Shallow Water Grouper Management

Decision points:

- Either trust the black grouper landings data or not for the purpose of setting catch levels [information assumes these data are usable…]
- If the catch levels are trusted, should look for a stable period of landings.
- How to determine a period of stable landings? One idea, calculate derivatives for each year of a model (generalized additive model in this case) fitted to the data. Years that overlap 0 slope could be considered stable for the purpose of this analysis.
- Yes selected years as a reference period, then calculate using tier 3a or 3b. These values could be added to the OFL and ABC for scamp and yellowmouth grouper to develop a SWG grouper OFL and ABC.

Black Grouper Only

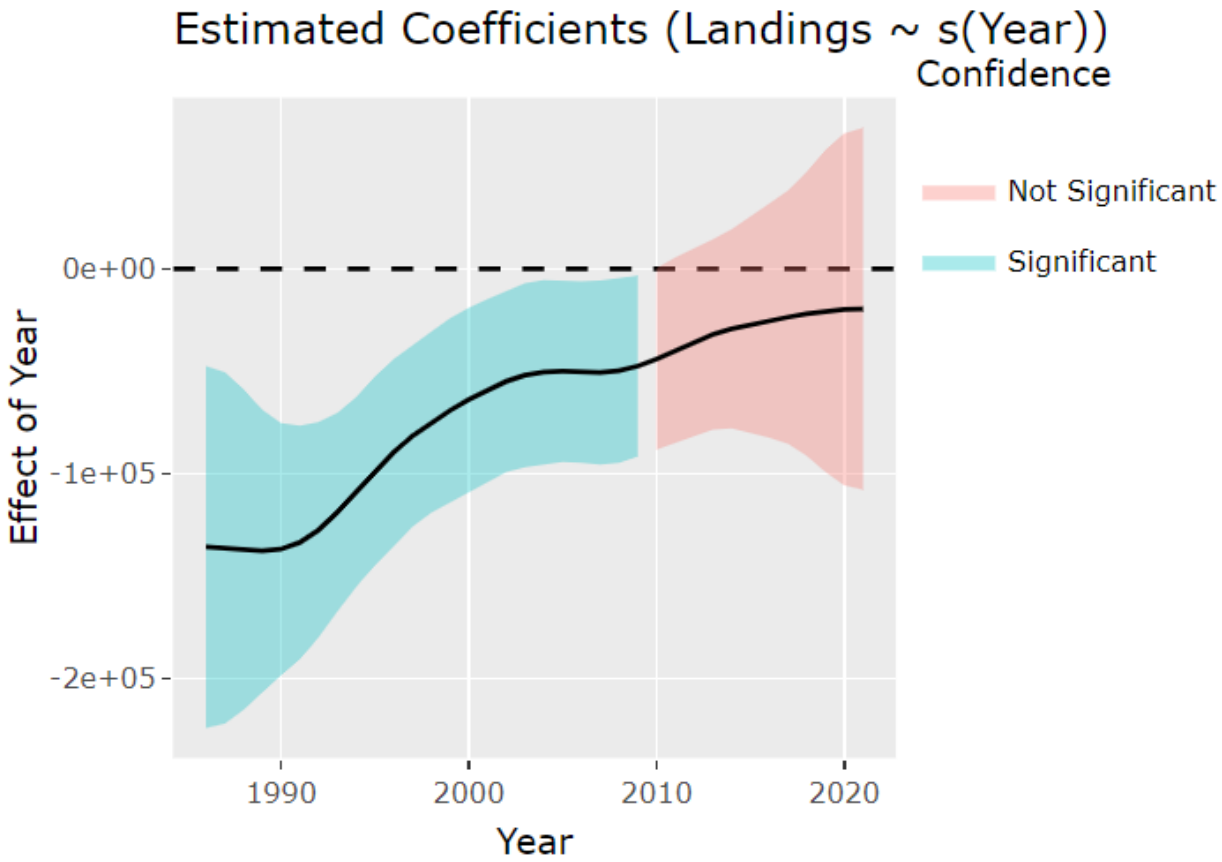


Figure 1. Plot of derivatives of landings of black grouper. Period in pink identifies period of stability.

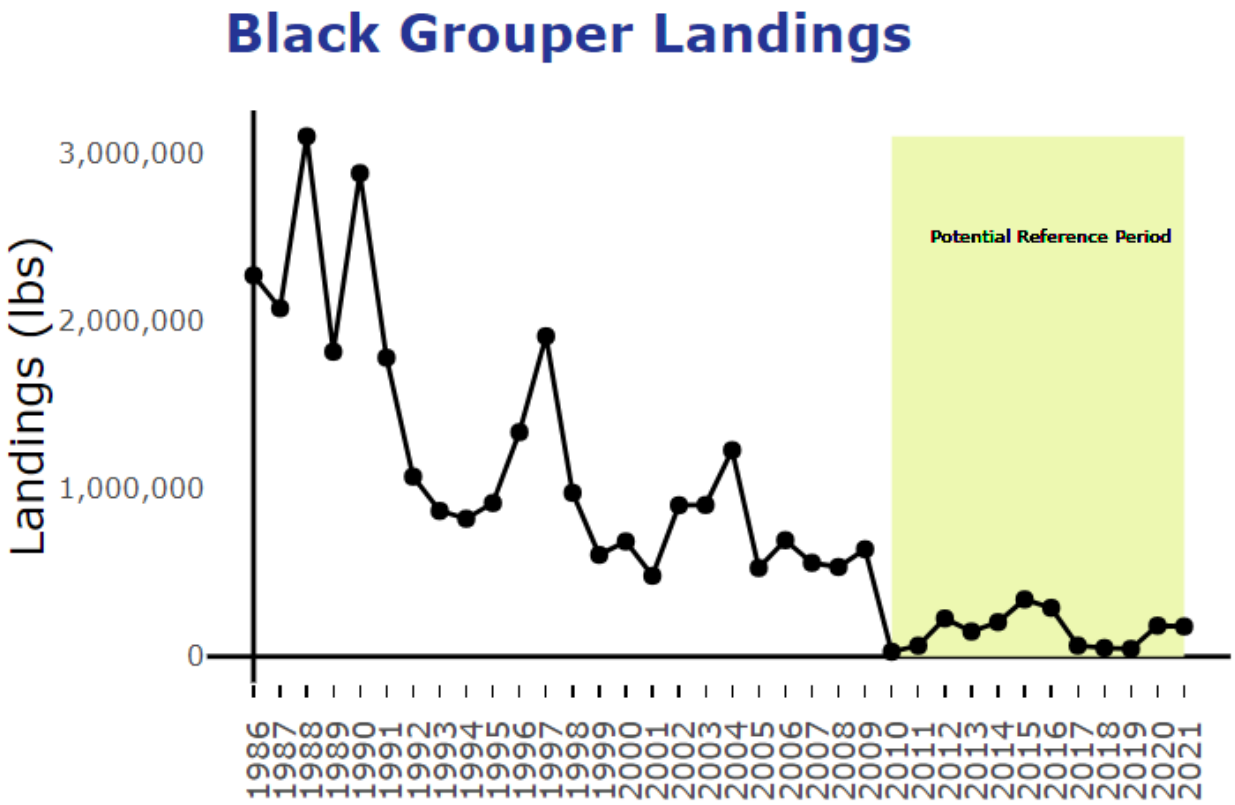


Figure 2. Plot of black grouper landings based on period of “stability” illustrated in Figure 1.

Black and Yellowfin Groupers

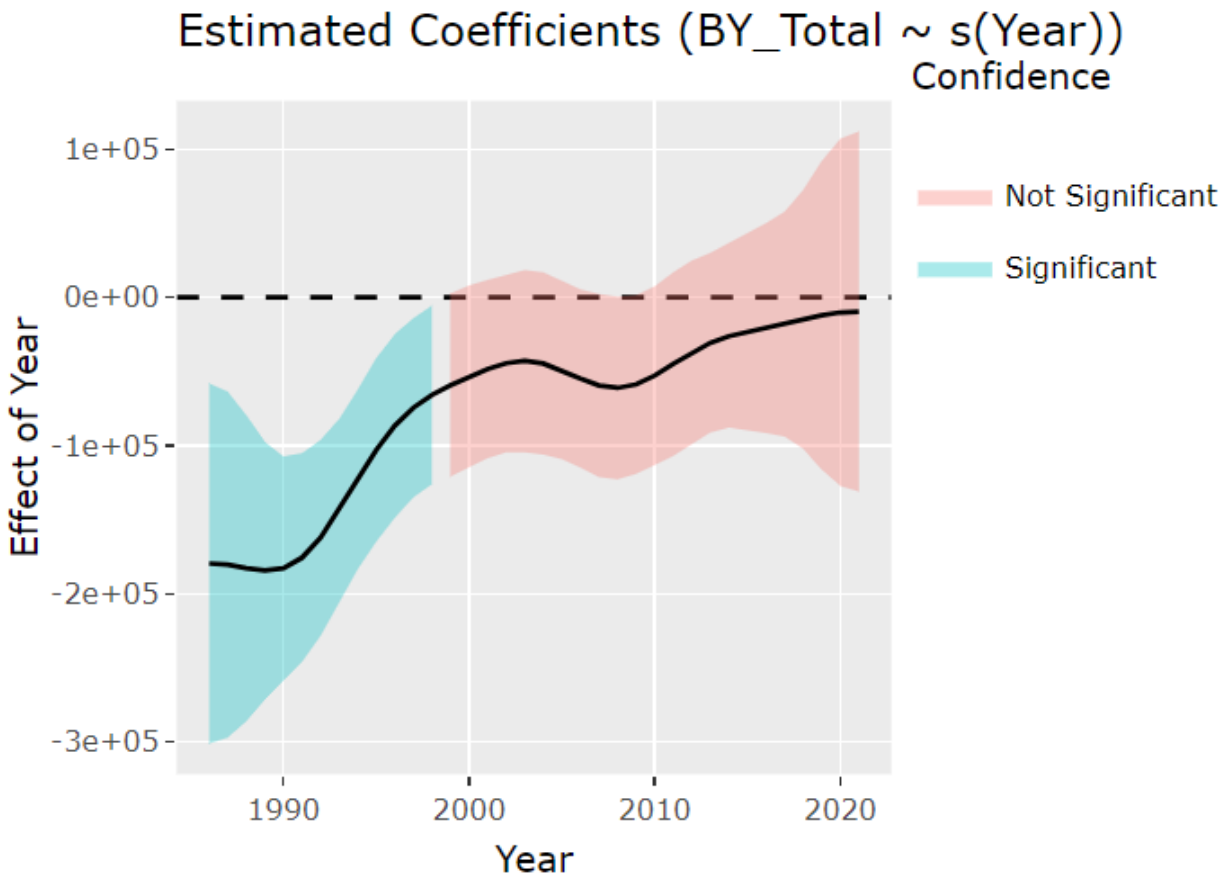


Figure 3. Plot of derivatives of landings of black grouper and yellowfin grouper combined. Period in pink identifies period of stability.

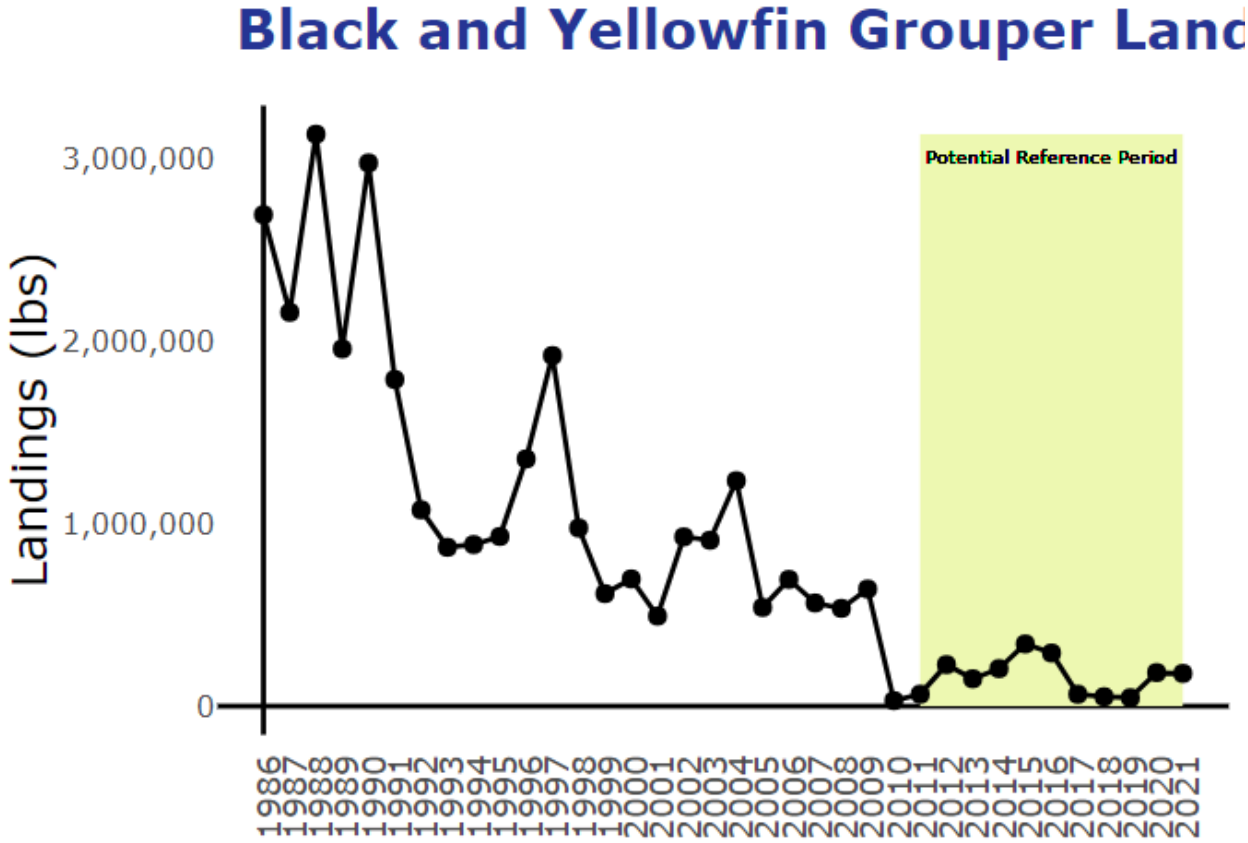


Figure 3: Black and Yellowfin Grouper (combined) landings from 1986-2021.

Table 1. Potential OFL and ABC values for black and yellowfin groupers combined using either Tier 3a or 3b for the reference years 2010-2021.

Reference Year 2010-2021

Catch Level	Tier 3a	Tier 3b	Scamp/YMG (2024)	3a Total	3b Total
OFL	359,255	153,244	271,000	630,255	424,244
ABC	307,752	114,933	203,000	510,752	317,933

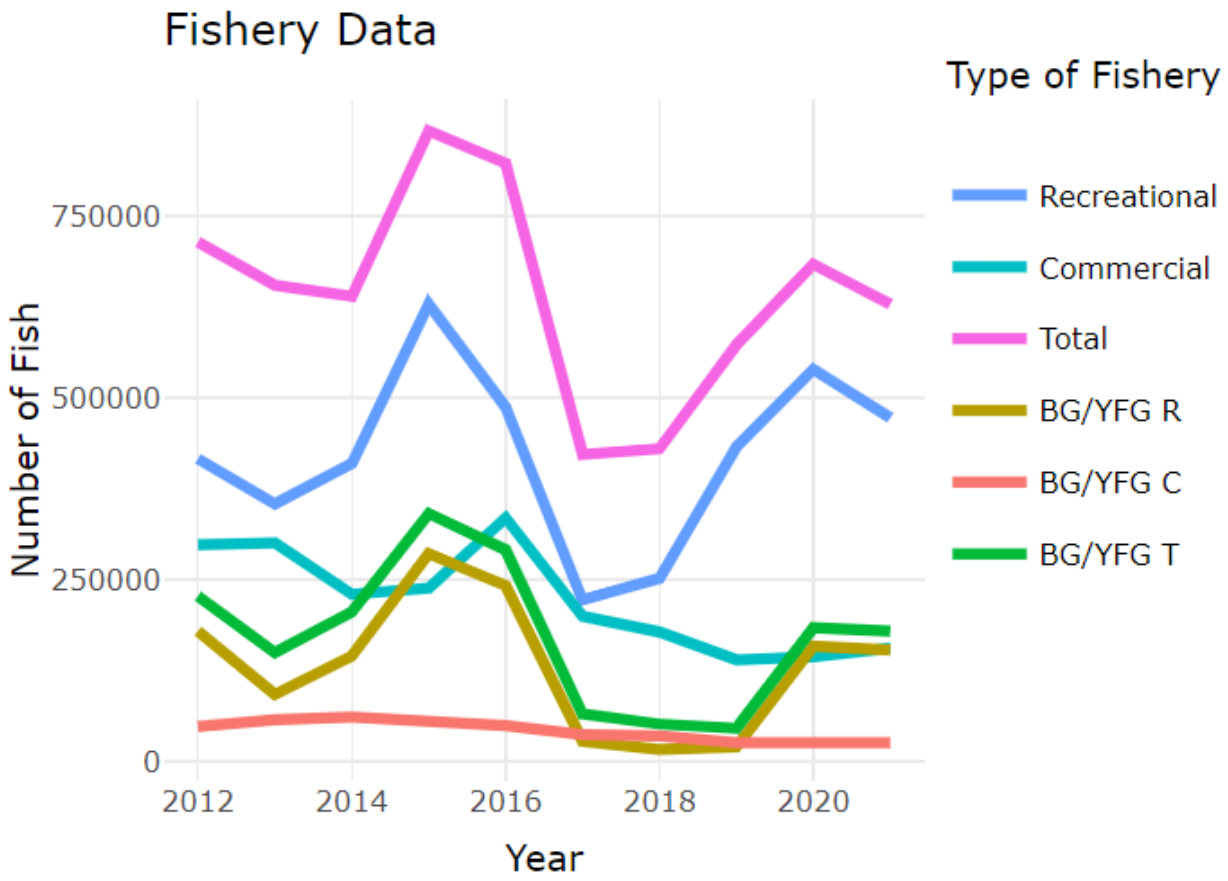
Table 2. Potential OFL and ABC values for black and yellowfin groupers combined using either Tier 3a or 3b for the reference years 1999-2021.

Reference Year 1999-2021

Catch Level	Tier 3a Black/YFG	Tier 3b Black/YFG	Scamp/YMG (2024)	3a Total	3b Total
OFL	1,086,889	421,916	271,000	1,357,889	692,916
ABC	920,646	316,437	203,000	1,123,646	519,437

Table 3. Table of Combined shallow water grouper landings 2010-2021

All SWG	Year	Rec	Com	Total	BG/YFG T
	2010	100,669	175,917	276,586	30,107
	2011	154,218	185,749	339,967	65,651
	2012	416,567	298,102	714,669	227,646
	2013	354,311	300,735	655,046	150,099
	2014	409,918	230,248	640,166	205,953
	2015	629,132	238,427	867,559	341,205
	2016	487,638	335,238	822,876	291,433
	2017	222,321	200,009	422,330	65,404
	2018	252,008	178,293	430,301	51,778
	2019	433,214	140,083	573,297	46,112
	2020	539,677	144,454	684,131	184,092
	2021	473,119	155,902	629,021	179,444
2010 to 2021 mean		372,733	215,263	587,996	153,244



Something Different:

Scamp/YMG comprise ~ 73% of SWG grouper landings between 2012-2021. Could use the ABC and OFL recommendations for Scamp YMG and scale up SWG OFL and ABC based on the proportion of landings. In effect the total OFL and ABC would be account for the scamp recommendations and assume the current proportions of other stocks would continue to be landed in the future. See table 4 below. A note, this would likely require action to constrain harvest.

Table 4. Table of potential OFL and ABC based on a proportional approach. Recent catch levels (i.e., Table 3) for SWG have exceeded these levels each year since at least 2010. Calculations assume 74% of SWG is attributed to scamp/YMG and 26% to black/YFG.

	Scamp/YMG Catch (74%)	Black/YFG (26%)	Total
OFL	271,000	95,524	366,524
ABC	203,000	71,555	274,555