Summary of preliminary age and length data for U.S. Gulf of Mexico yellowmouth grouper, *Mycteroperca interstialis*, submitted for SEDAR68

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Introduction

This report documents preliminary data provided by the National Marine Fisheries Service (NMFS), Southeast Fisheries Science Center, Panama City Laboratory for U.S. Gulf of Mexico (GOM) yellowmouth grouper, *Mycteroperca interstialis*, SEDAR68. This is a brief summary of the age and length data submitted for 2020 SEDAR68 Research Track assessment by data provider, year, mode and gear, sampling program, and state landed. There are currently no histological data for the GOM yellowmouth grouper to be submitted for SEDAR68.

Methods

Age and Growth Samples

Preliminary age and length data were provided for yellowmouth grouper by the National Marine Fisheries Service (NMFS), Southeast Fisheries Science Center, Panama City Laboratory for 2020 SEDAR68 Research Track assessment. Age and length data were exported from the Age, Growth, and Reproduction database and from the Biological Sampling Database (Tables 1, 2). Data were submitted using the SEDAR Best Practices Template (SEDAR 2015). The submitted data were accompanied with a metadata description (see Appendix).

Results and Discussion

There were 663 yellowmouth grouper otoliths aged for 2020 SEDAR68 for years 1986 through 2017, where Stock ID was assigned as Gulf of Mexico (Table 3). All ages were provided by the NMFS, Panama City Laboratory. The majority of the age and length data (74.5%) were intercepted by the commercial fishery and sampled by the Trip Interview Program port agents (Tables 4, 5). The majority of yellowmouth grouper (55.6%) were landed in Louisiana (Table 6).

Table 1. List of yellowmouth grouper age and length data provided for SEDAR 68.

Data Provider Abbreviation	Data Provider Description
NMFS Panama City – AGR	National Marine Fisheries Service, Panama City Laboratory: Age, Growth and Reproduction database
NMFS Panama City – BSD	National Marine Fisheries Service, Panama City Laboratory: Biological Sampling Database

Table 2. List of yellowmouth grouper age and length data provided for SEDAR 68, where Stock ID = Gulf of Mexico.

SEDAR	Data Provided	Terminal Year	Data Provider Abbreviation	Number of records submitted
SEDAR68	1986 – 1988 1990 – 1992 1994 1996 1999 2000 – 2017	2017	NMFS Panama City – AGR	178
SEDAR68	2011 – 2017	2017	NMFS Panama City – BSD	485

Table 3. Number of yellowmouth grouper otoliths aged for SEDAR68 by year and data provider where Stock ID = Gulf of Mexico.

Year	NMFS Panama City – AGR	NMFS Panama City – BSD	Total
1986	6		14
1987	1		3
1988	1		1
1990	1		1
1991	7		10
1992	1		2
1994	5		5
1996	1		1
1999	5		5
2000	2		2
2001	5		5
2002	16		18
2003	8		8
2004	15		16
2005	3		3
2006	9		11
2007	13		14
2008	6		7
2009	12		14
2010	17		24
2011	3	17	26
2012	1	69	78
2013		44	62
2014	1	23	26
2015		40	46
2016		164	194
2017		56	67
Total	139	413	552
Percent	25.2%	74.8%	100%

Table 4. Number of yellowmouth grouper otoliths aged for SEDAR 68 by data provider, mode and gear, where Stock ID = Gulf of Mexico.

Data Provider	CM HL	CM LL	CM SP	CM UNK	CP HL	HB HL	SS HL	SS LL	SS TRW	SS UNK	TOTAL
NMFS PC –AGR	43	70		1	3	4	2	3	3	10	139
NMFS PC – BSD	360	49	3	1							413
Total	403	119	3	2	3	4	2	3	3	10	552
Percent	73.0%	21.6%	0.5%	0.4	0.5%	0.7%	0.4%	0.5%	0.5%	1.8%	100%

Table 5. Number of yellowmouth grouper otoliths aged for SEDAR68 by data provider and sampling program, where Stock ID = Gulf of Mexico.

Data Provider	EASA	GOP	HB	MRFSS	MSLAB	PCLAB	RECFIN	TIP	UTMSI	Total
NMFS PC – AGR	2	1	2	1	4	8	2	117	2	139
NMFS PC – BSD								413		413
Total	2	1	2	1	4	8	2	530	2	552
Percent	0.4%	0.2%	0.4%	0.2%	0.7%	1.4%	0.4%	96.0%	0.4%	100%

Table 6. Number of yellowmouth grouper otoliths aged for SEDAR68 by data provider and state landed, where Stock ID = Gulf of Mexico.

Data Provider	AL	FL	LA	TX	Total
NMFS PC – AGR		97	30	12	139
NMFS PC – BSD	1	67	277	68	413
Total	1	164	307	80	552
Percent	0.2%	29.7%	55.6%	14.5%	100%

Appendix. SEDAR Best Practices standardized data template, fields and definitions. Yellowmouth grouper 2020SEDAR68. Key Updated February 2020.

Field	Data Provided	Definitions and Codes
Unique_Record_Num	Yes	S68__YMG_000; Unique number per record (1 – 676)
SEDAR_Nbr	Yes	2020SEDAR68
SEDAR_Date_Submitted	Yes	Feb-2020
Stock_ID	Yes	Stock identification (e.g., Gulf of Mexico, n = 663; South Atlantic, n = 5). Boundary between Gulf of Mexico and South Atlantic – N and S of US route 1 in Florida Keys. If Monroe County without Grid or Headboat Area, Stock ID = Unknown (n = 8 records)
Data_Provider	Yes	Name of Source providing the dataset to SEDAR 1. NMFS Panama City–AGR 2. NMFS Panama City–BSD
Species	Yes	*Mycteroperca interstitialis*
Fishing_Mode	Yes	Vessel type listed for fishery-dependent and fishery-independent samples identified to the trip level CM – Commercial CP – Charter Party or Charter Boat HB – head boat SS – scientific survey
Fishery	Yes	COM – Commercial FI – Fishery-Independent REC – Recreational UNK – Unknown or is blank
Source	Yes	Program that collected a sample EASA – Expanded Annual Stock Assessment GOP – Galveston Observer Program HB - Southeast Region Headboat Survey (AGR) MRFSS – Marine Recreational Fishery Statistics Survey MSLAB -NMFS Pascagoula, MS PCLAB - NMFS Panama City, FL RECFIN - Recreational Fisheries Information Network TIP - Trip Interview Program UTMSI – University of Texas, Marine Science Institute
Sampling_Unit_ID	Yes	Interview # - identifies a trip within a Source Unique codes specific to source
Specimen_ID	Yes	Unique identifier for an individual fish within an interview
Barcode	Yes	Unique identifier for an individual fish
Catch_Month	Yes	Month sample collected
Catch_Day	Yes	Day sample collected
Catch_Year	Yes	Year sample collected
State_Landed	Yes	State abbreviations state collected: AL, EF, FL, LA, TX
County_Landed	Yes	Fishery-dependent data (COM, REC) - county landed. Fishery-independent data, reflect a specific sampling site.
Headboat_Area	Yes	Headboat Area assigned by the Source = SRHS.
NMFS_Statistical_Grid	Yes	Shrimp statistical grid including sub-areas, specific TIP
Latitude	Yes	Latitude of where fish was caught.
Longitude	Yes	Longitude of where fish was caught.

Field	Data Provided	Definitions and Codes
Gear_Code	Yes	Numeric or Alphabetic Gear Code number see TIP Gear Codes for TIP data (NMFS Panama City) see GulfFIN Gear Codes for TIP, MRFSS, RECFIN data
Gear_Name	Yes	Text description of the Gear Code see TIP Gear Codes for TIP data (NMFS Panama City) see GulfFIN Gear Codes for TIP, MRFSS, RECFIN data
Gear_Group_Code	Yes	Collapsed grouping of the Gear Code (ex: HL, LL, etc.) HL – Hand-Line LL – Long-line SP – Spear TRW – Trawl UA – Unknown/Not coded
Depth_m	Yes	Approximate depth fish caught
Jurisdictional_Waters	No	Refers to water body jurisdiction (State, Federal, Unknown)
Distance_from_Shore	Yes	Record the distance from shore where the fish was caught.
Sample_Bias_Type	Yes	Record if the sample was collected using a bias method. Historical field for Source = TIP No Bias R or Random – random S – selected (size, effort, and/or other bias type) Unknown
Smallest_Length_Unit	Yes	Record smallest length unit used in measurement (mm)
Observed_Maximum_TL_mm	Yes	Measured maximum total length (tail pinched), n = 3
Observed_Natural_TL_mm	Yes	Measured natural total length (tail not pinched), n = 7
Observed_FL_mm	Yes	Measured fork length, n = 654
Observed_SL_mm	Yes	Measured standard length, n = 4
Predicted_Maximum_TL_mm	No	
Predicted_Natural_TL_mm	No	
Predicted_FL_mm	No	Fork length to be predicted from either natural total length, maximum total length, or standard length regressions that will be calculated during SEDAR 68 Data Workshop
Predicted_SL_mm	No	
Final_MaxTL_mm	No	
Final_FL_mm	Incomplete	Final length column for analysis, will include both predicted and observed fork lengths once conversion equations are available; Observed_FL_MM currently included in data file n = 654. Records without Final_Fork_Length n = 22
Whole_Weight_g	No	Measured whole weight
Gutted_Weight_g	Yes	Measured gutted weight
Gutted_Weight_Type	Yes	Description of gutted weight recorded. GUTTED – HEAD ON UNGRADED
Predicted_Whole_Weight_g	No	Whole weight predicted from either fork length, natural or maximum total length, or standard length.
Final_Whole_Weight_g	No	Final weight column for analysis, will include both predicted and observed whole weights once conversion equations are available.
Duplicate_Length	Yes	Yes or No: Refers to whether the age and/or length are recorded in another data set.

Field	Data Provided	Definitions and Codes
		NMFS Panama City: Yes – Sources: TIP, HB/SRH, FWRI, GHC-IFQ; MRFSS, RECFIN, CO-OP-Ward (exception: W.Ward reported in TIP, see collection comments), SRH No – Sources: Alliance, CO-OP (see above comment), EASA, GOP, MSLAB, PCLAB, SBLOP, USGS, UTMSI
Number_of_Annuli	Yes	Reader(s) consensus of annuli count
Edge_Type	Yes	Reader(s) consensus of edge type NMFS Panama City (AGR and BSD) Codes Description 2_PC opaque zone on edge, no growth after last opaque zone 4_PC transclucent zone forming, new growth 1/3 to 2/3 of growth after last opaque zone 6_PC translcuent zone forming, greater than 2/3 of growth after last opaque zone
Calendar_Age	Yes	Edge Types: 2_PC, 4_PC, 6_PC If capture date < July 1 and Edge = 6_PC, Calendar_Age = # of annuli + 1; else, Calendar_Age = # of Annuli
Fractional_Age	Yes	Fractional age assigned to an individual fish based on the fraction of a year between capture date and peak spawning date (April 15th).
Sub_Sampled	Yes	Y=subsampled Specific to NMFS Panama City-AGR and NMFS Panama City-BSD from 2004-2017 and only pertains to Commercial records. Sub-sampling based on the proportion of commercial landings by year, gear, and NMFS statistical grid.
Macro_Sex	Yes	Sex identified by field sampler based on macroscopic appearance of gonad: D – did not attempt F - female M – male N – no gonad U – unknown
Histo_Sex	No	Sex assigned after histology reading of gonad tissue: F – female, M – male, T – transitional, E-early transitional (Ask Skyler)
Secondary_Sex	No	Does not apply to gonochoristic species
Repro_Phase	No	Reference document (Brown-Peterson 2011); see table in Lowerre-Barbieri et al. 2015.
Macro_Maturity	No	Maturity based on macroscopic reading of reproductive tissue; Mature or Immature based on appearance of yolked (VTG) oocytes.
Histo_Maturity	No	Maturity based on histology reading; Mature or Immature based on CA + VTG oocytes or based only on VTG.
Spawner	No	Yes: refers only to mature fish with spawning markers; leave blank if immature fish
Batch_Fecundity_Estimate	No	# of oocytes in a batch for an individual specimen
Gonad_Weight_Fresh_g	Yes	Fresh weight of gonad

Field	Data Provided	Definitions and Codes
Gonad_Weight_Formalin_g	Yes	Weight of gonad preserved in formalin
Gonad_Weight_Frozen_g	No	Frozen gonad weight
Outlier and Notes	Yes	Identify records with age, length, weight, or otolith weight not fitting normal pattern of relationships between meristic combinations for all data providers. Some data providers removed outliers prior to data submission.
Additional Fields not in SEDAR Template (these are subject to change given species specific fields)		
Samples	Yes	Biological Sample Type: NMFS Panama City – BSD Otolith NMFS Panama City – AGR O = Otolith G = Gonad
NMFS_PC_Collection_Comments	Yes	Any specific information unique to the trip or an individual, specific to data provider: NMFS Panama City_BSD and _AGR
BSD/AGR_Start_Depth_m	Yes	Specific to data provider: NMFS Panama City_BSD and _AGR
BSD/AGR_End_Depth_m	Yes	Specific to data provider: NMFS Panama City_BSD and _AGR
Sample_Method_Type	No	Specific to the Sample Method used by TIP (manual v.7). The sample method can indicate if there was a bias (sampling not random) during the time of sampling. See field IS_RANDOM Random: AT-SEA UNSORTED, LANDED UNSORTED, LANDED SORTED. Non-random: AS AVAILABLE, QUOTA SAMPLING.