

**Preliminary Information on Gulf of Mexico Lane Snapper OFL and ABC
Using MRIP_FES estimates for Recreational Landings**

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Procedures for updating lane snapper OFL and ABC using the data limited Itarget model (i.e., 'Itarget_0.5_0.7_1.0') followed Cummings and Sagarese 2019 except for the recreational landings. In this update, MRIP_FES estimates (of AB1 + B2 dead discards) were directly substituted for the MRIP estimates (of AB1+B2 dead discards) for 1986-2018 in the estimate of total landings (i.e., commercial + recreational (AB1 + B2 dead discards)). Table 1 shows the percentage difference between the two sources of AB1 + B2 dead discards (i.e., MRIP_FES vs MRIP). Figure 1 presents estimates of recreational catch for MRIP and MRIP-FES data sources. Commercial landings were identical to the commercial landings time series of Cummings and Sagarese (2019). Table 2 and Figure 2 provide the total commercial and recreational landings used in this update. The updated standardized catch per unit of effort (CPUE) index of abundance used in the Itarget model (i.e., the headboat CPUE index) was identical to that of Cummings 2019.

The Itarget_0.5_0.7_1.0 model was used to update OFL and ABC as applied in Cummings and Sagarese 2019. The application of the Itarget DLM method followed the procedures described in Cumming and Sagarese 2019 and the SEDAR 4T9 Gulf of Mexico Data Limited Stock Evaluation (SEDAR 49, SAR).

Updated OFL and ABC are presented below (Table 3 and Figure 3).

All references herein to the SEDAR 49 SAR refer to the SEDAR 49 Stock Assessment Report.

Results

Tables 1 and Figure 1 provide updated estimates of recreational landings (AB1+B2 dead discards) of Gulf of Mexico lane snapper 1986-2018 for the MRIP and the MRIP_FES data sources. Table 2 and Figure 2 shows updated total landings of commercial and recreational (MRIP_FES AB1 + B2 dead discards). Table 3 and Figure 3 provides updated OFL and ABC for lane snapper using the MRIP_FES estimates of recreational AB1+B2 dead discards in the time series of total removals as applied to the Itarget DLM method. Table 3 also provides, for comparison purposes, OFL and ABC estimates calculated in the earlier update using MRIP based estimates of recreational catch in addition to OFL and ABC estimates from the 2017 SEDAR 49 evaluation. Estimates of commercial reported landings remained unchanged from the earlier OFL/ABC update of Cummings and Sagarese (2019).

References

- Cummings, Nancie J. and Skyler Sagarese. September 2019. Updated Calculations of OFL and ABC for Gulf of Mexico Lane Snapper using the Itarget Data Limited Method (DLM). NOAA Fisheries, SEFSC, SFD, 11pp. Manuscript prepared for September 2019 GMFMC SSC Meeting, Tampa FL.
- Cummings, Nancie J.. September 2019. Updated Catch per Unit of Effort (CPUE) Indices and Effort Time-series for Lane Snapper from the Gulf of Mexico Recreational Headboat Fishery (1986 - 2018). 6pp. Manuscript prepared for September 2019 GMFMC SSC Meeting, Tampa FL.
- SEDAR 49 Stock Assessment Report. Gulf of Mexico Data-limited Species: Red Drum, Lane Snapper, Wenchman, Yellowmouth Grouper, Speckled Hind, Snowy Grouper, Almaco Jack, Lesser Amberjack. December 2016. SEDAR 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405. 618pp.

Table 1. Gulf of Mexico Lane Snapper total recreational landings (AB1 + B2 dead discards) from the MRIP and the MRIP_FES estimation sources. Source for 1986-2014 MRIP (AB1 + B2 dead discards) estimates and the commercial landings was SEDAR 49 SAR. Source for 2015-2018 MRIP landings was Ryan Rindone personal communication. Source for MRIP_FES landings was NOAA Fisheries, SEFSC, Fishery Statistics Division. Units are pounds, whole weight.

Year	MRIP_SEDAR 49	MRIP_FES	% difference MRIP-FES vs MRIP-MRFSS
1986	337,741	371,484	9.1
1987	503,523	591,689	14.9
1988	389,105	975,118	60.1
1989	726,910	2,669,926	72.8
1990	199,003	417,665	52.4
1991	689,172	2,067,207	66.7
1992	501,489	1,164,508	56.9
1993	419,689	917,953	54.3
1994	428,976	667,067	35.7
1995	462,958	589,514	21.5
1996	210,779	449,532	53.1
1997	450,618	1,359,131	66.8
1998	284,505	783,858	63.7
1999	197,024	472,977	58.3
2000	149,614	239,008	37.4
2001	346,925	823,665	57.9
2002	213,264	472,208	54.8
2003	315,508	553,157	43.0
2004	309,772	582,440	46.8
2005	368,364	592,756	37.9
2006	297,855	517,641	42.5
2007	226,375	551,619	59.0
2008	234,931	381,171	38.4
2009	292,569	539,728	45.8
2010	100,942	181,427	44.4
2011	110,074	158,236	30.4
2012	215,811	421,075	48.7
2013	269,524	472,615	43.0
2014	294,521	476,534	38.2
2015	239,579	451,991	47.0
2016	272,610	636,202	57.2
2017	542,273	1,285,436	57.8
2018	339,454.3	826,366	58.9

Table 2. Gulf of Mexico Lane Snapper landings (Commercial + Recreational (AB1+B2 dead discards) 1986-2018. Source for MRIP_FES landings was NOAA Fisheries, SEFSC, Fishery Statistics Division. Source for 1986-2014 commercial landings was SEDAR 49 SAR. Source for 2015-2018 commercial landings was Ryan Rindone personal communication Units are pounds, whole weight (ww).

Year	MRIP_FES (AB1+B2 dead discards)	Commercial	Total Landings
1986	371,484	60,174	431,658
1987	591,689	51,972	643,661
1988	975,118	57,659	1,032,777
1989	2,669,926	93,596	2,763,522
1990	417,665	81,358	499,023
1991	2,067,207	119,289	2,186,496
1992	1,164,508	99,127	1,263,635
1993	917,953	107,136	1,025,089
1994	667,067	91,729	758,796
1995	589,514	71,294	660,808
1996	449,532	54,581	504,113
1997	1,359,131	61,251	1,420,382
1998	783,858	31,750	815,608
1999	472,977	49,233	522,210
2000	239,008	47,684	286,692
2001	823,665	48,782	872,447
2002	472,208	52,970	525,178
2003	553,157	50,584	603,741
2004	582,440	50,755	633,195
2005	592,756	39,951	632,707
2006	517,641	49,340	566,981
2007	551,619	29,222	580,841
2008	381,171	25,475	406,646
2009	539,728	35,848	575,576
2010	181,427	17,262	198,689
2011	158,236	14,365	172,601
2012	421,075	28,928	450,003
2013	472,615	23,189	495,804
2014	476,534	29,948	506,482
2015	451,991	44,840	496,831
2016	636,202	34,142	670,344
2017	1,285,436	42,419	1,327,855
2018	826,366	25,974	852,340

Table 3. Updated Lane Snapper OFL and ABC (Pounds, ww) from the Itarget_0.5_0.7_1.0 data limited model using MRIP_FES landings. OFL and ABC are as defined in Cummings and Sagarese (2019)

OFL/ABC Source	ABC		OFL	SD	SE	CV
	30%	40%				
Updated Itarget0.5_0.7_1.0, Cummings January 2020: Using MRIP-FES Recreational Catch Estimates	1,068,508	1,081,903	1,094,324	50,102	501	0.046
Updated Itarget0.5_0.7_1.0, Cummings and Sagarese 2019: Using MRIPRecreational Catch Estimates	588,965	596,349	603,195	27,616	276	0.046
Itarget0.5_0.7_1.0 SEDAR 49, March 2017	355,501	360,059	364,082	16,965	170	0.047

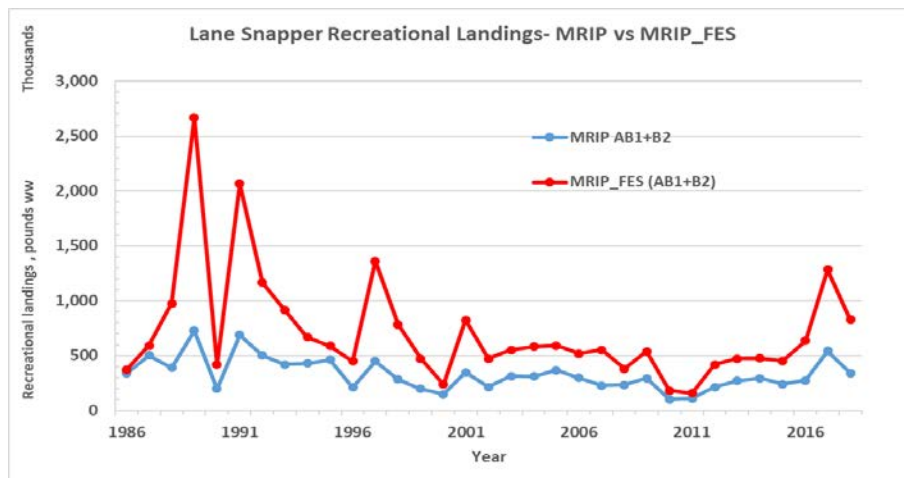


Figure 1. MRIP landings (AB1+B2 dead discards) vs MRIP_FES landings (AB1+B2 dead discards) of Gulf of Mexico Lane Snapper 1986-2018. Source for 1986-2014 MRIP landings was SEDAR 49 SAR. Source for 2015-2018 MRIP landings was Ryan Rindone personal communication. Source for MRIP_FES landings was NOAA Fisheries, SEFSC, Fishery Statistics Division. Units are pounds, whole weight.

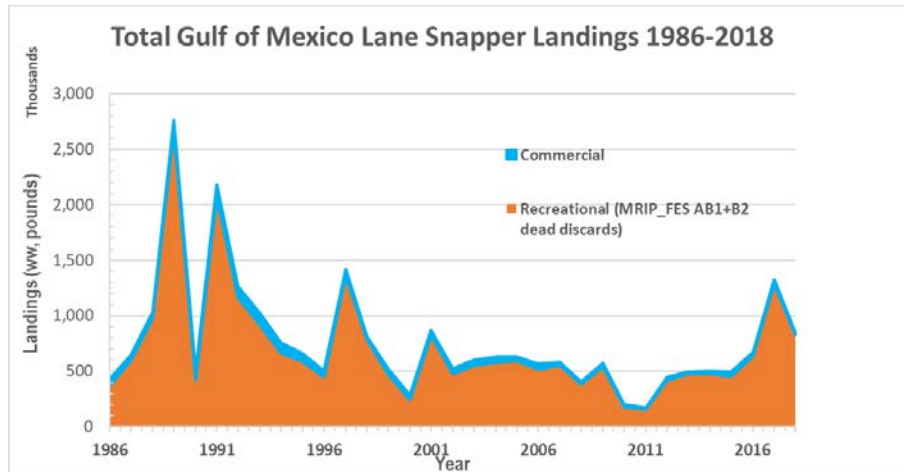


Figure 2. Updated Gulf of Mexico lane snapper landings 1986-2018. Recreational landings include estimates of AB1 + B2 dead discards. Source for 1986-2014 MRIP (AB1 + B2 dead discards) estimates and the commercial landings was SEDAR 49 SAR. Source for 2015-2018 MRIP and the 2015-2018 commercial landings was Ryan Rindone personal communication. Source for MRIP_FES landings was NOAA Fisheries, SEFSC, Fishery Statistics Division. Units are pounds, whole weight.

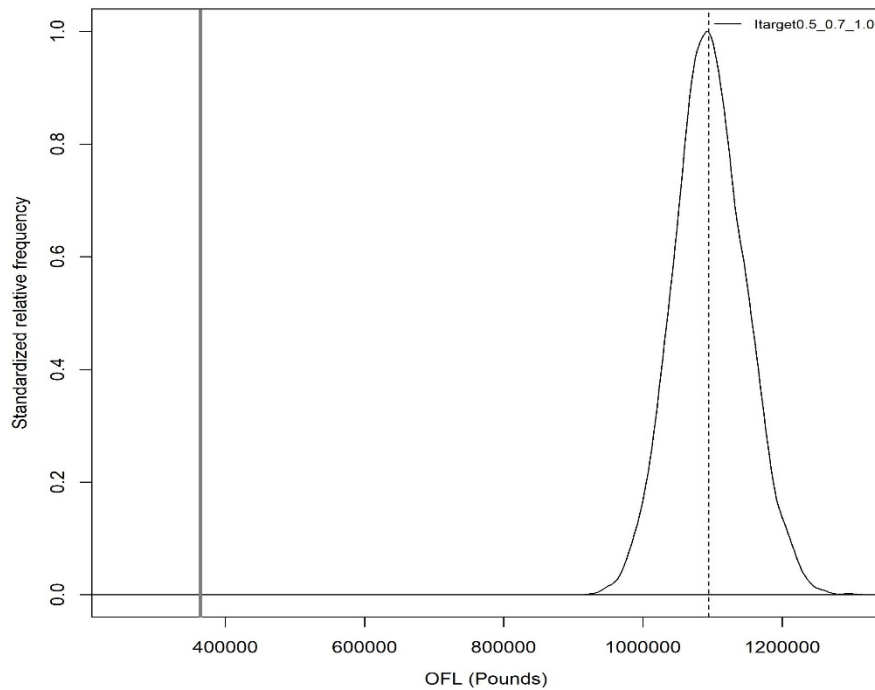


Figure 3. Standardized relative frequency of TAC for lane snapper for the updated Itarget0.5_0.7_1.0 data limited method using the Cummings (2019) updated headboat standardized CPUE index for 1986-2018 and substituting the MRIP FES recreational landings for recreational component of the total landings (Commercial landings time series remained unchanged). Thick gray line represents the calculated OFL (estimated TAC= 364,082 pounds ww) at the 50% probability of exceeding OFL from the March 2017 SSC Review of the SEDAR 49 data limited evaluation.