



THE SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

# **MSY Considerations Based on Social and Economic Inputs**

**Social and Economic Panel  
October 2024**

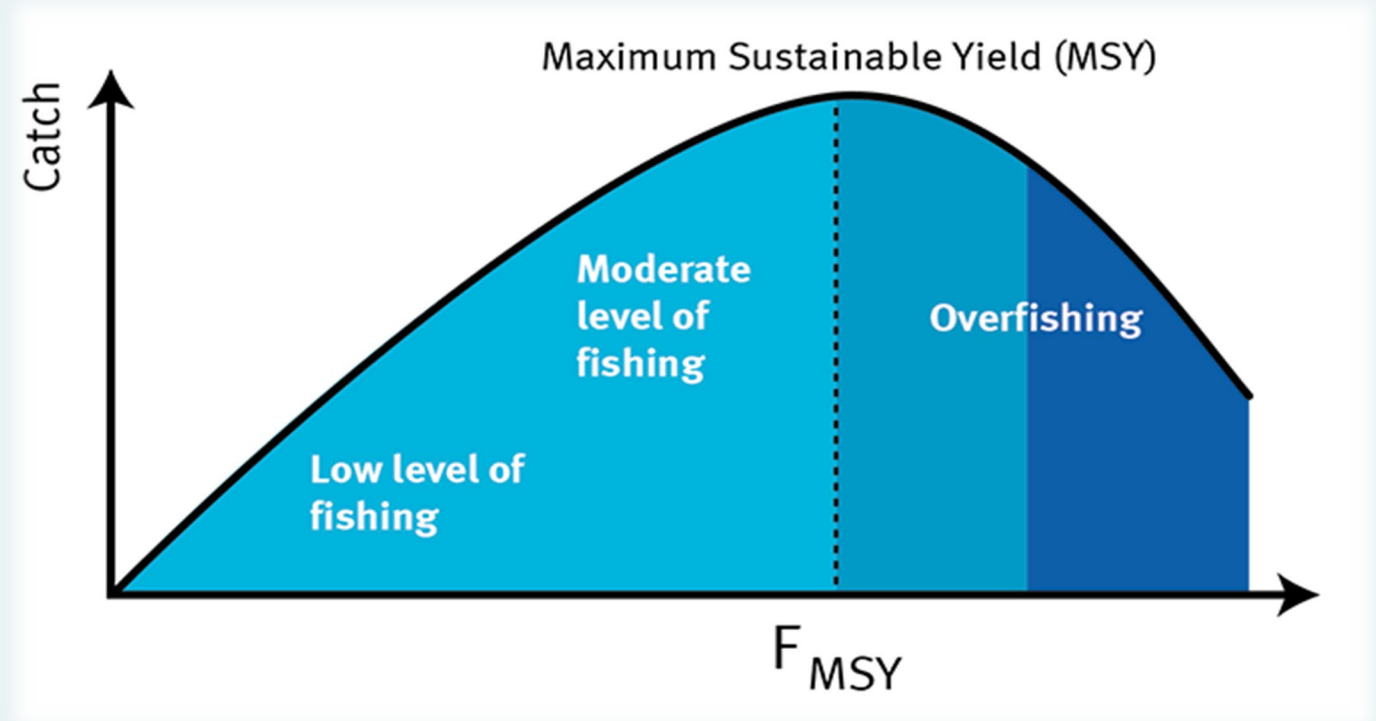
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SAFMC Staff**

# Maximum Sustainable Yield

Theoretical value that produces the highest yield in the fishery.

- Effort
  - Level of effort (F) predicts catch
  - Too much effort leads to overfishing
- Biomass
  - Level of biomass (SSB) predicts amount of catch that can be harvested.
  - Too few adults (SSB) leads to an overfished population

Management is required to prevent overfishing and rebuild overfished stocks

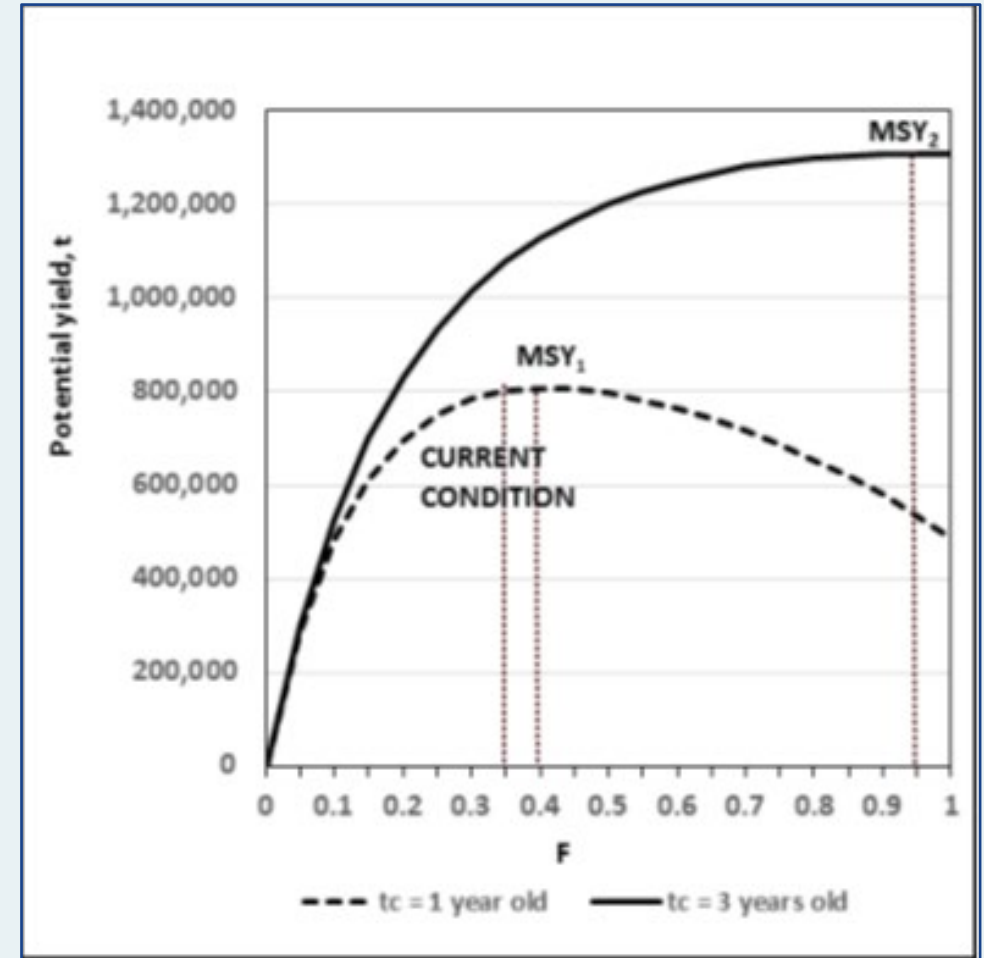


Credit: Marine Stewardship Council

<https://www.msc.org/media-centre/news-opinion/news/2020/02/25/what-does-sustainable-fishing-really-mean>

# Maximum Sustainable Yield can vary!

- Factors that can affect MSY:
  - Growth
  - Natural Mortality
  - Maturity
  - **Selectivity**
  - Biological and Environmental Conditions



Credit: Chavez 2020

# Selectivity

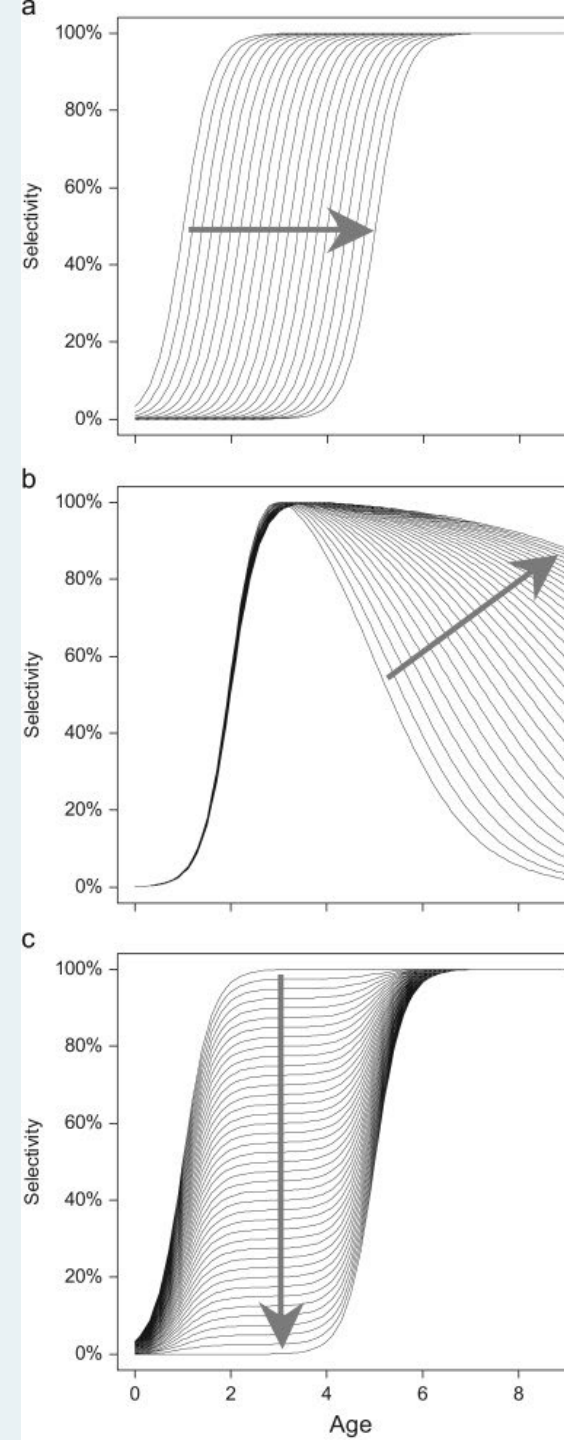
## Contact Selectivity

- If a fish encounters gear, what is the probability it is caught?

## Population

- Probability that fish of given age or size will encounter the gear and be caught.

Examples of population selectivity (right) from Scott and Sampson 2011.



Flat-Topped



Changing size limits

Dome

Older fish in deeper water

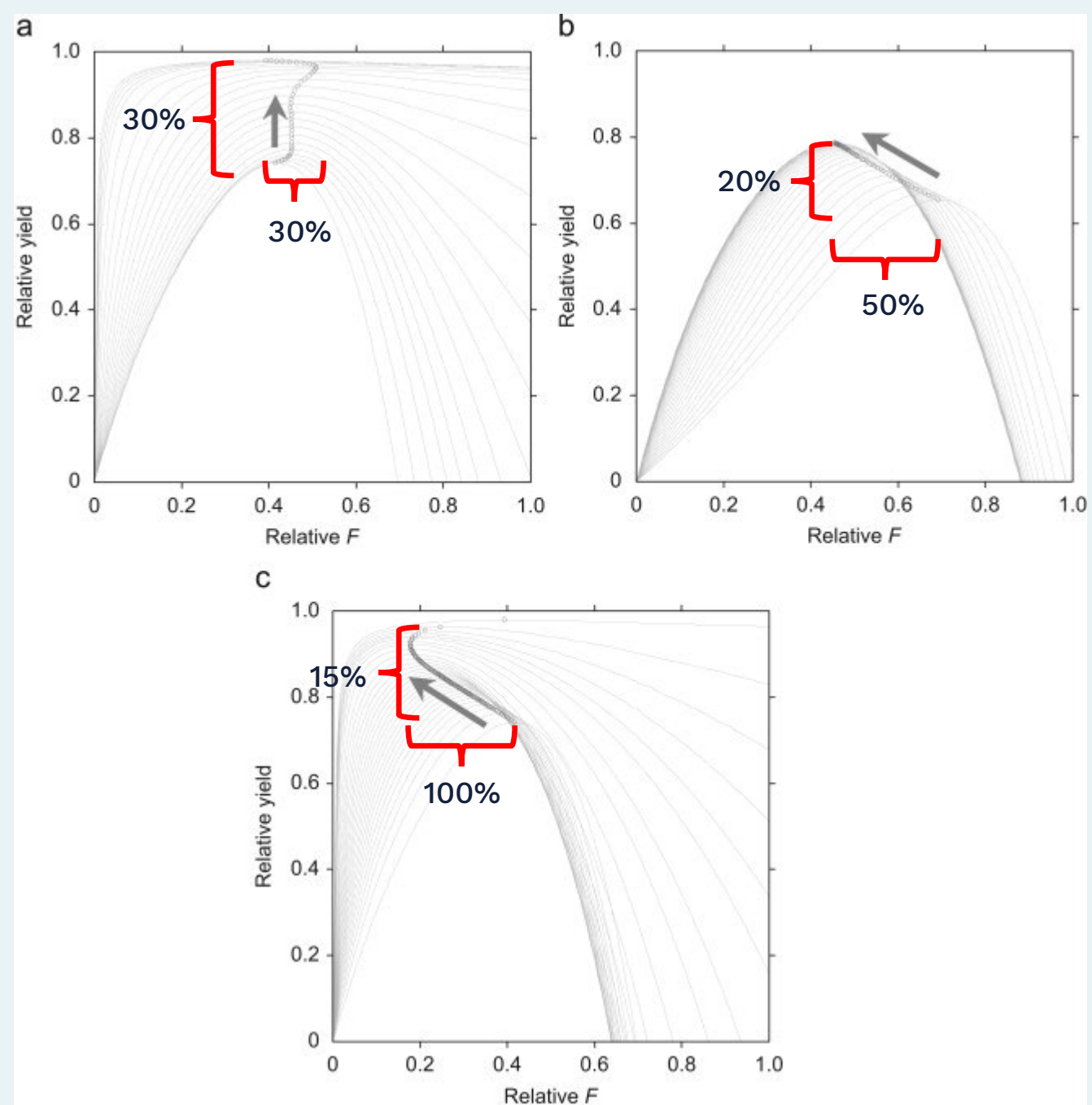
Two fleets combined

Protecting year classes

Scott and Sampson 2011

# Changes in MSY

- Not always a linear response
- Relative yield varies as relative  $F_{MSY}$  is changed
- Responses will vary based species, area, and fishery
- Fishermen may be willing to sacrifice some yield for higher effort.





# Available Information on Fishermen Preferences



- Attitudes and preferences of saltwater recreational anglers (Brinson and Wallmo 2013)
- Black Sea Bass bag limit analysis (presented to SSC in April 2016).
- Trip Satisfaction in South Carolina For-Hire Industry: A Black Sea Bass Case Study (presented to Council in June 2018).
- Exploring approaches for innovative management of the private recreational sector of the South Atlantic Snapper Grouper Fishery (presented to Council in March 2019).
- Fishermen preferences identified in previous public comments, fishery performance reports, and general discussion of Black Sea Bass by the Snapper Grouper AP.



# Questions for the SEP

- How might staff combine results from multiple surveys and sources covering similar material? (i.e. provide simplified or summarized information that still acknowledges differences that may result from varied collection methodologies).
  - Different survey methods and,
  - Different scope of survey and approaches to gathering information.
- What is the most compelling way to present information, specifically to the Council and SSC, on fishermen preferences that could impact selectivity?
  - What social or economic factors might influence fishing behavior/preferences that could change selectivity?
- Any additional reports or datasets that could inform preferences for Black Sea Bass, specifically, or Snapper Grouper species, generally?



# References

- American Sportfishing Association. 2019. Exploring Approaches for innovative management of the private recreational sector of the South Atlantic Snapper Grouper Fishery. Presented to Council March 2019.
- Brinson and Wallmo. 2013. Attitudes and preferences of saltwater recreational anglers.
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- Scott, RD. and DB. Sampson. 2011. The sensitivity of long-term yield targets to changes in fishery age-selectivity. *Marine Policy* 35: 79-84
- Weinstock, S. 2018. Trip Satisfaction in South Carolina For-Hire Industry: A Black Sea Bass Case Study. Presented to Council June 2018. Part of Master Thesis College of Charleston.