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Black Sea Bass Projections

Council Request 2024

Projections Request

- Changing size limits.
  - Develop new OFL and ABC projections with changes in minimum size limits of L50, of 11, 12, and 13 inches (both sectors being equal). The regulations would be implemented in 2025.
  - Maximum size limit where 50% or 100% of population is predicted to be male.
- Develop scenarios where the discard F is reallocated to landings F. See SEDAR73 Red Snapper Forecasts: New Methodology and Additional July Scenarios 16, 2021. In particular, scenarios 6, 8, 14 and 16 with recruitment based on long-term mean or short-term (2014 to 2019) recruitment and potentially change level of discards due to wave 1 and 2 being closed to match shallow water grouper closure.

Projection Specifics

- Discards separated from landings in projections
- Discards from weighted selectivity multiplied by recent F
- Landings determined from weighted selectivity and rebuilding F
- 2 assumptions of recruitment: Recent average or Long-term average

Needed for projections

- Landings selectivity for each size limit
- Discard selectivity for each size limit
- Weighting of landings selectivity to discard selectivity
- Discard fishing mortality assumption (Recent F)
  - Potentially the F associated selectivity weighting time period
- Landings fishing mortality assumption (Tuned to 70% rebuilding)

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Landing Selectivity by size limit

- 11” Minimum
  - Weighted average by geometric mean of F from the commercial pot and commercial handline from 2013-2021
- 12” Minimum
  - Weighted average by geometric mean of F from the recreational and headboat from 2007-2012
- 13” Minimum
  - Weighted average by geometric mean of F from the recreational and headboat from 2013-2021

Discard Selectivity by size limit

- 11” Minimum
  - Combined commercial discard selectivity from 2014-2021
- 12” Minimum
  - Recreational and headboat mirrored selectivity 2007-2012
- 13” Minimum
  - Recreational and headboat mirrored selectivity 2013-2021

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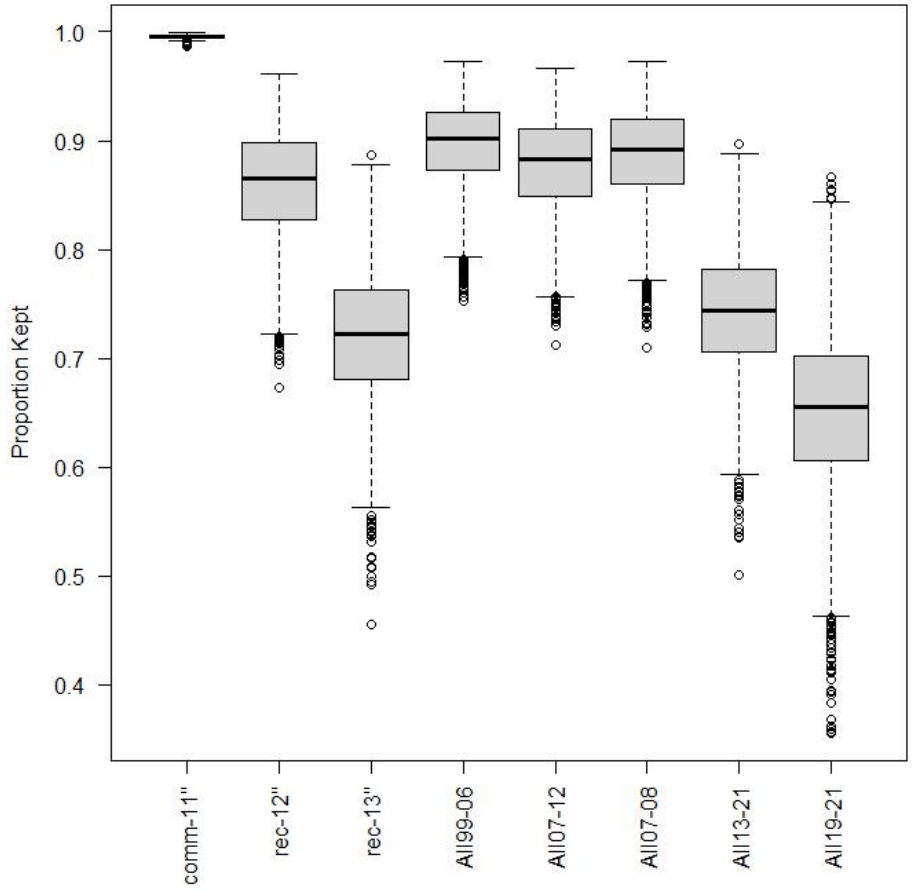
Weighting of discard and landings selectivity

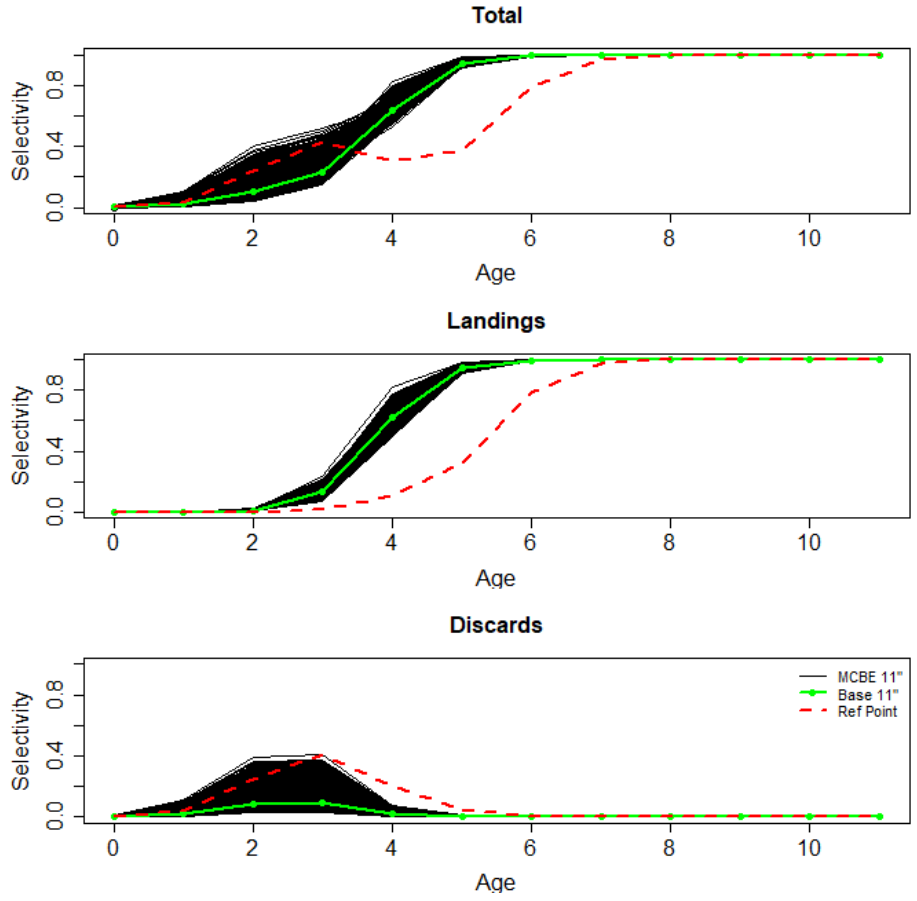
- Original idea was to use ratio of F of landings to discards to compute weighting
- For recreational landings 12” and 13” minimum size limits the proportions seemed reasonable
- Ratio for commercial fisheries was unreasonably high for 11” minimum size limit
- Depends on time period chosen



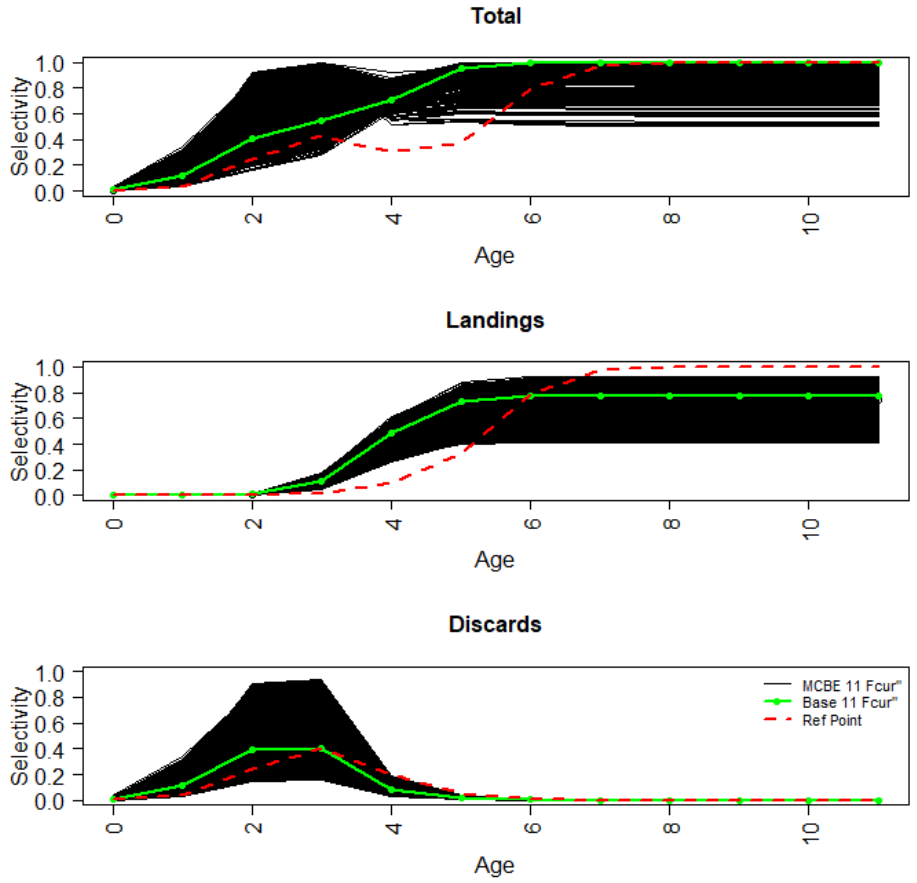
Weighting discard and landings selectivity Options by minimum size limit

- 11” Minimum Size Limit
  - Proportion of all landings F to total F for 2007-2008 (due to season closures)
  - Last 3 years proportion of all landings F to total F
- 12” Minimum Size Limit
  - Proportion of recreational landings F to total recreational F for 2007-2012
  - Last 3 years proportion of landings F to discard F
- 13” Minimum Size Limit
  - Proportion of recreational landings F to total recreational F for 2013-2021
  - Last 3 years proportion of landings F to discard F

11” 2007-2008



2019-2021



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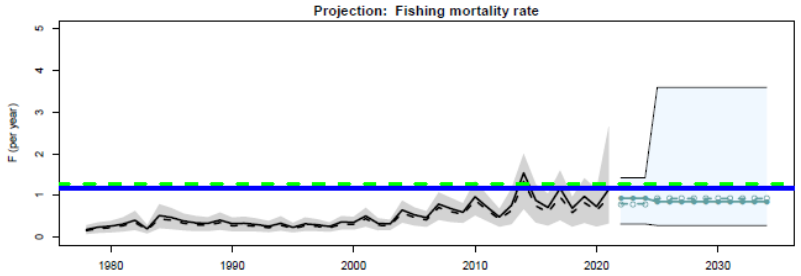
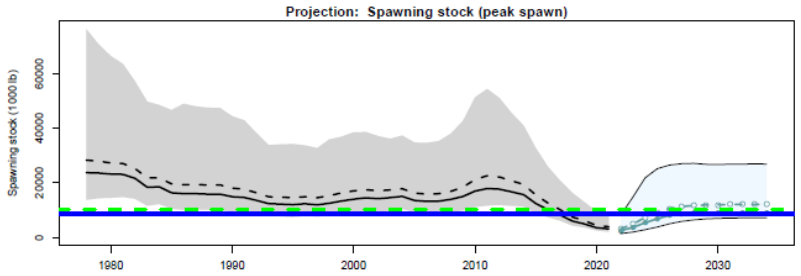
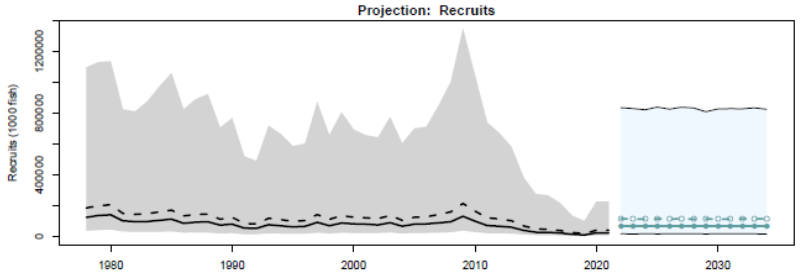
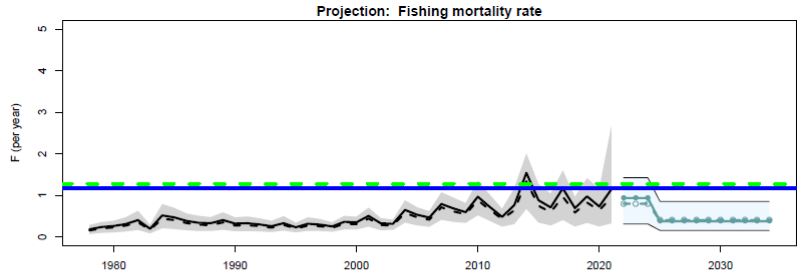
11” 2007-08 $F_{40\%}$*0.72

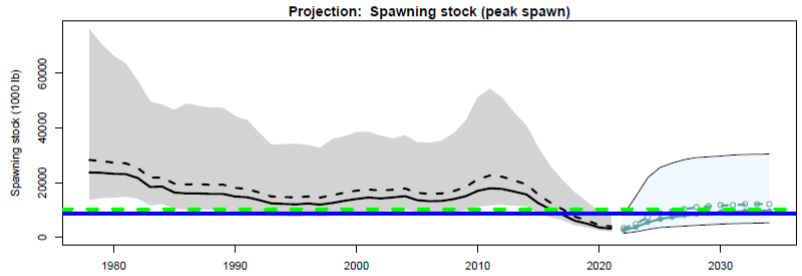


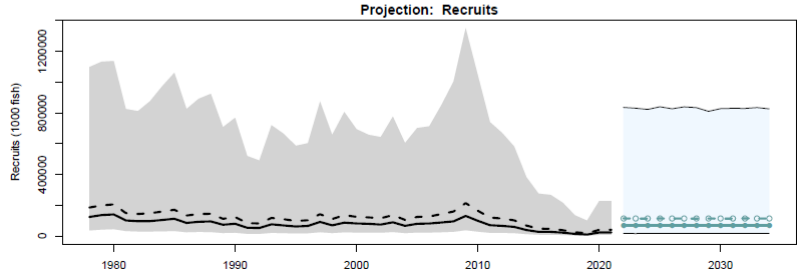




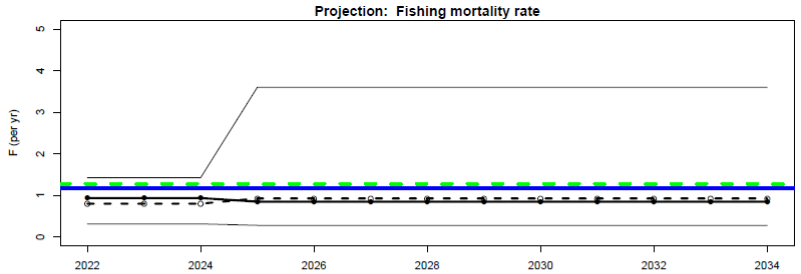
2019-21 $F_{40\%}$*0

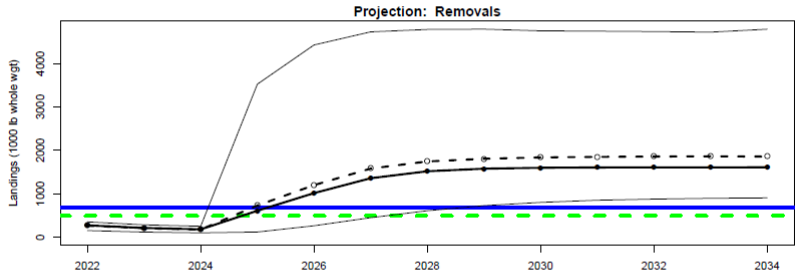


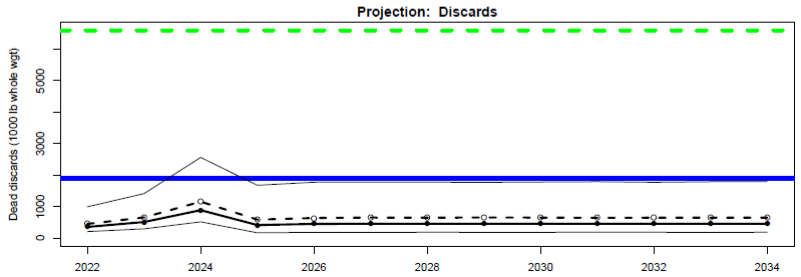




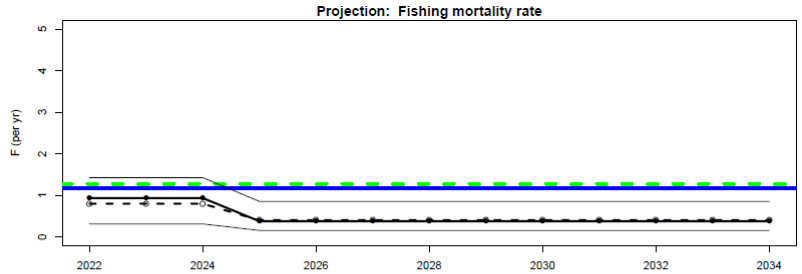
11” 2007-08 $F_{40\%}$*0.72

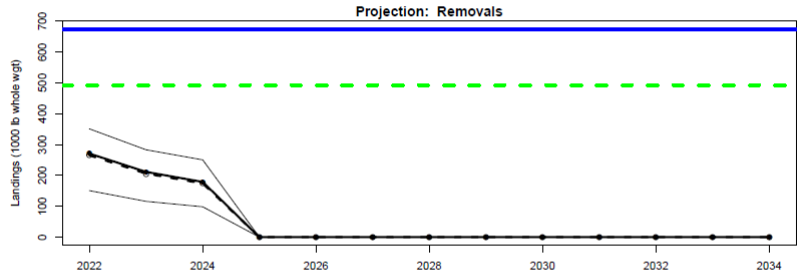


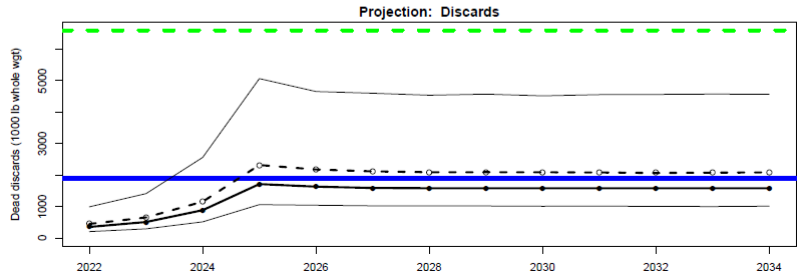




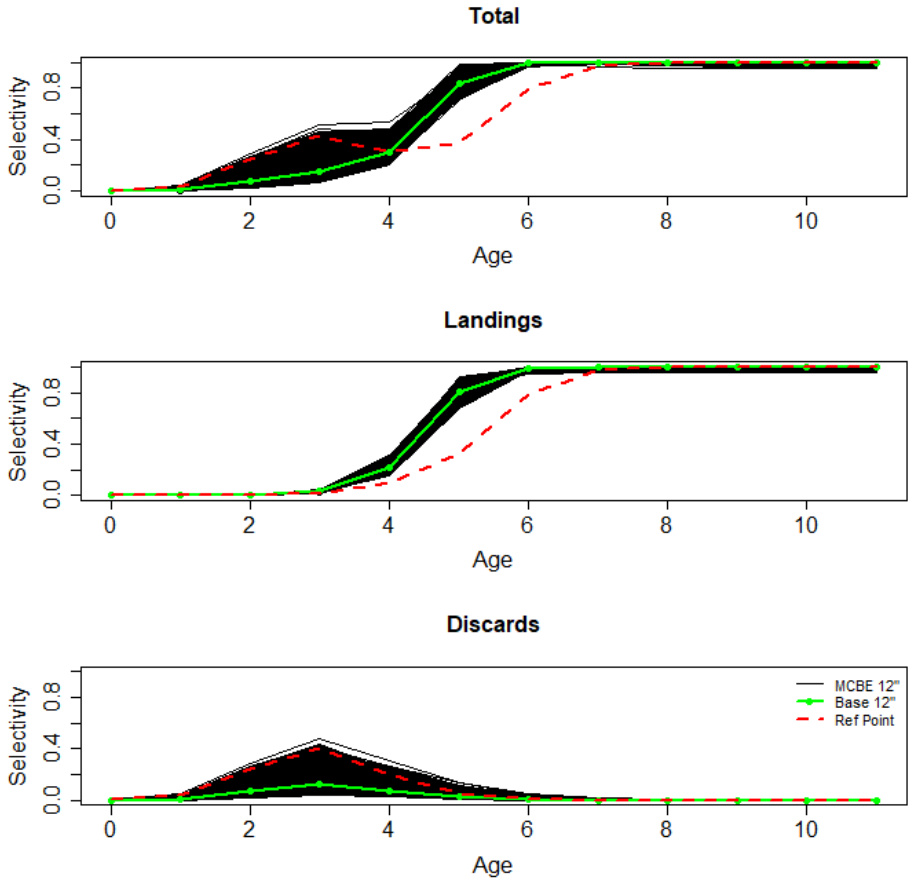
2019-21 $F_{40\%}$*0



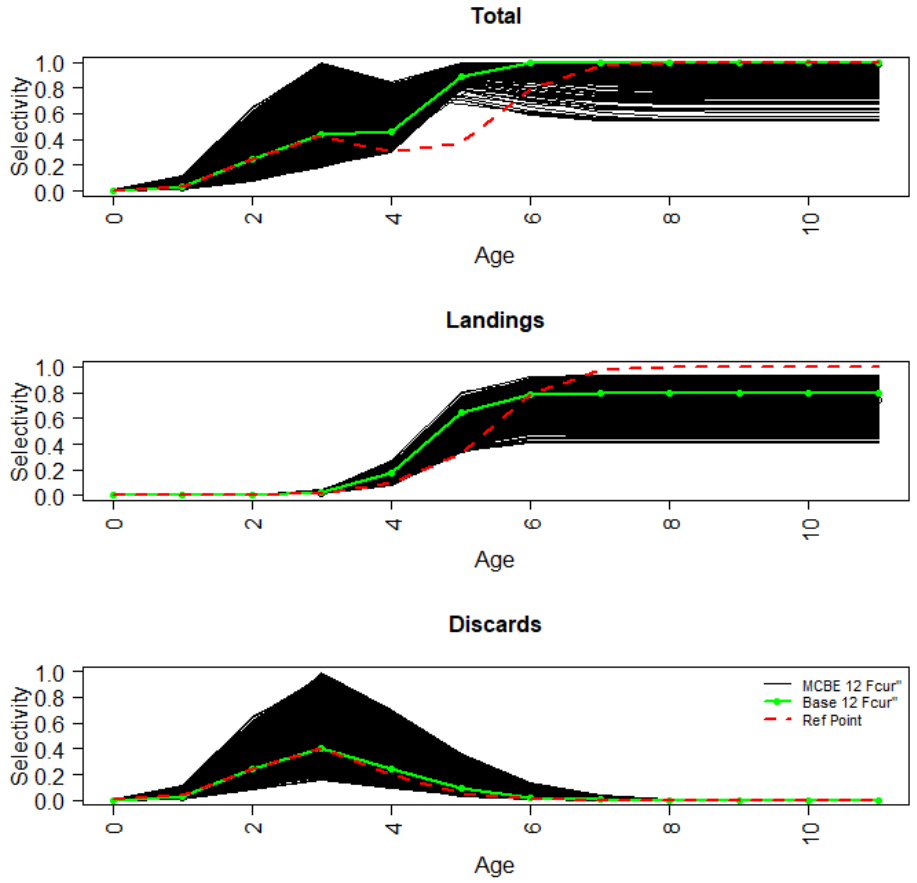




12” 2007-2010



2019-2021



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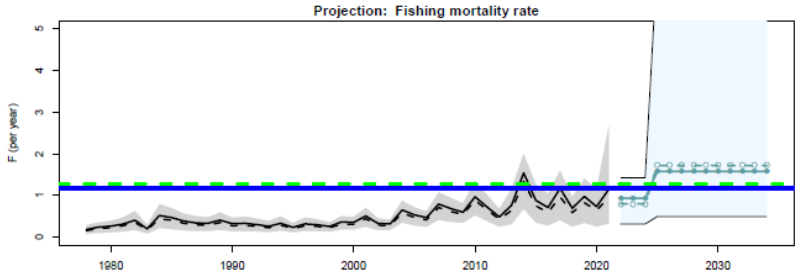
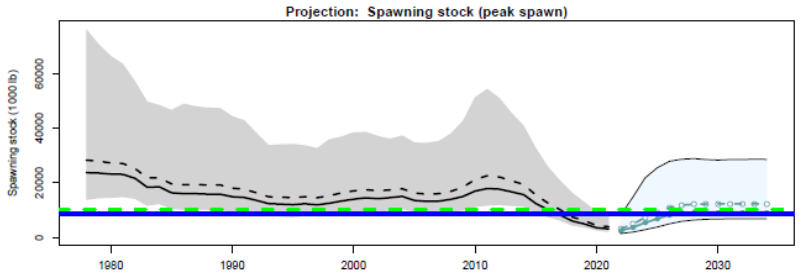
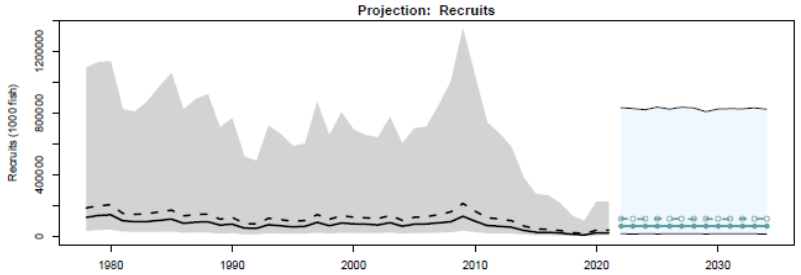
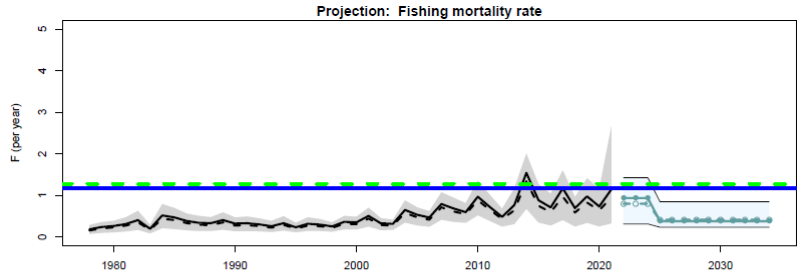
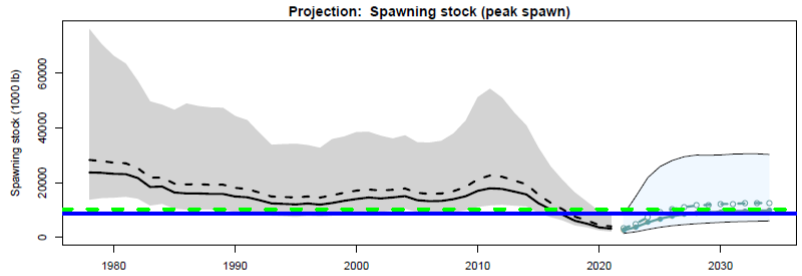
12” 2007-10 $F_{40\%}$*1.34 2019-21 $F_{40\%}$*0.1

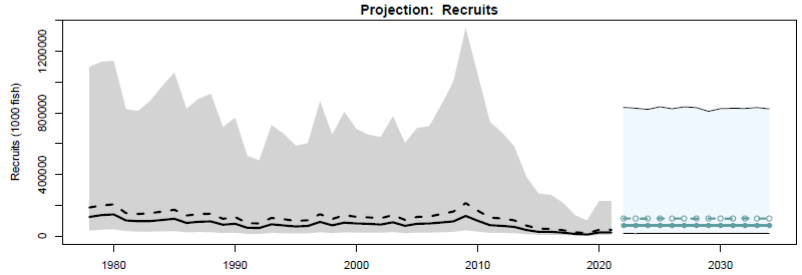




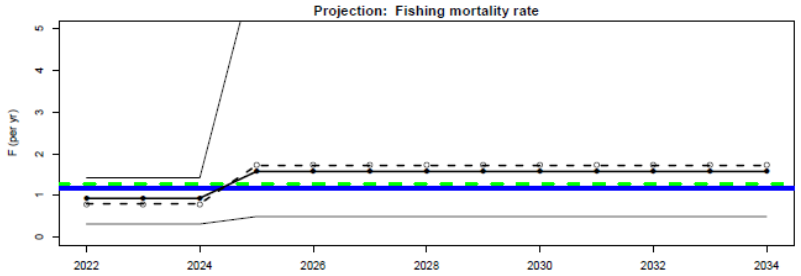


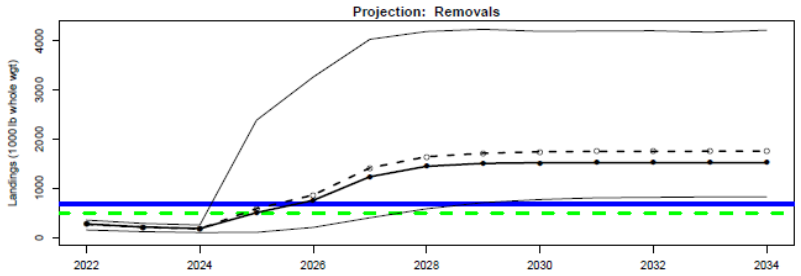


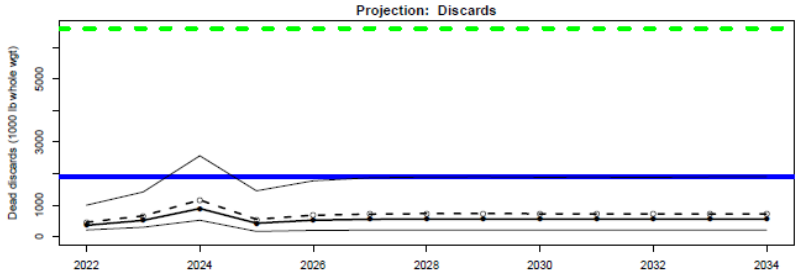


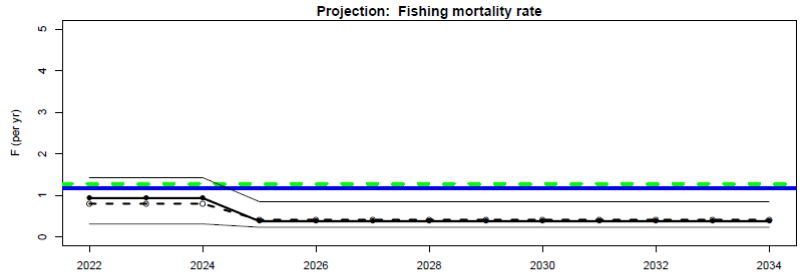


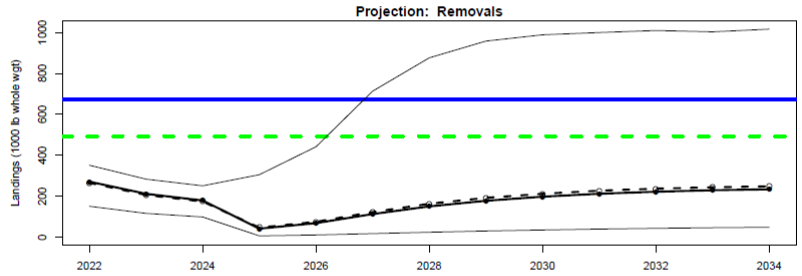
12” 2007-10 $F_{40\%}$*1.34 2019-21 $F_{40\%}$*0.1

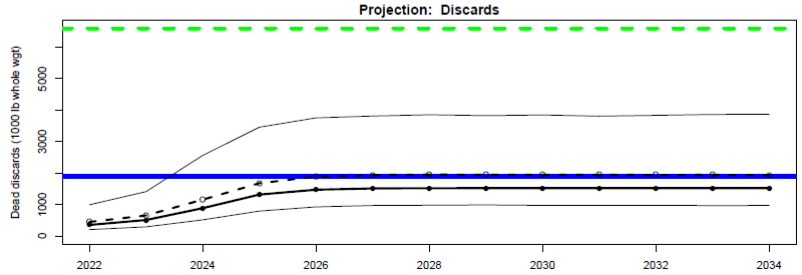




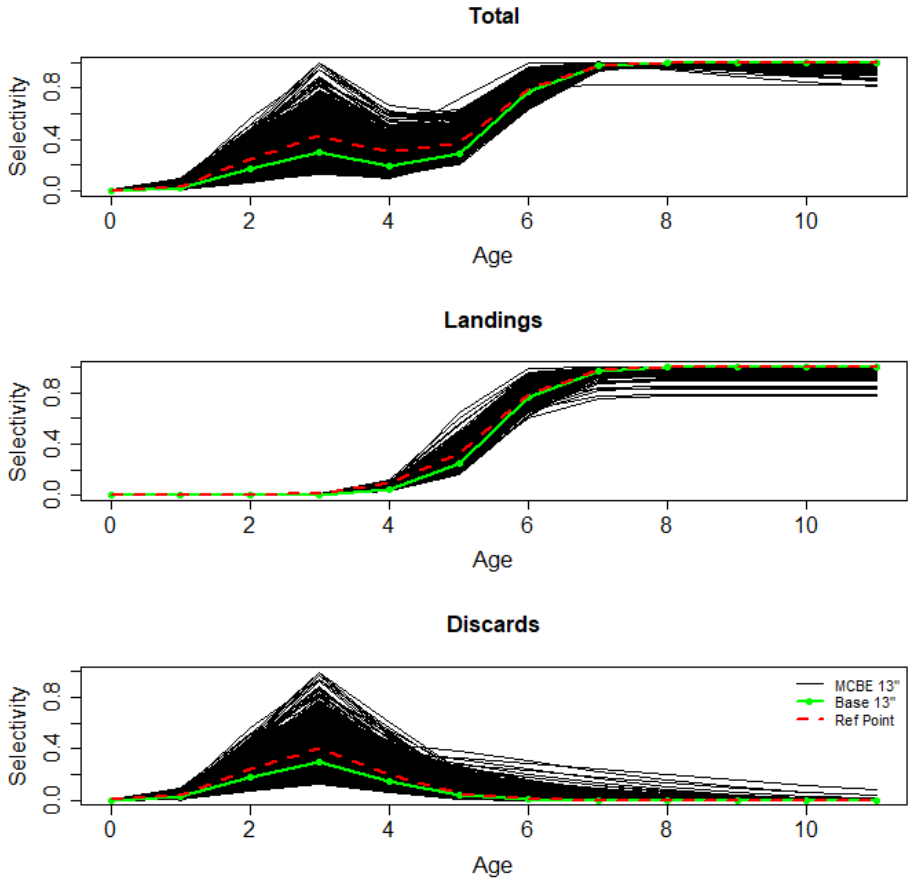




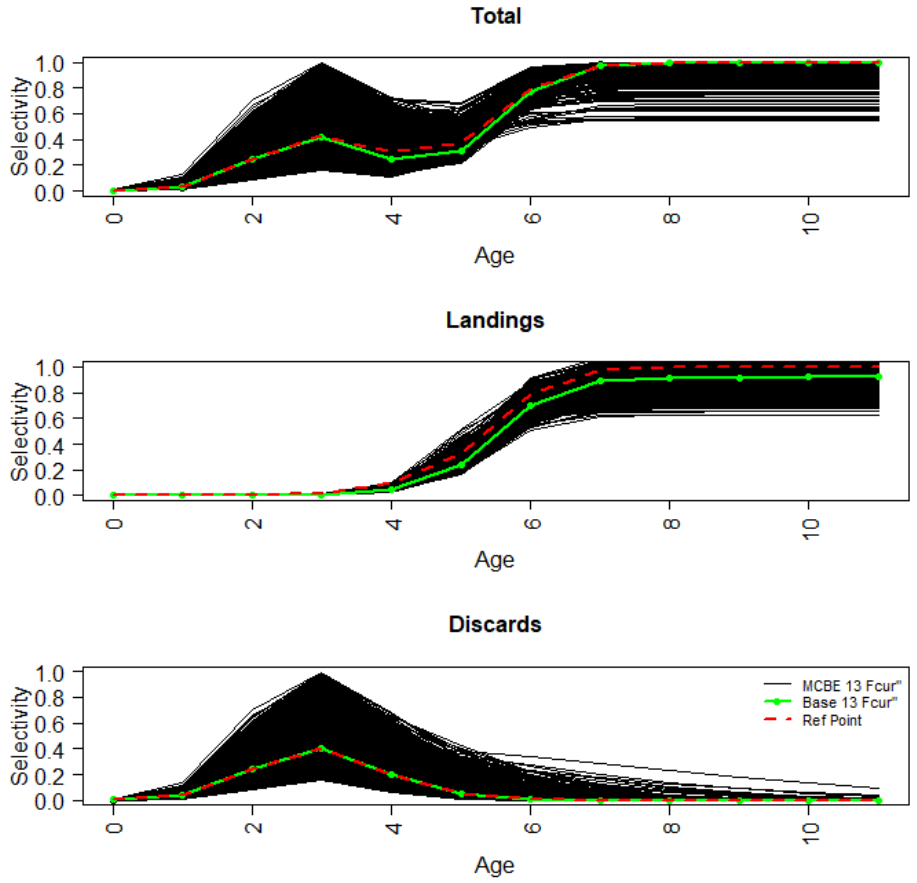




13” 2013-2021



2019-2021



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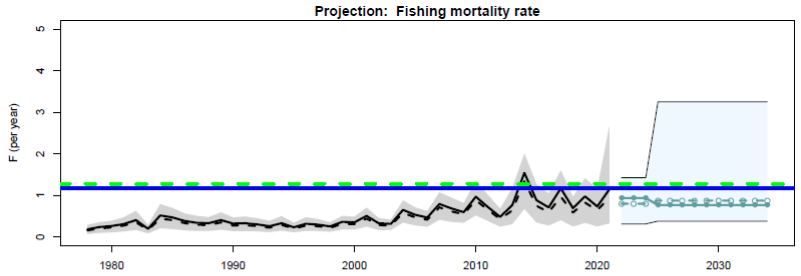
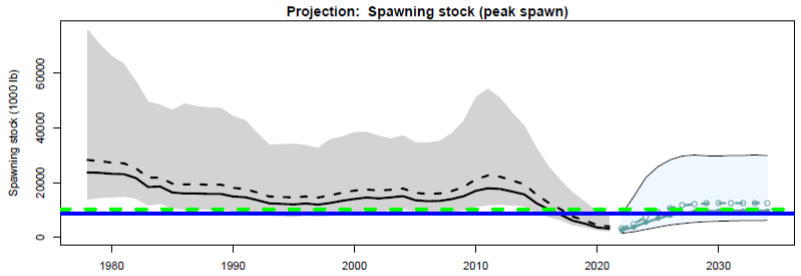
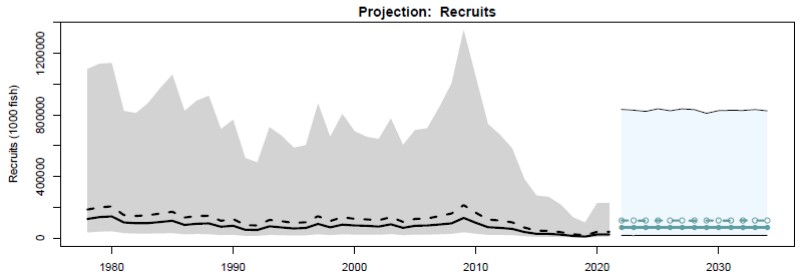
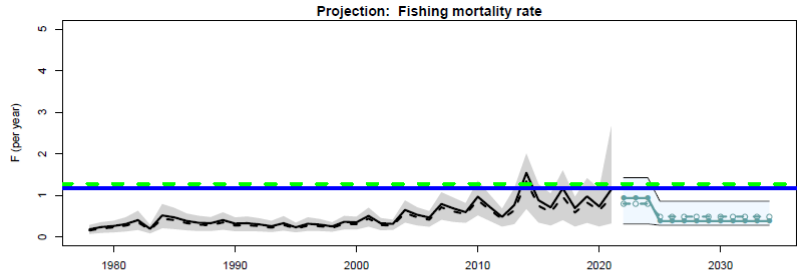
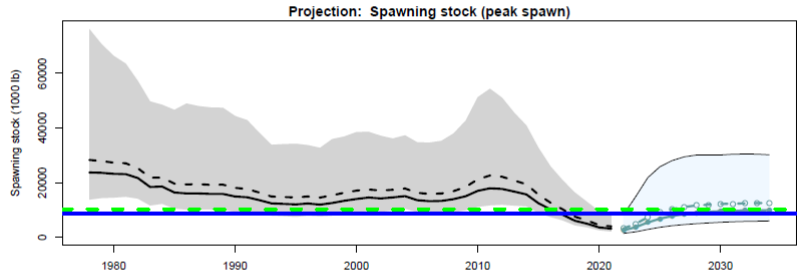
13” 2013-21 $F_{40\%}$*0.65 2019-21 $F_{40\%}$*0.16

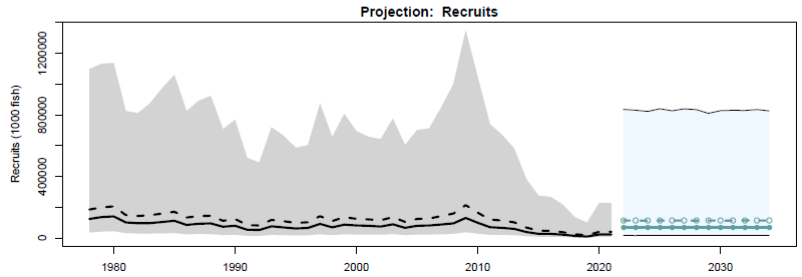




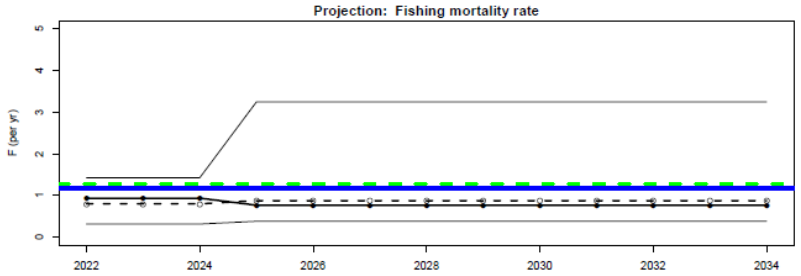


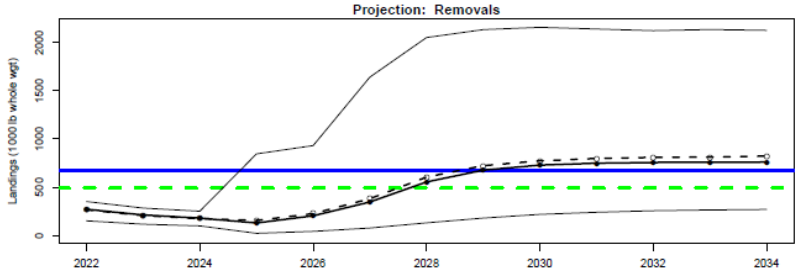


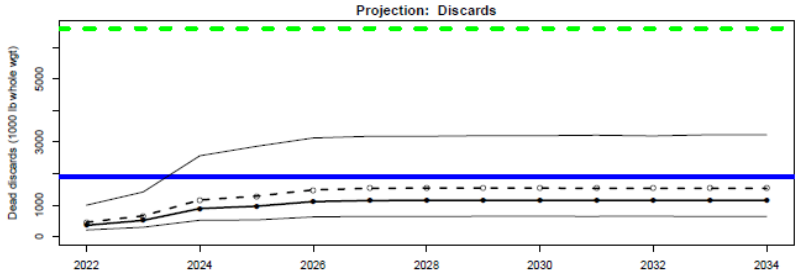


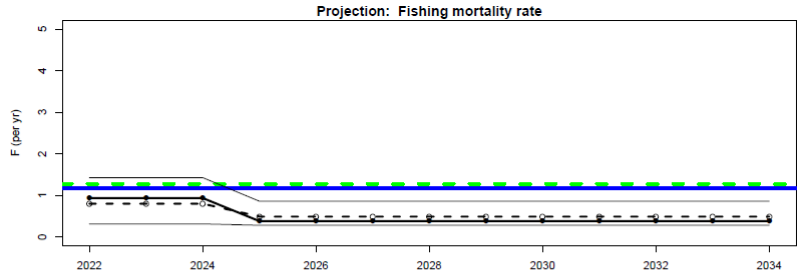


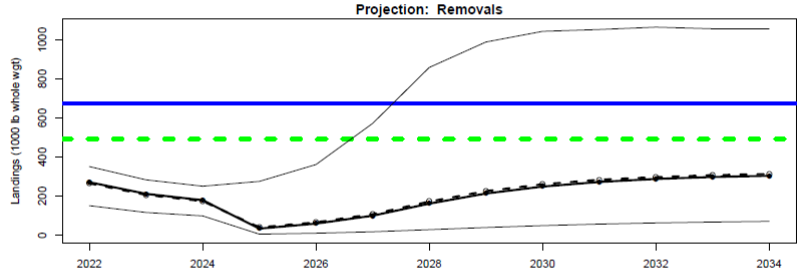
13” 2013-21 $F_{40\%}$*0.65 2019-21 $F_{40\%}$*0.16

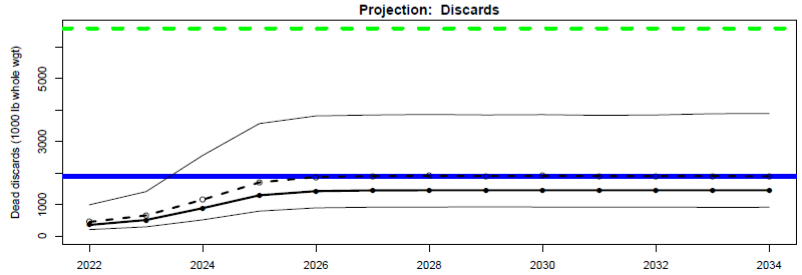












Closed season

- Proportion of landings and discards in wave 1 and wave 2 for MRIP and headboat obtained
- Use weighted average of F between 2 fleets to calculate proportion of landings and discards during wave 1 and wave 2
- What is likely to become of these fish?
  - Most likely that these will become discards but will be all sizes not just small
  - Could keep discard F the same, would landings be added to discards?
  - Would this be sector dependent (i.e., shore vs boat)

Additional Request for October SSC

- Using the current project methods, incorporate a phase-in of ABC reductions over 3 years for Black Sea Bass. Assume landings of 68,000 lbs in 2026, 61,000 lbs in 2027, and 54,000 lbs in 2028. Compare the probability of rebuilding by 2030 (~approximately one generation based on SEDAR 76) and 2034 (10-year) with current projections.
- Applying the current commercial: recreational allocation (43/57) to total fishery yield and then subtract discards for each sector to provide sector ABCs.
  - Apply to both the 30% and 40% SPR scenarios.
  - Assume status quo selectivity for both sectors.

ABC Phase-in assumptions/methods

- Assume that fishing mortality from discards remains at current levels
- Solve for landings F to give proposed phase-in landings (2025-2028)
- For 2029- 2030/2034 Use landings F from original projections

OR

Solve for new F that results in rebuilding to required levels?

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Subtract out discards from allocations

- Using the geometric mean of F in 2019-2021
  - Percent of discard F from commercial is 0.075% (effectively all recreational)
  - Percent of F from discards 28.88%
- From ABC projection in 2025
  - Discards in weight 503,000 lb (92%), Landings 35,000 lb
  - Recreational discards would exceed allocation
- Additionally, implicitly assumes that pounds of discards are equivalent to pounds landing, which is not true due to difference in sizes
- Guidance on how to best approach this request?

Discussion questions

1. Is using the discard to landings selectivity weighting from 2019-2021 for all minimum size limit scenarios the best assumption?
2. Is using the discard F from 2019-2021 for all minimum size limit scenarios the appropriate assumption?
3. Are fish caught during closed season more likely to be additional discards or will all fishing cease?
4. How to perform the subtract out discards from quota scenario
   - Is it sufficient to show that recreational discards exceeds proportion in ABC?

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