NOAA FISHERIES

Case Studies: Effect of FES on Catch Advice for Gulf of Mexico King Mackerel and Gray Snapper

SEFSC Staff

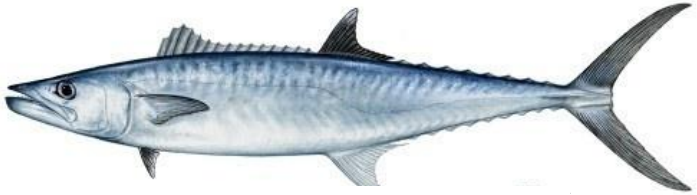
GMFMC SSC MRIP Workshop

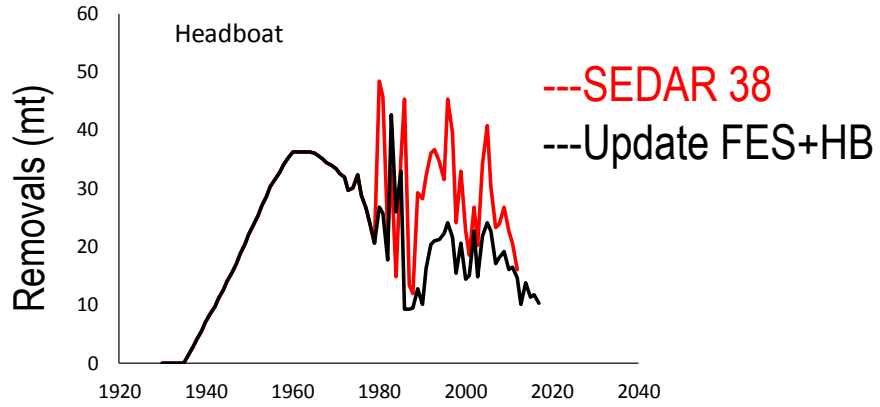
July 8-9, 2020

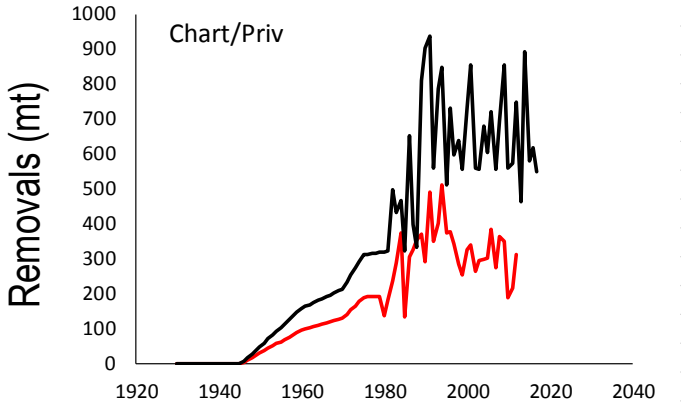
Objectives:

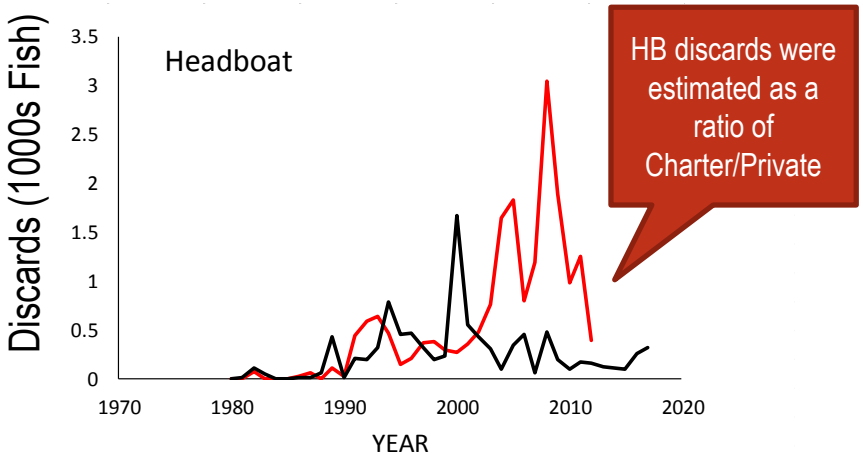
- Comparison of landings and discards as used in the stock assessment. ***Refer to NOAA OST presentations for further details.***
- Show effect of FES changes on stock assessment catch recommendations

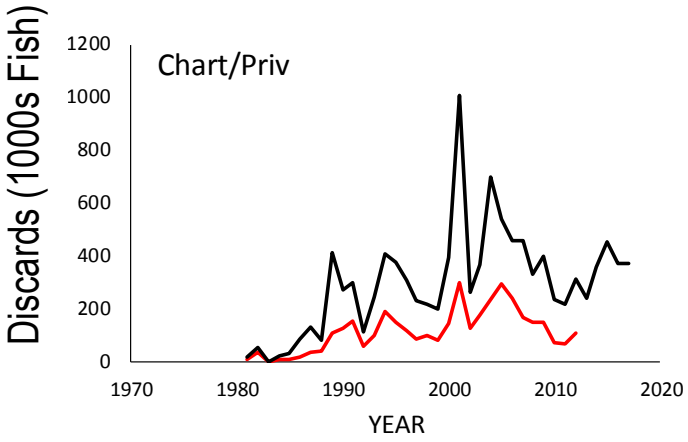
King Mackerel: Landings and Discards



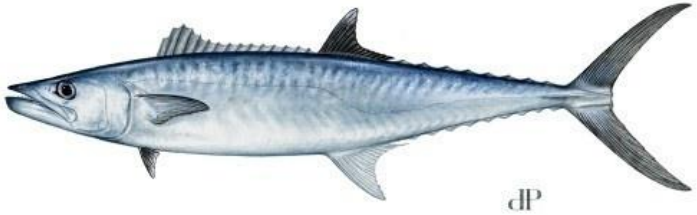


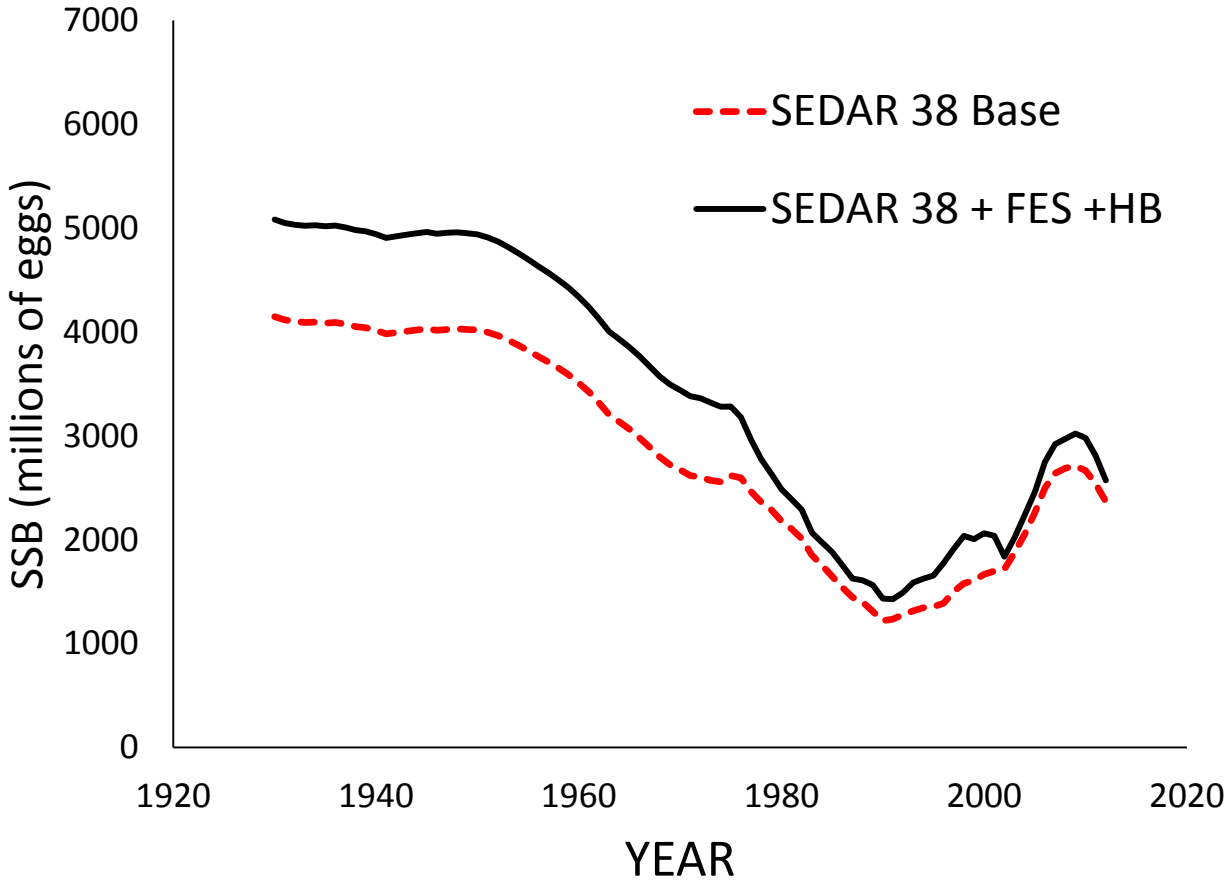




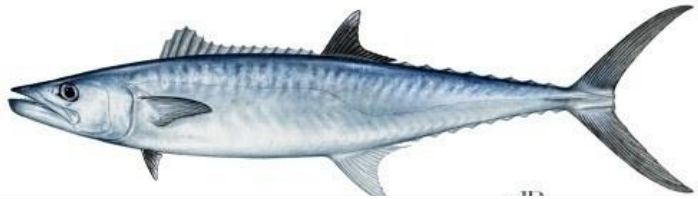


King Mackerel: Spawning Stock Biomass





King Mackerel: Catch Recommendations



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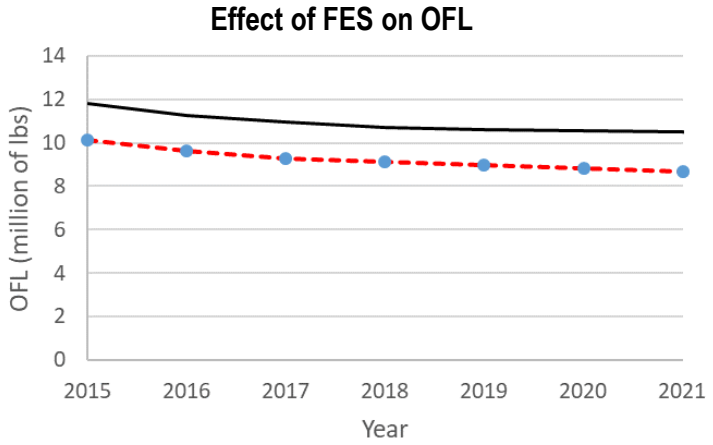
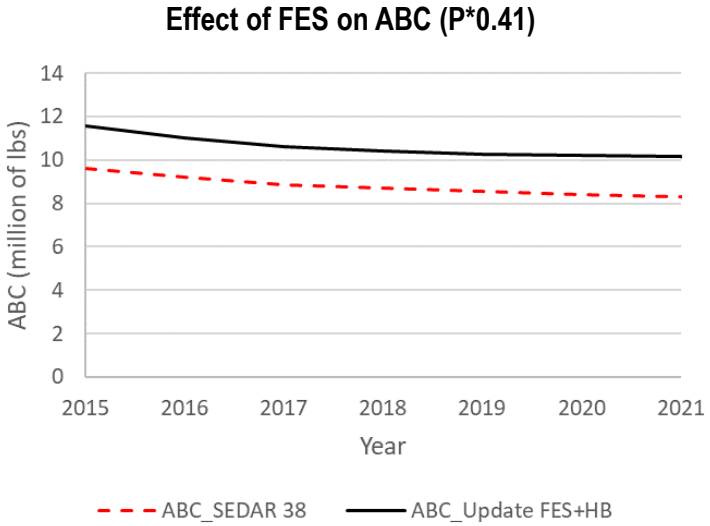
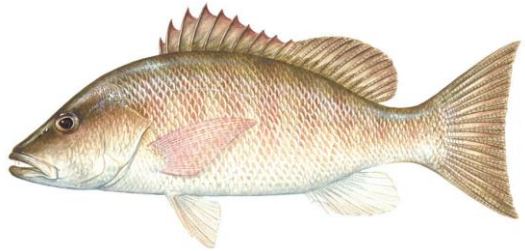


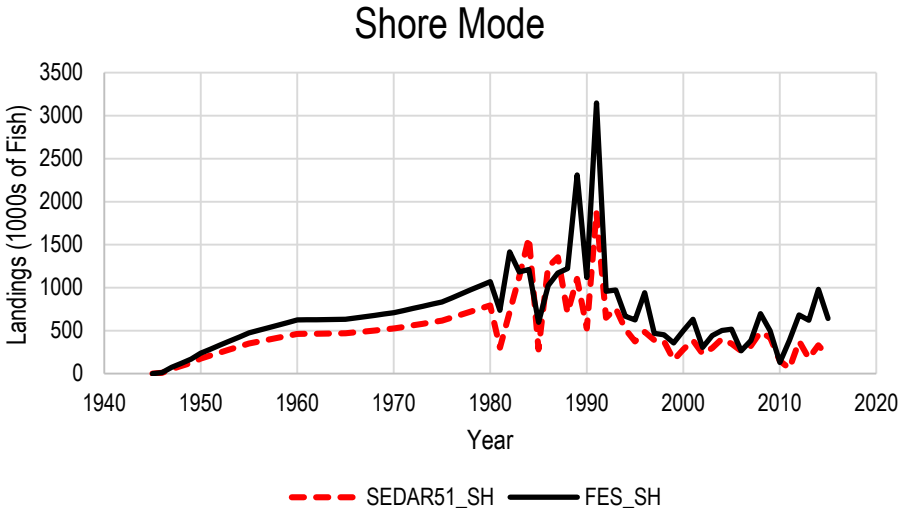


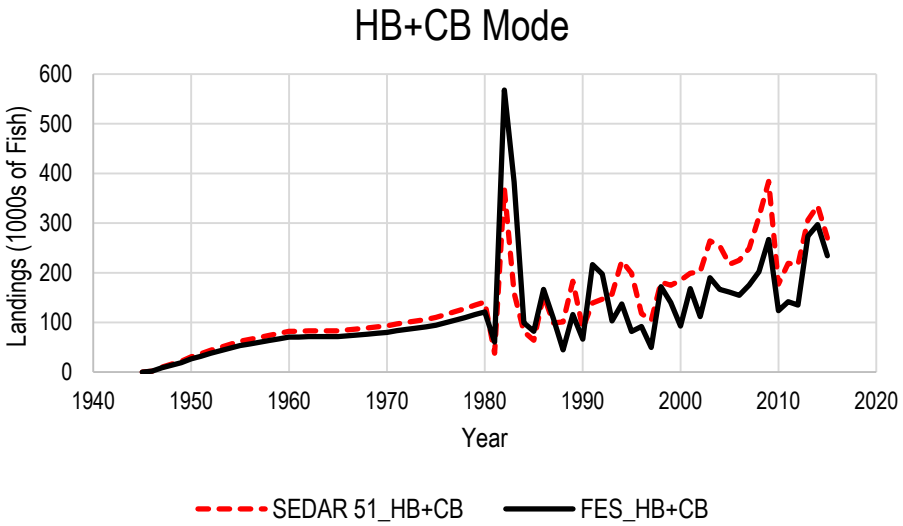
	SEDAR 38		SEDAR 38_FES+HB			
YEAR	OFL	ABC	OFL	ABC	%Diff OFL	%Diff ABC
2015	10.11	9.62	11.8	11.5	17%	19%
2016	9.61	9.21	11.3	10.9	17%	18%
2017	9.27	8.88	10.9	10.5	18%	19%
2018	9.11	8.71	10.7	10.3	18%	18%
2019	8.95	8.55	10.6	10.2	19%	19%
2020	8.81	8.43	10.5	10.1	20%	20%
2021	8.68	8.29	10.5	10.0	21%	21%

Note: The updated FES projections are intended to show the effects of updated recreational landings only. They are not the official projections for the 2020 update assessment which will undergo SSC review in Sept 2020.

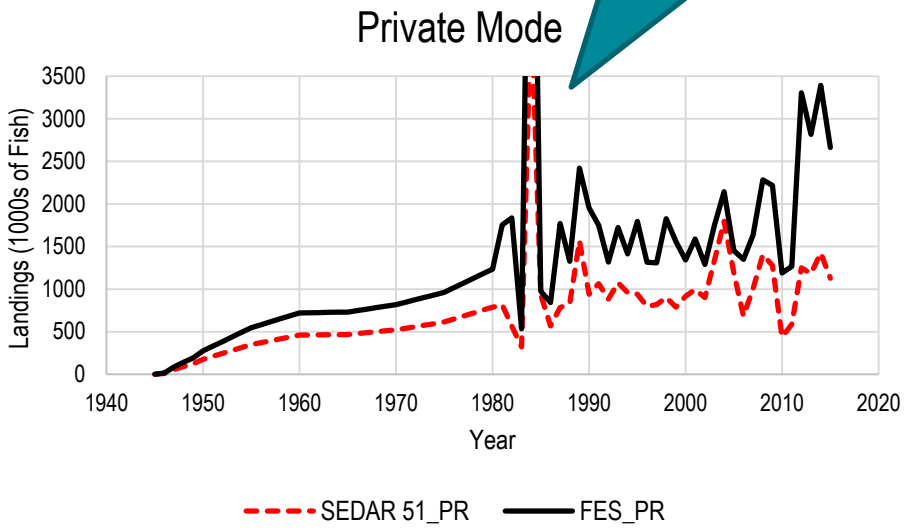
Gray Snapper: Landings



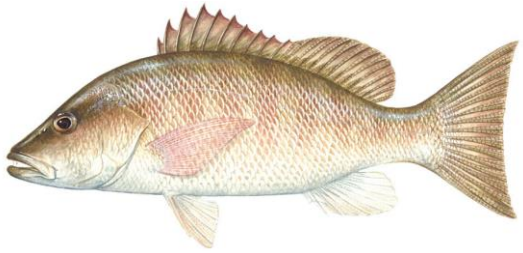


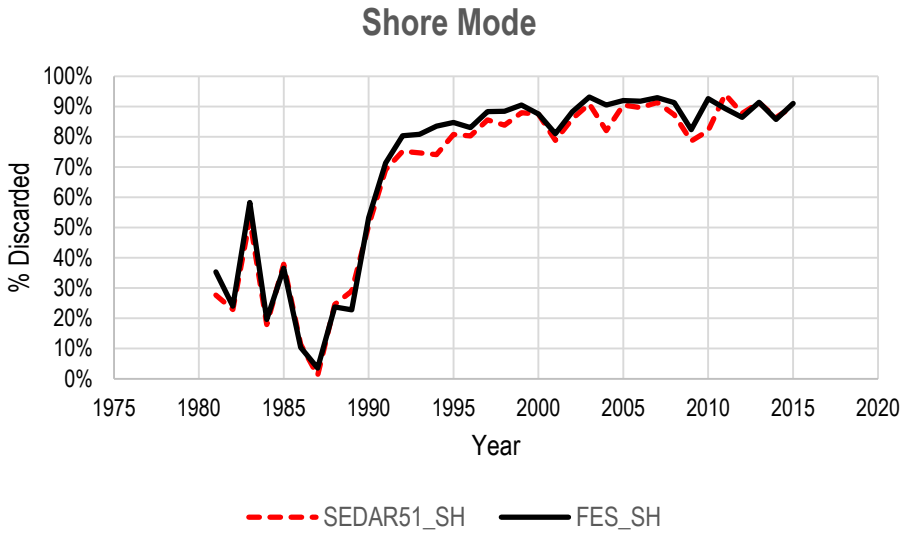


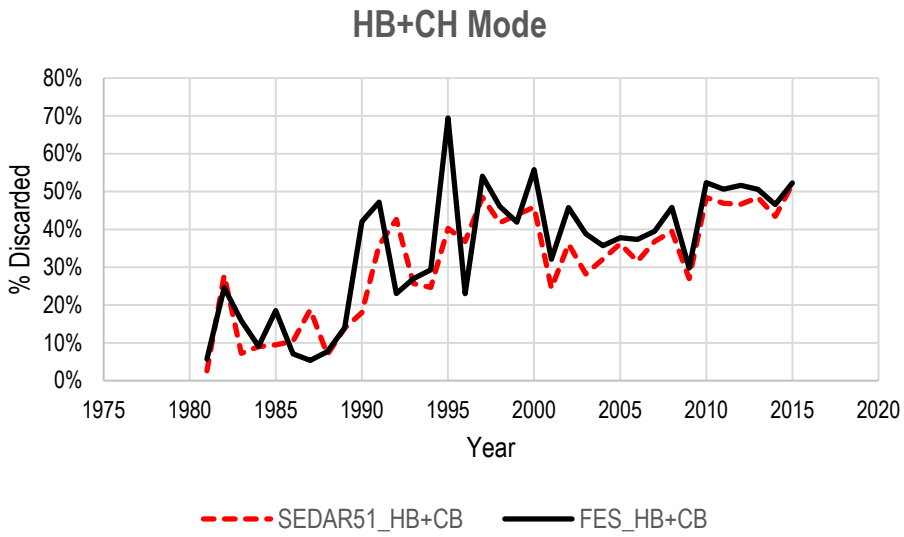
Noted Outlier: Requires further investigation

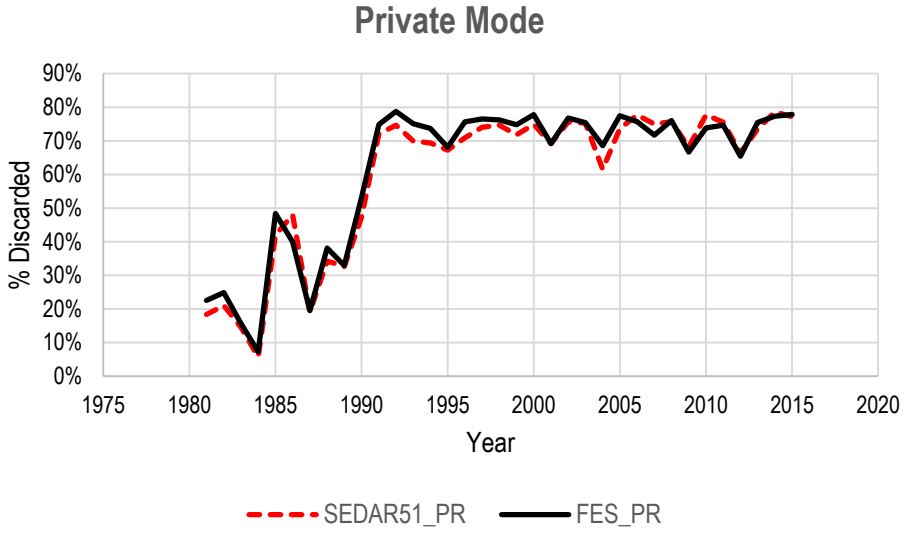


Gray Snapper: %Discarded

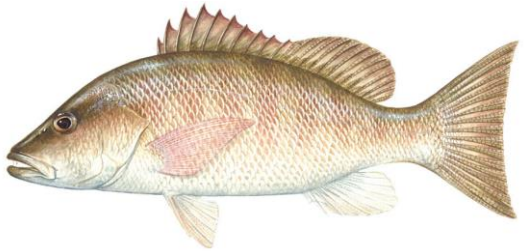


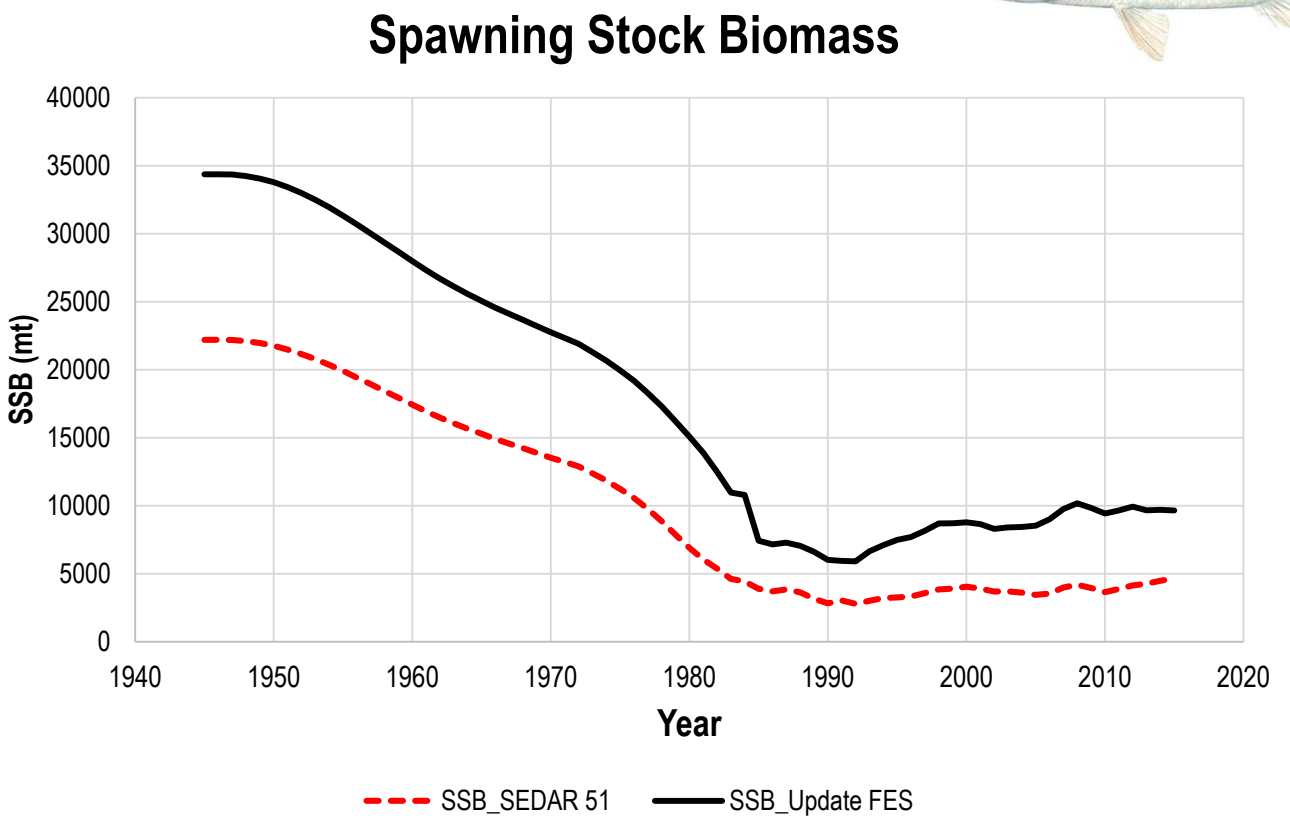




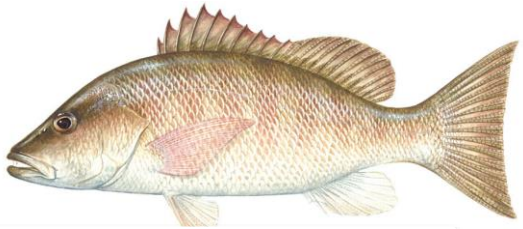


Gray Snapper: Spawning Stock Biomass

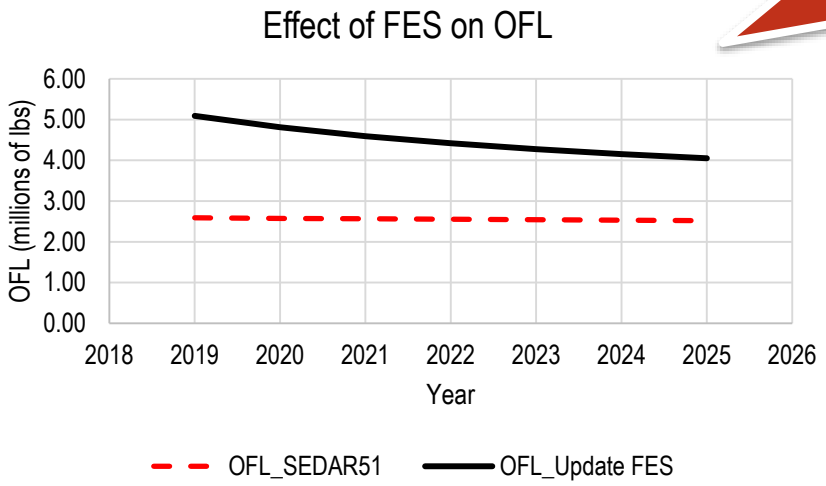


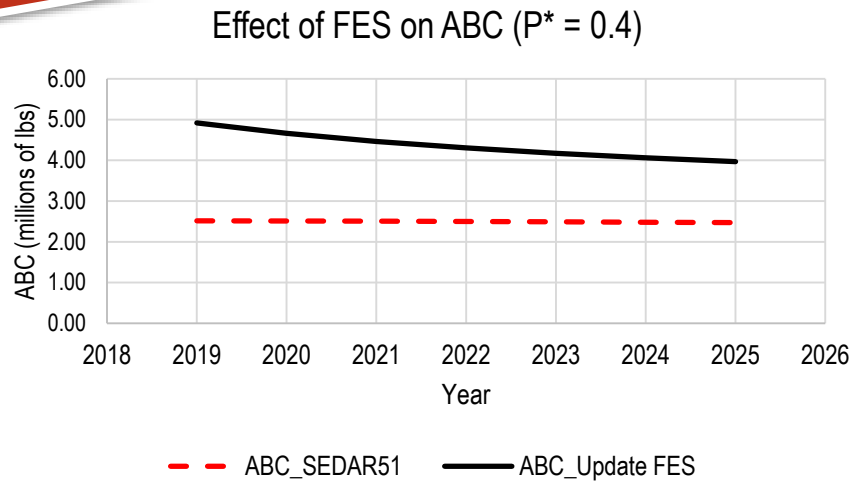


Gray Snapper: Catch Recommendations



Note: The catch recommendations are not directly comparable because they are not in the same "currency". OFLs and ABCs in FES units must be monitored in FES units, or converted to the desired monitoring "currency".



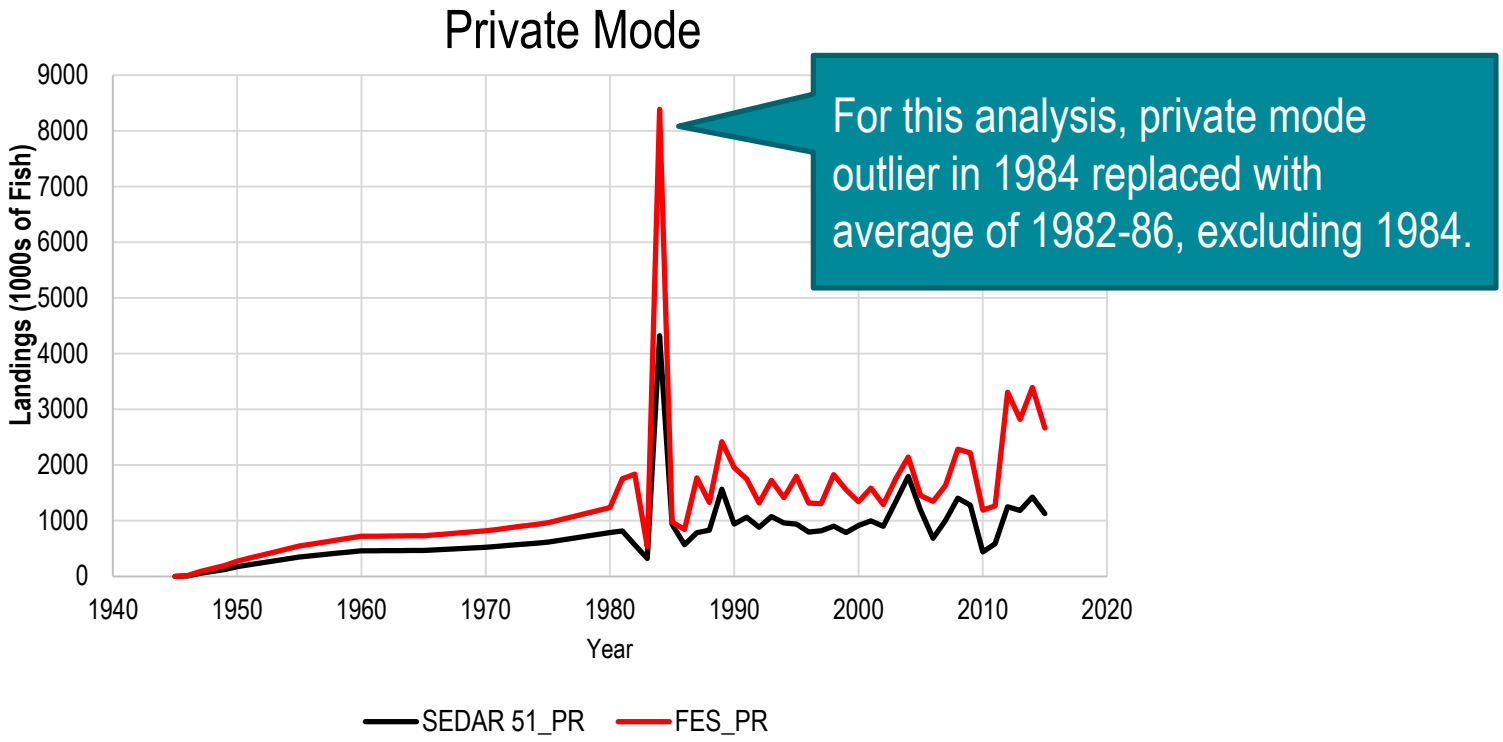


YEAR	OFL SEDAR51	ABC SEDAR51	OFL Update FES	ABC Update FES	%Diff_OFL	%Diff_ABC
2019	2.59	2.52	5.09	4.92	97%	95%
2020	2.58	2.51	4.81	4.66	87%	86%
2021	2.56	2.51	4.59	4.46	79%	78%
2022	2.55	2.50	4.42	4.31	73%	72%
2023	2.54	2.49	4.27	4.17	68%	68%
2024	2.53	2.48	4.15	4.06	64%	64%
2025	2.52	2.47	4.05	3.97	61%	61%

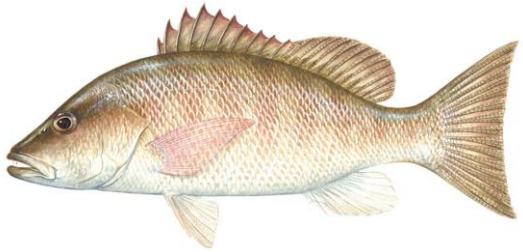
Note: The updated FES projections are intended to show the effects of updated recreational landings only. They are not official projections of Gray Snapper, and should not be used for management.

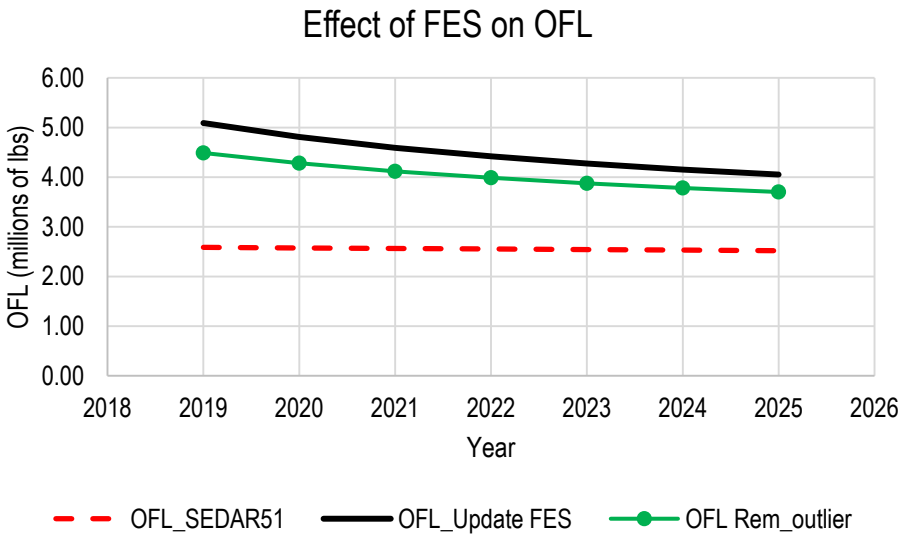
Outliers

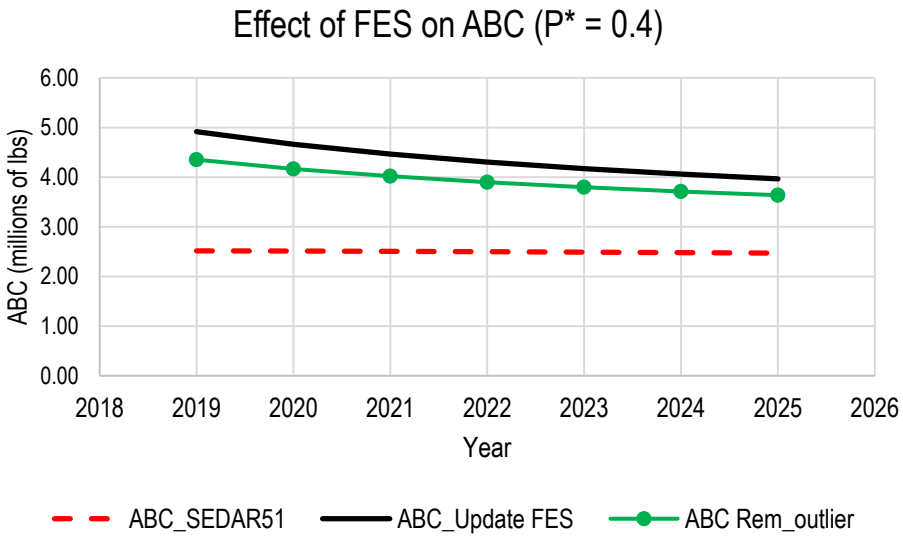
- Are stock assessment catch recommendations sensitive to early time-series outliers?



Catch Recommendations: Sensitive to early outliers?







YEAR	OFL_SEDAR51	ABC_SEDAR51	OFL_Update FES	ABC_Update FES	OFL FES_Rem_Outlier	ABC FES_Rem_Outlier
2019	2.59	2.52	5.09	4.92	4.49	4.35
2020	2.58	2.51	4.81	4.66	4.28	4.17
2021	2.56	2.51	4.59	4.46	4.12	4.02
2022	2.55	2.50	4.42	4.31	3.99	3.90
2023	2.54	2.49	4.27	4.17	3.88	3.80
2024	2.53	2.48	4.15	4.06	3.78	3.71
2025	2.52	2.47	4.05	3.97	3.70	3.64

Conclusions

- Estimates of recreational removals are generally higher for FES than MRIP-CHTS, or MRIP-APAIS.
- Annual estimates of SSB and catch recommendations (OFL, ABC) were affected by changes in FES estimates. The magnitude of the effect depended on the fraction of the total removals that are from recreational fisheries.
- ***Note: OFLs and ABCs in calculated in FES units must be monitored in FES units, or converted to the desired "currency".***