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Black Sea Bass 2019 Operational Assessment

**Presentation to MAFMC SSC
September 10, 2019**

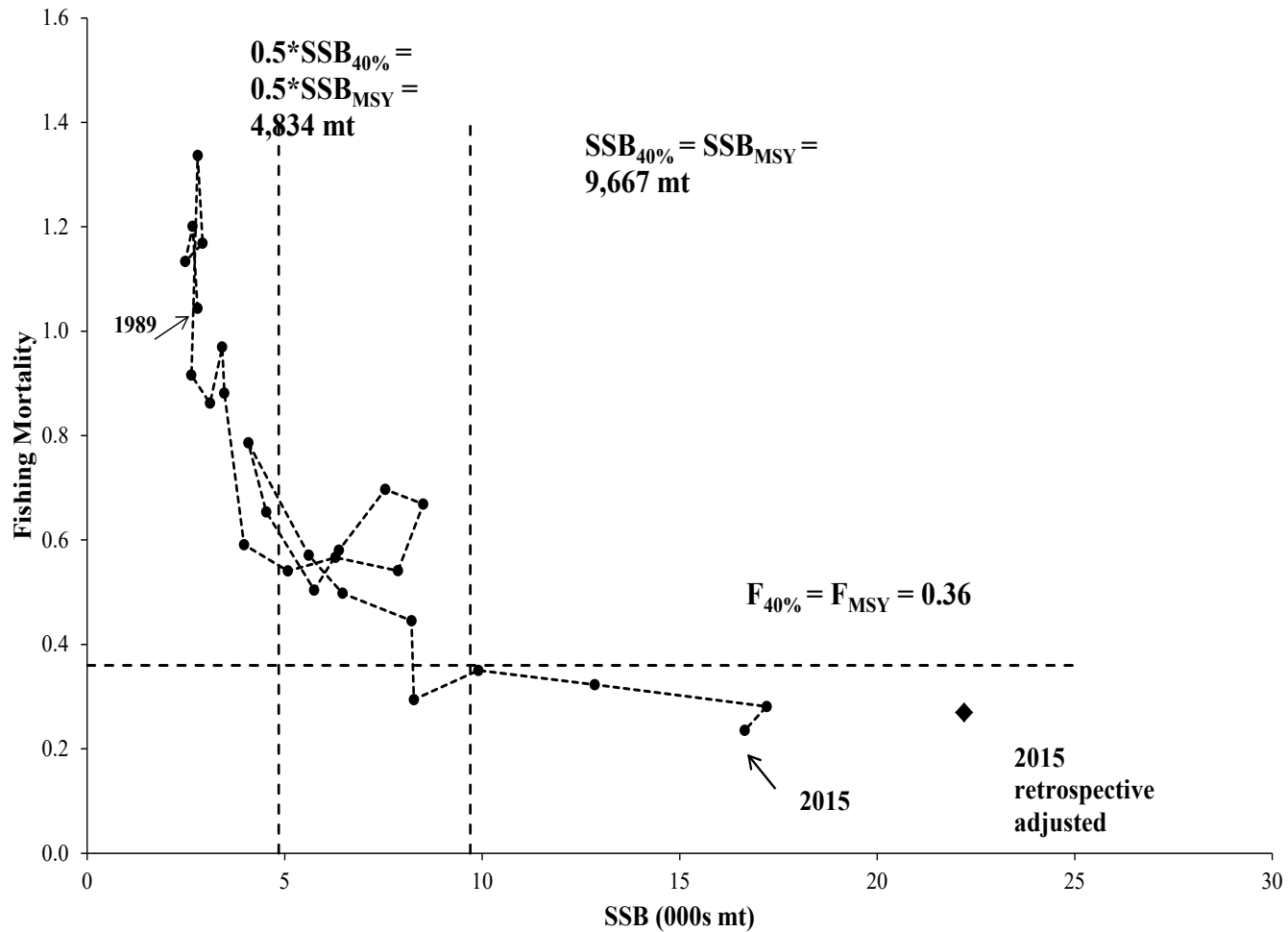
2016 Assessment Results

- Not Overfished and No Overfishing
- Historically large 2011 year class
- SSB in 2015 about 2.3x B_{MSY} target
- F about 75% of F_{MSY} threshold
- Minor internal retrospective for combined regions; large in each region but opposite directions
- Retro adjusted in each region prior to combining
- SSC accepted assessment and projections for OFLs/ABCs for combined regions through 2019

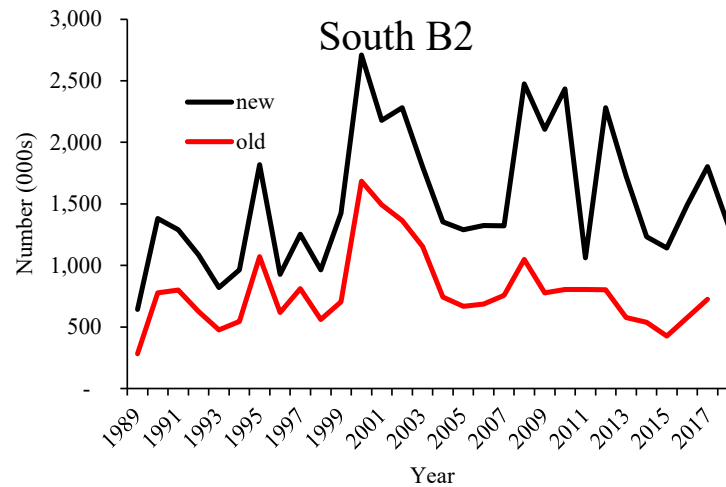
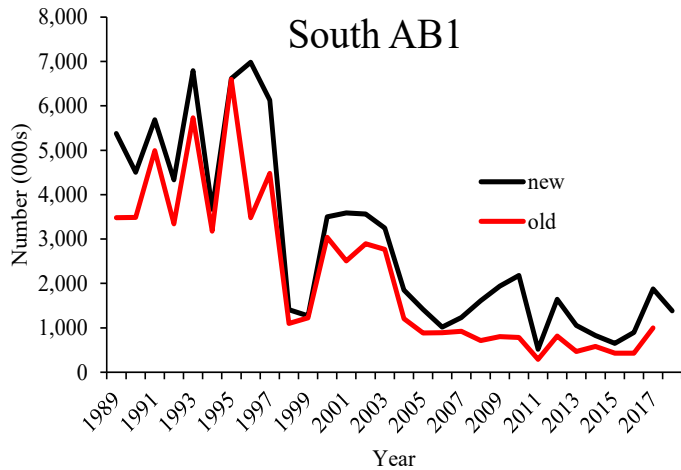
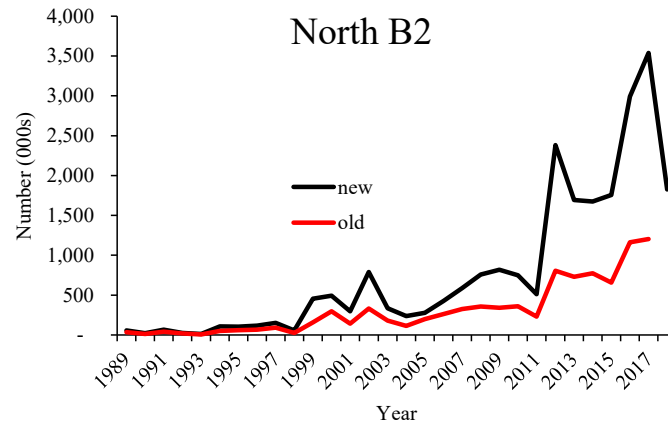
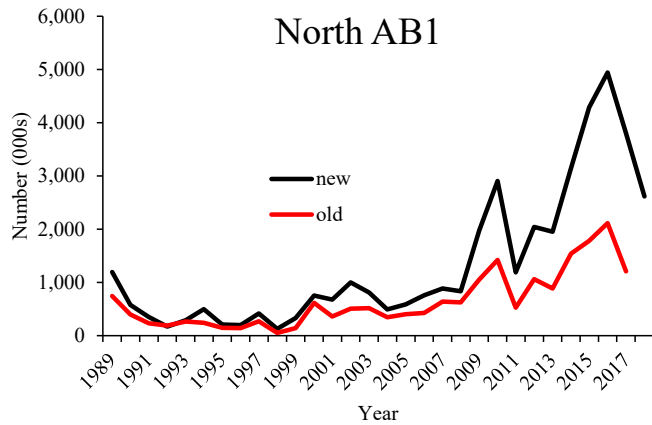
<https://www.nefsc.noaa.gov/publications/crd/crd1703/>



2016 Black Sea Bass status plot

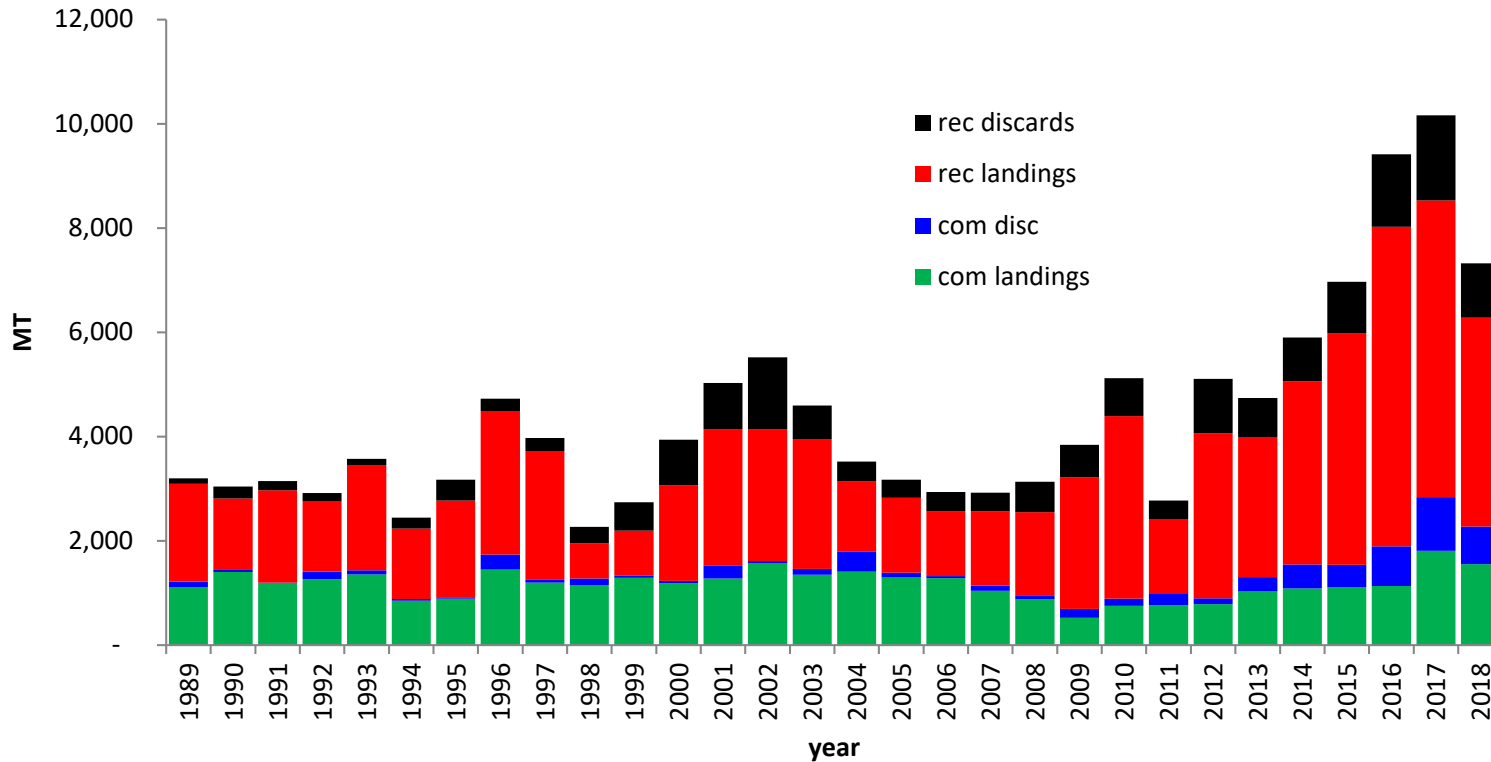


MRIP Estimates old vs new



- B2 with 15% discard mortality

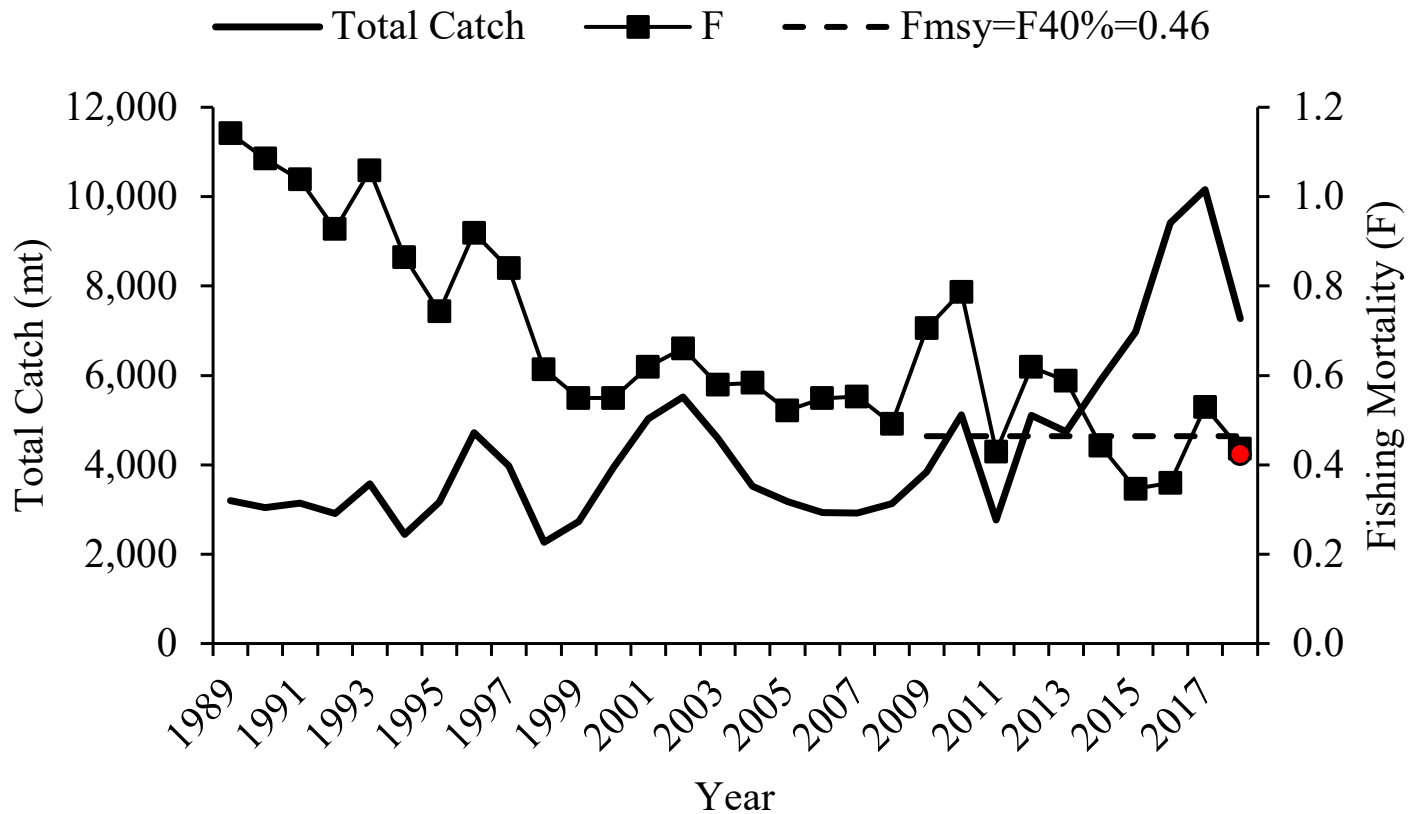
Total Black Sea Bass Catch (mt) 1989-2018



- Note: Total includes new MRIP estimates. Cannot compare to previous ABC's.

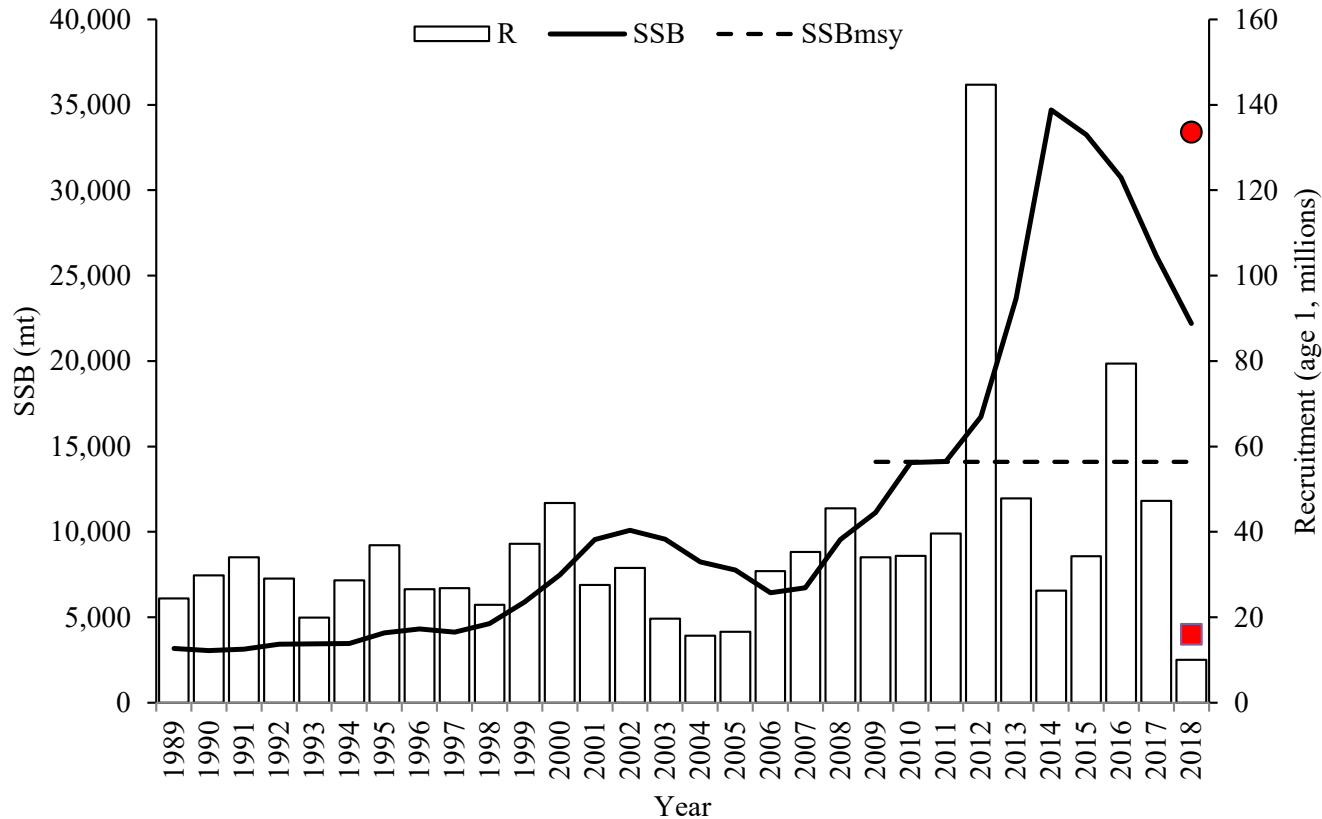


Black Sea Bass Total Catch and Fishing Mortality



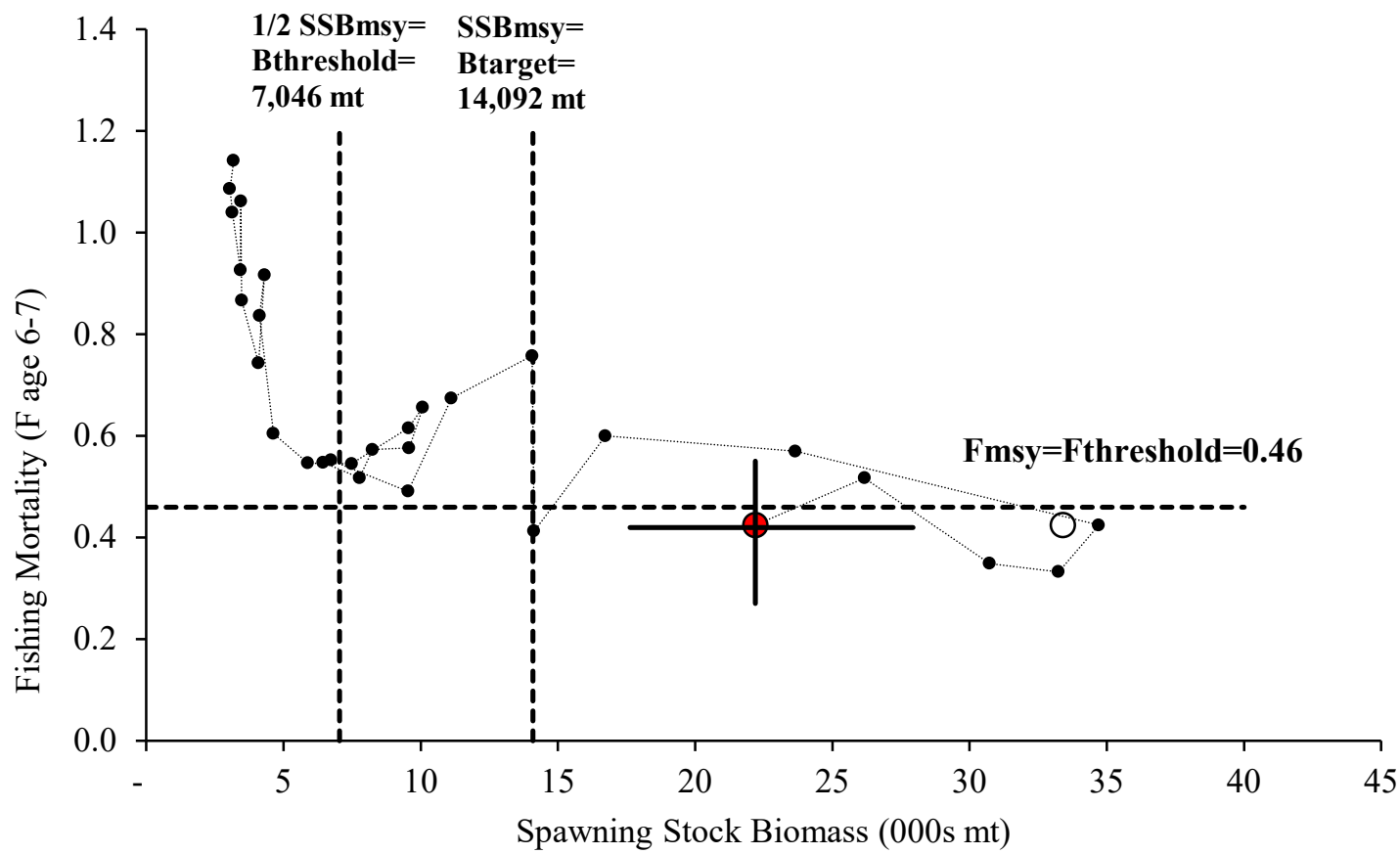
Retrospective adjusted point indicated in terminal year

Black Sea Bass Spawning Stock Biomass and Recruitment

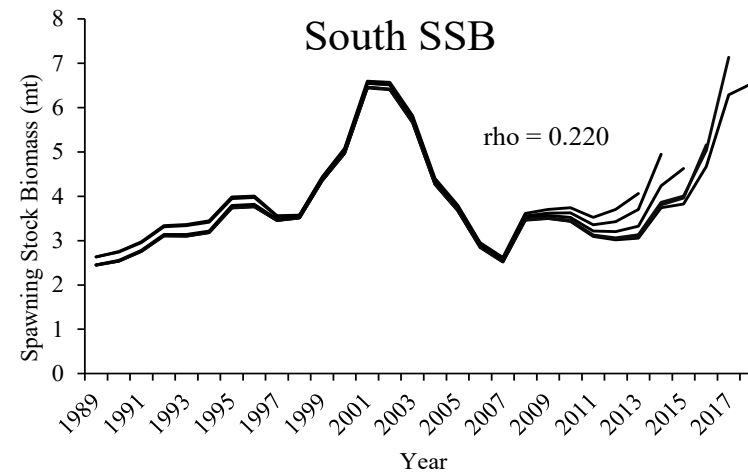
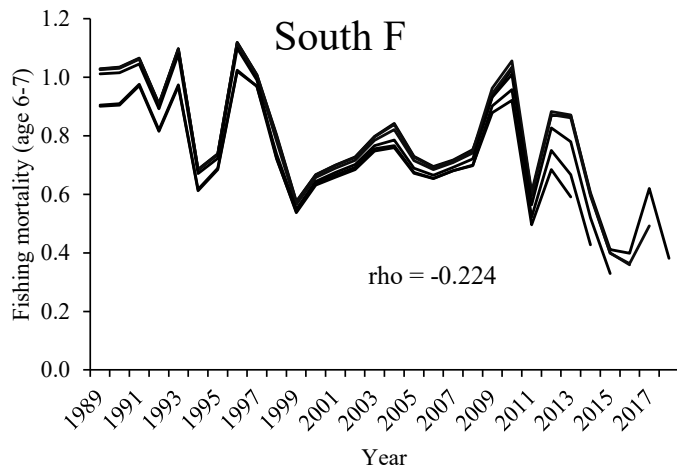
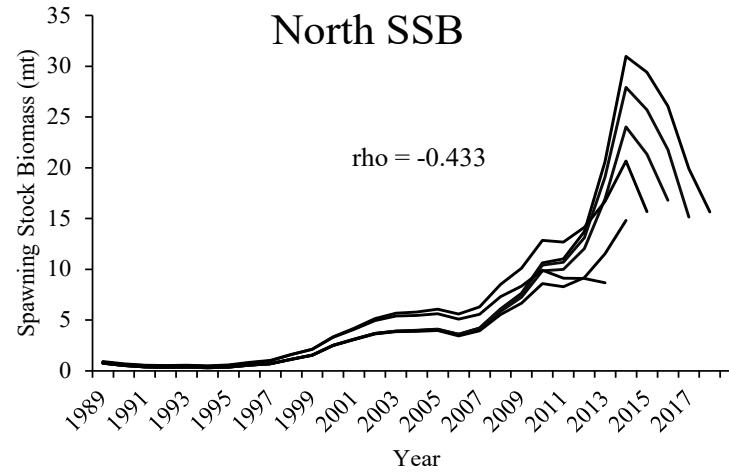
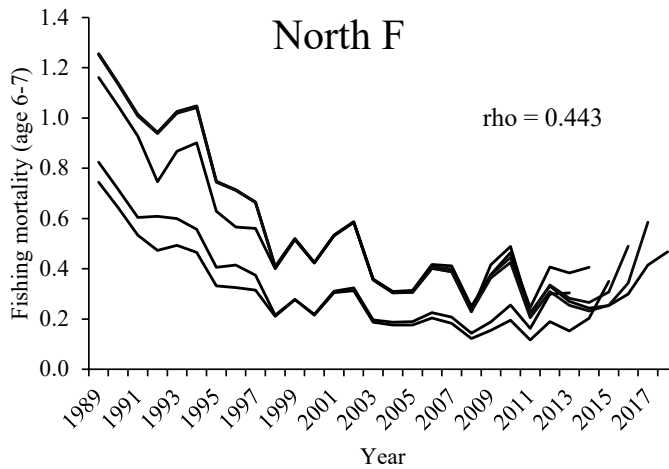


Retrospective adjusted point indicated in terminal year

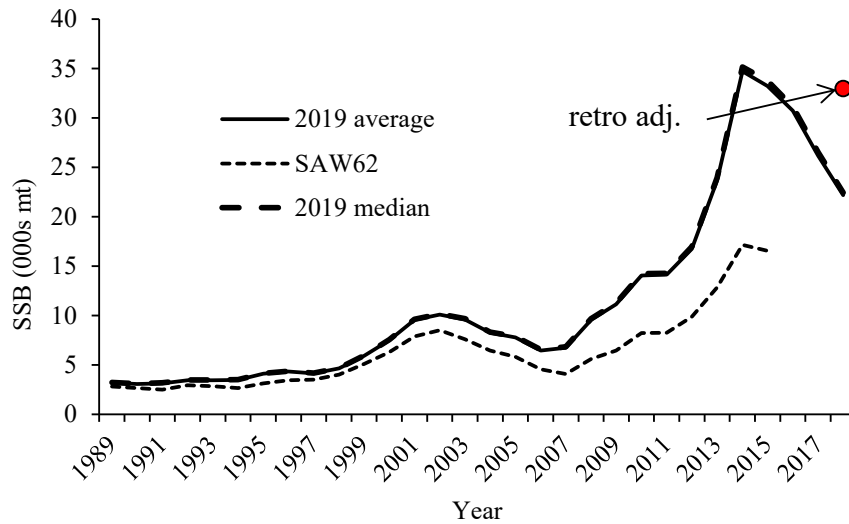
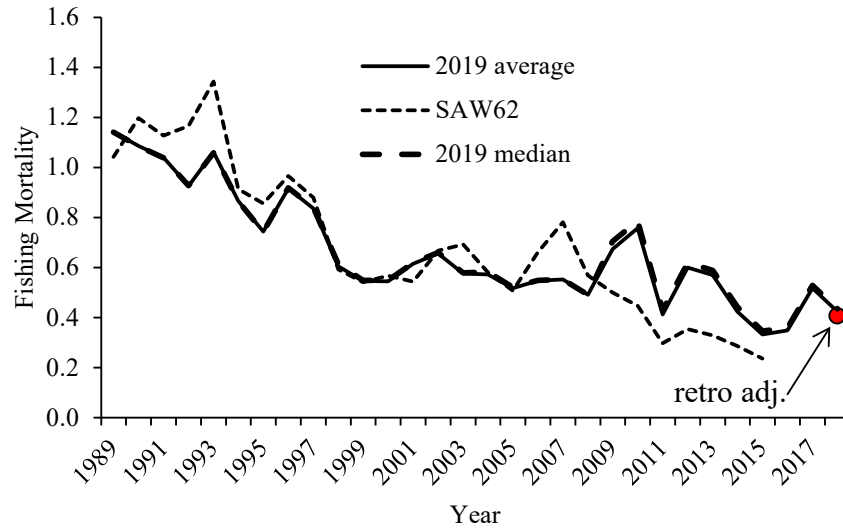
Black sea bass spawning stock biomass (SSB) and fully-recruited fishing mortality ($F_{\text{ages 6-7}}$) with updated BRPs



Black Sea Bass Retrospective Patterns



Black Sea Bass Historic Retrospective



Black Sea Bass 2019 Operational Assessment

Reference Points and Status

SAW62	SSB_{MSY}	B_{MSY}	F_{MSY}	MSY	1/2 SSB_{MSY}	1/2 B_{MSY}
Combined north and south	9,667	17,256	0.36	3,097	4,834	8,628
-2 SD	5,517	9,801		1,797	2,759	4,901
+2 SD	13,816	24,709		4,396	6,908	12,355

2016: Not Overfished and No Overfishing

2019 UPDATE	SSB_{MSY}	B_{MSY}	F_{MSY}	MSY	1/2 SSB_{MSY}	1/2 B_{MSY}
Combined north and south	14,092	21,635	0.46	4,773	7,046	10,818
-2 SD	9,049	14,558		3,136	4,524	7,279
+2 SD	24,946	35,643		8,274	12,473	17,822

	SSB	Biomass	F
unadjusted 2018 results	22,788	30,927	0.44
retro adjusted 2018 results	33,407	43,787	0.42

$$SSB_{2018} > SSB_{MSY} \quad F_{2018} < F_{MSY}$$

2019 Black Sea Bass Operational Assessment

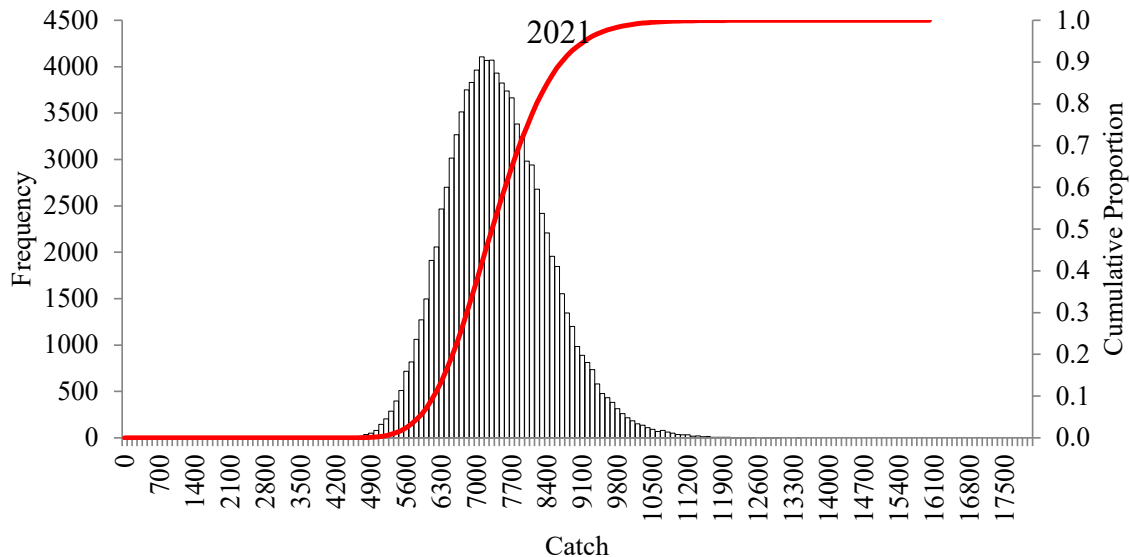
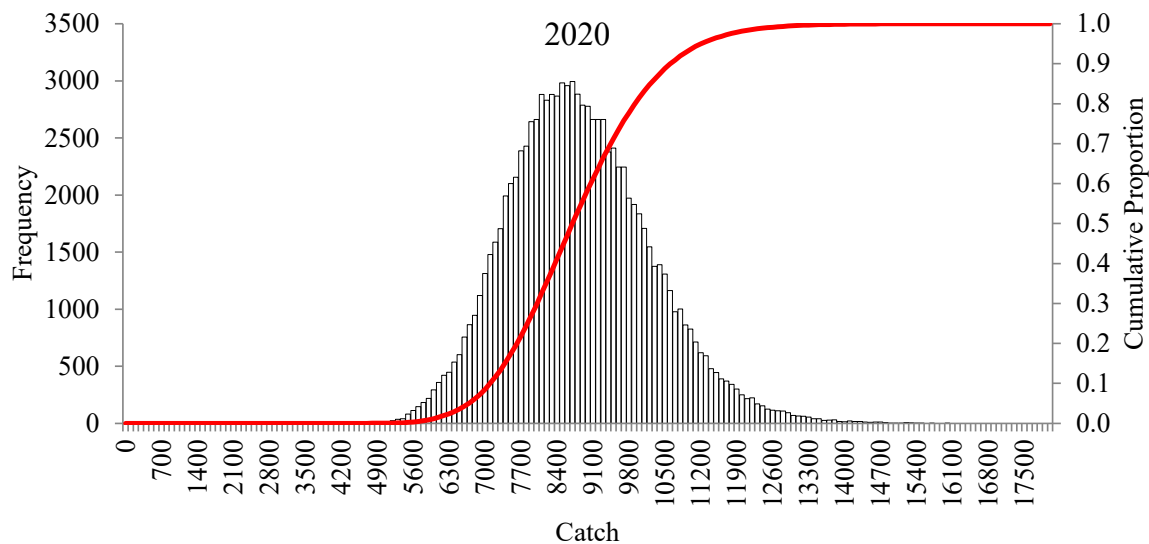
OFL Projections

	North-South Combined
$F_{MSY \text{ proxy}}$	0.46
SSB_{MSY}	14,092
MSY	4,773
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Catch	
2018	7,277
2019	7,917
2020	8,795
2021	7,378
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SSB -median	
2018	33,407
2019	27,659
2020	22,699
2021	20,379
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Fishing Mortality	
2019	0.33
2020	0.46
2021	0.46

Retro adjusted estimates



Black Sea Bass probability distribution of OFL



Questions?



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