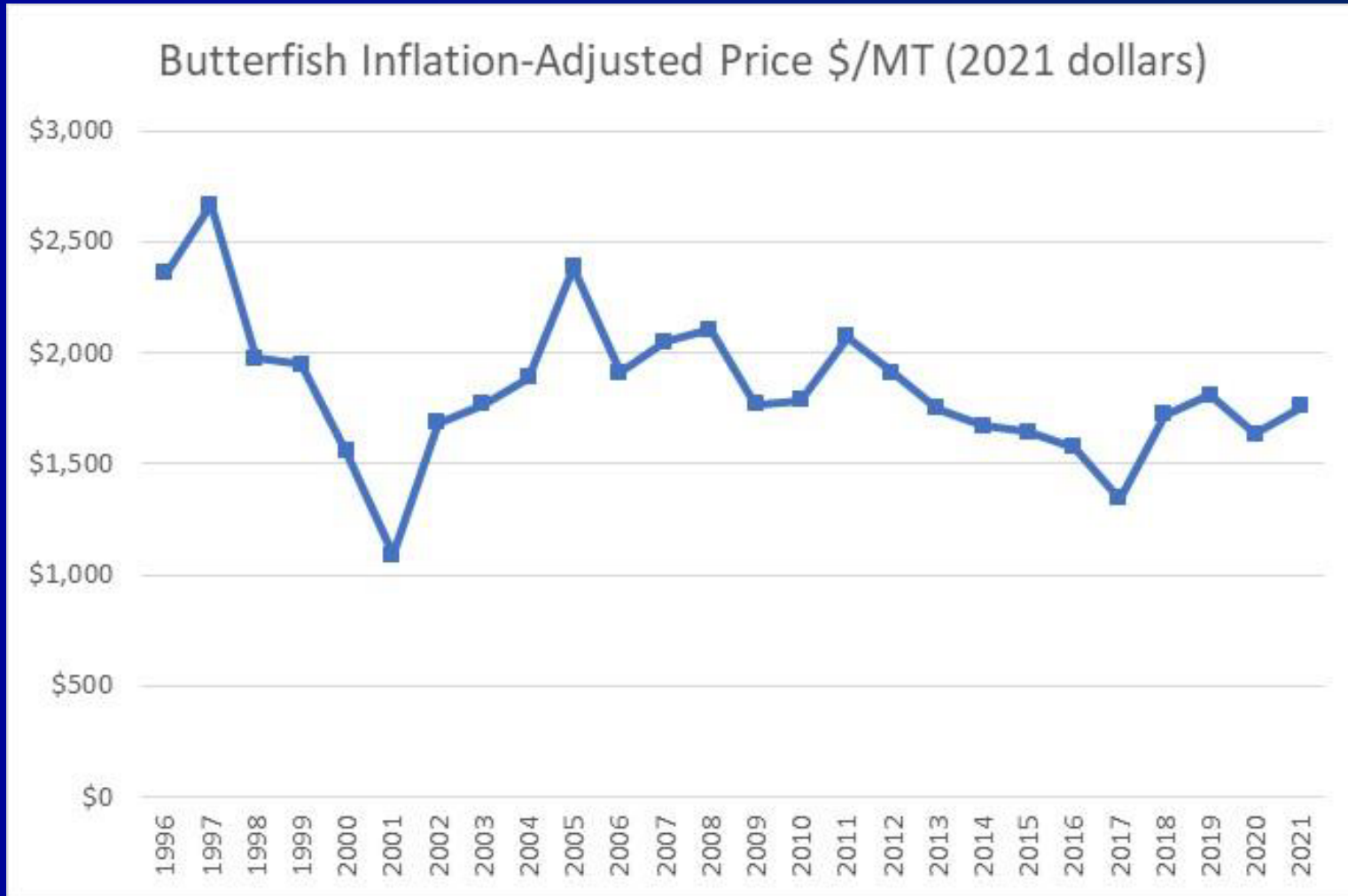
Current primary measures

- Limited access
- 3-inch mesh if more than 5,000 pounds
- Substantial discard set-aside (cap and other)
- Slowdown if within 1,000 MT of quota
 - 5,000 pounds
- 2022 ABC = 17,854 MT
- 2022 Quota = 11,495 MT

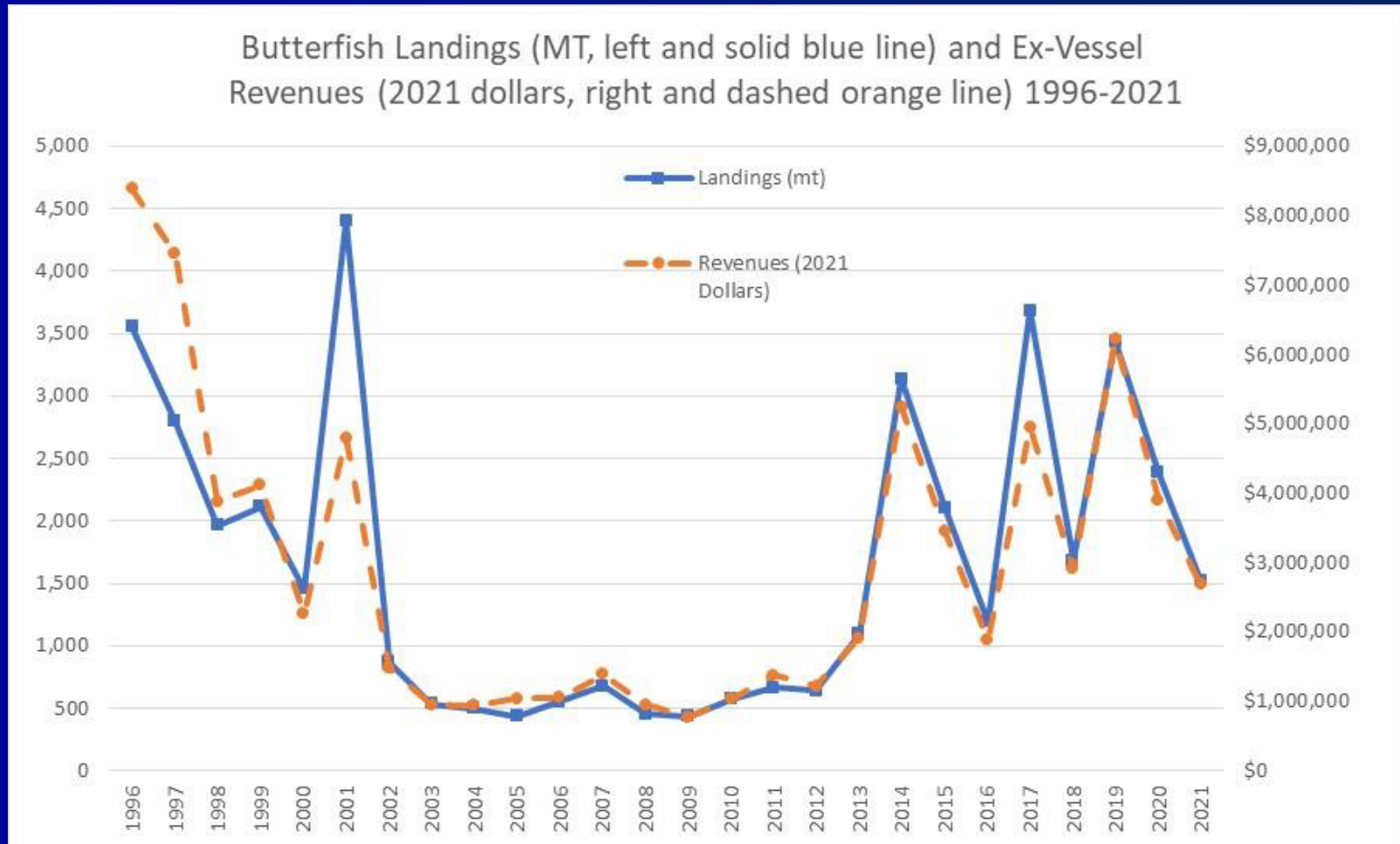
Fishery Performance/AP Report



Fishery Performance/AP Report



Fishery Performance/AP Report



Fishery Performance/ AP Report

- Other species more lucrative
- Covid issues persist re: shipping
- High fuel prices and good longfin fishing depressing interest for butterfish in 2022
- Concern about biomass precision and past negative effects on longfin
- Concern about overall prey availability and 2/3 M reference point.

SSC Recommendation

Butterfish Specifications 2023: TOR #1-3

- The SSC reviewed the results of the RTA and received a Level 1 MTA (direct delivery) of the updated assessment through 2021.
- **The SSC recommended the use of a $F=2/3M$ biological reference point and catch limits of 17,267 mt for 2023 and 15,764 mt for 2024.**
- Basis:
 - Set OFL CV at 100%. See Attachment 4 in SSC Report
 - Set $P^*=0.49$
 - No change in estimate of natural mortality ($M=1.3/\text{yr}$)
 - New state space model known as the Woods Hole Assessment Model (WHAM).

SSC Recommendation

Butterfish TOR#4: Sources of Uncertainty

- Choice of reference points, especially $F_{50\%}$, since the value was estimated to be > 6.0 in the research track assessment, and 5.6 in the management track assessment. Biomass at $F_{40\%MSP}$ is lower than any estimate in 40⁺-year time series.
- Scale of the population. A q of 0.2 for the Fall Albatross survey was needed to reasonably scale the population. However, a q of 0.2 implies that up to 80% of the stock is not within the survey area, which is potentially problematic given that Butterfish are frequently captured throughout the survey area.
- Uncertainty in discard estimates, particularly early in the time-series
- Gap-filling procedures potentially blending cohorts and potentially leading to bias in the age composition data.
- Estimated consumption removals account for only a small fraction of estimated M . Results seem inconsistent with Butterfish being considered a forage species.

SSC Recommendation

Butterfish TOR #5: Ecosystem Considerations

- Changes in Butterfish condition were related to ecosystem indices and used to determine the appropriate stanza for recruitment projection starting in 2011.
- Considerable work estimating consumption of Butterfish by fishes, marine mammals, and seabird predators was completed. Unfortunately, this did not further resolve the Butterfish natural mortality estimate.

SSC Recommendation

Butterfish TOR #6: Research Recommendations

- Research into survey catchability is a high priority.
- Examine shorter (sub-annual) model time steps.
- Evaluate maturity methods, impact on maturity ogive, and estimated reference points.
- Consider alternative ways to calculate discards.
- Evaluate adequacy of port sampling to support continued assessments (is full age structure sampled?).
- What is eating butterfish? Illex? Consider additional methods to estimate predation mortality.
- Evaluate methods for developing age length keys to avoid pooling.

SSC Recommendation

- Stay with 2/3 natural mortality = fishing mortality target
- Use 100% coefficient of variation (CV) for uncertainty when calculating risk policy deduction.
 - Minimal due to stock size. 51% chance not overfishing.
 - 2023/2024 ABCs = 17,267 MT / 15,764 MT
 - Same as staff recommendation

Monitoring Committee

■ Minor Changes

	Specification	2023	2024	Rationale Summary
	OFL	17,631	16,096	from projections
a	ABC	17,267	15,764	from SSC, scientific uncertainty
b	ACT Buffer %	5%	5%	for management uncertainty
c	ACT Buffer	863	788	a times b
d	ACT (a-c)	16,404	14,976	a-c
e	Butterfish Cap (longfin discards)	3,884	3,884	set by Council
f	Assumed other discards	1,248	1,248	2013-2021 average plus 1 SD
g	Total discard set-aside	5,132	5,132	e+f
h	Landings or "Domestic Annual Harvest" (DAH)	11,271	9,844	d-g
i	Close primary directed at this amount, i.e. with 1,000 mt left; go to 5,000 pound trip limit	10,271	8,844	h-1000