NOAA FISHERIES

SEFSC, Miami

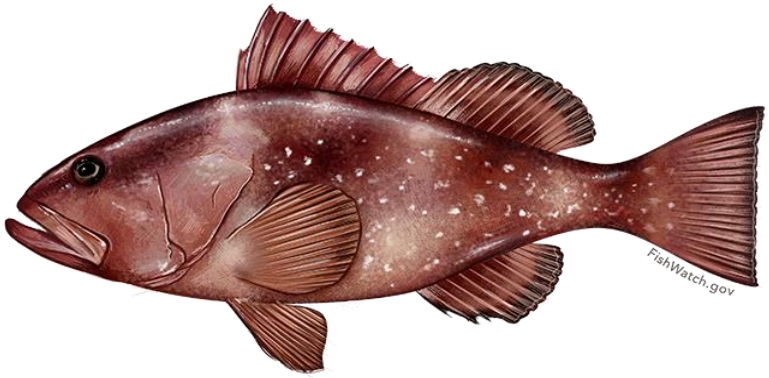
SEDAR 61: US Gulf of Mexico Red Grouper Updated Projections and Interim Analysis

Gulf of Mexico Fishery Management Council

Scientific and Statistical Committee

January 9, 2020

Outline



- Review SEDAR61 results based on revised allocations
  - IPT Discussions
    - Landings Source
    - Time Series
  - OFL/ABC using new allocations
- Interim Analysis

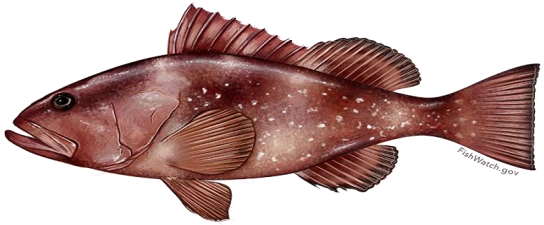
SEDAR61 Catch Advice and Revisited Allocations

SSC Decisions from September 2019

- SEDAR61 model outputs based on MRIP-FES landings
- SSC recommended setting OFL and ABC under the assumption that the 2018 red tide event was similar in magnitude to the 2005 red tide event
  - Based on 76% commercial, 24% recreational

	Catch (Lbs)	2005
OFL	5,348,324	**0.500**
	5,190,960	0.427
	5,130,000	0.399
ABC	4,900,000	0.300

Previous allocation



- From Reef Fish Amendment 30B:
  - **Preferred Alternative 3.** Establish an ***interim*** allocation of TAC between the recreational and commercial fisheries as the average share during the years 1986 through 2005
    - Used entire time series of landings at the time
    - Data derived from SEDAR12
      - Recreational data from MRFSS

Revisiting allocation following MRIP-FES Data

- Amendment 53 IPT work underway
- Discussions/Decisions:
  1. Which landings source to use?
     - Assessment landings
     - **ACL monitoring landings**
       - Considered BSIA by SEFSC
       - Uses more up-to-date methodology
         - E.g., http://sedarweb.org/docs/wpapers/S67_WP_06_MRIP_weight_Sample_size.pdf

Revisiting allocation following MRIP-FES Data

- Amendment 53 IPT work underway
- Discussions/Decisions:
  2. Which year range to use?

Landings Time Series	Comm %	Rec %	Justification
1986-2005	59.3	40.7	Entire time series used in past
1986-2009	60.5	39.5	Time series pre-IFQ
1986-2018	59.7	40.3	Entire time series at present

Revised OFL and ABC based on new allocation

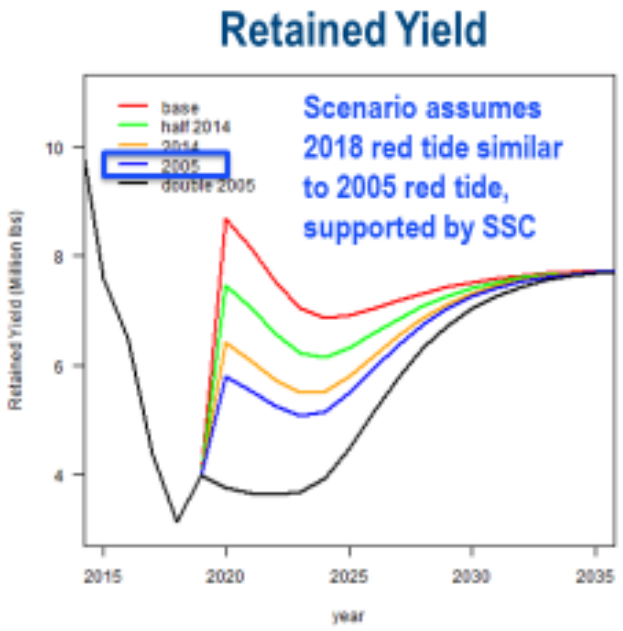
- $F_{30\%SPR}$ with 2018 red tide equal to 2005

Landings Time Series	Comm %	Rec %	Million pounds gutted weight			
			OFL (P* = 0.5)	P*=0.427	P*=0.4	P*= 0.3
1986-2005	59.3	40.7	4.66	4.52	4.47	4.26
1986-2009	60.5	39.5	4.70	4.56	4.51	4.30
1986-2018	59.7	40.3	4.67	4.53	4.48	4.28

Interim Analysis

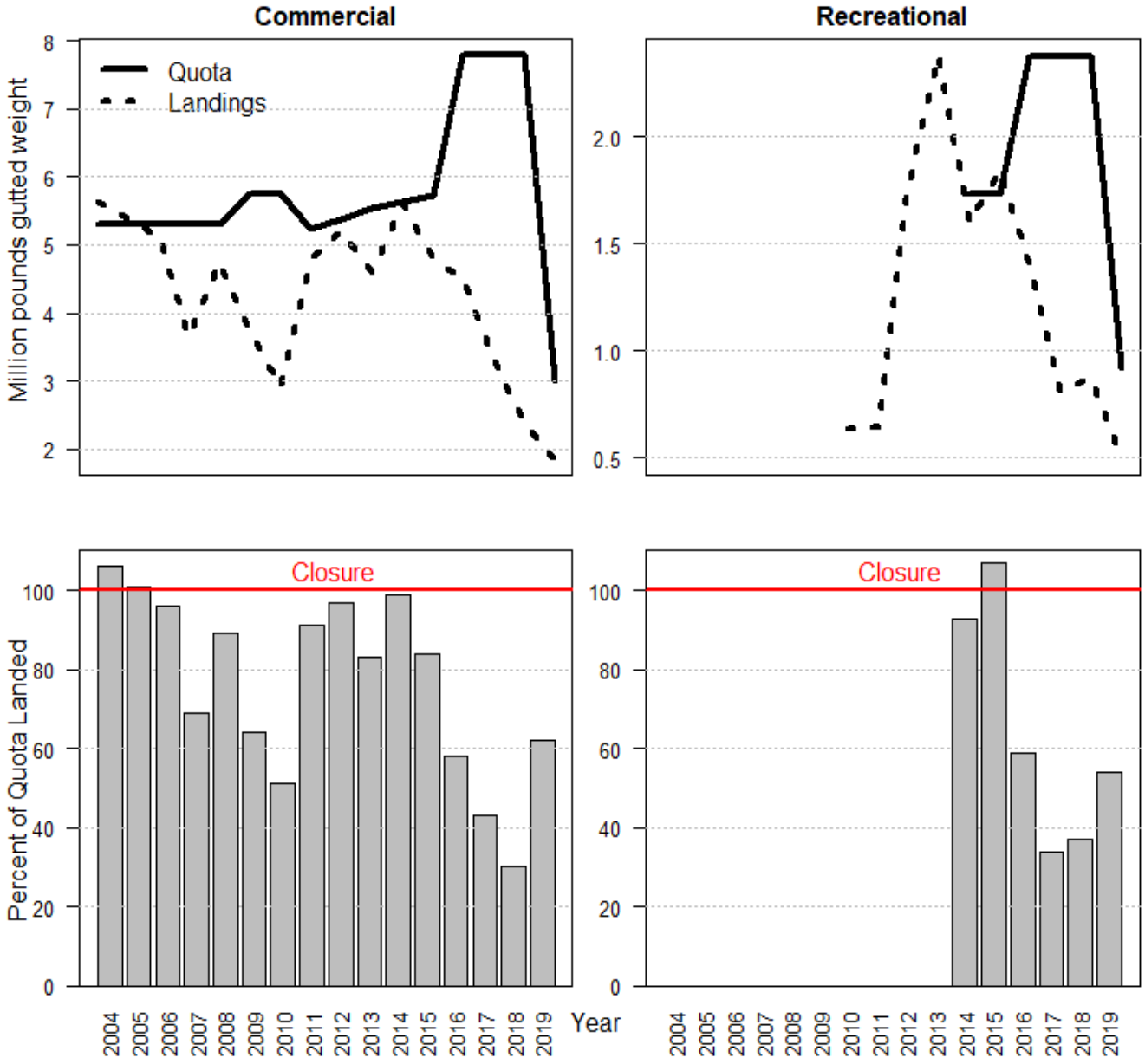
Interim Assessment (IA)

- First red grouper IA conducted in October 2018
- Updated red grouper IA to adjust harvest recommendations based on current stock conditions
  - SEDAR61 terminal year: 2017
  - Made assumptions in projections regarding the impact of 2018 red tide



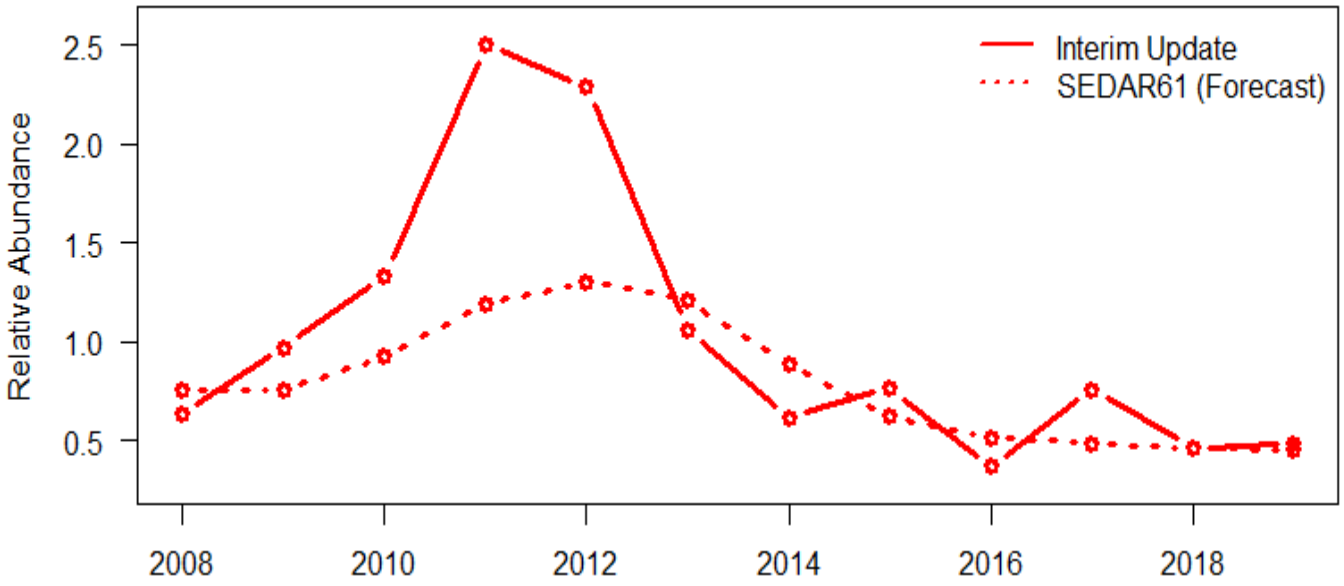
Cause for Concern

Commercial data from 2010 through 2018 were obtained from the IFQ Quotas and Catch Allowances, accessed December 4, 2019 (*https://portal.southeast.fisheries.noaa.gov/reports/cs/CommercialQuotasCatchAllowanceTable.pdf*), remaining years were obtained from the Gulf of Mexico Historical Commercial Landings and Annual Catch Limits (ACLs), updated November 7, 2018 (*https://www.fisheries.noaa.gov/southeast/gulf-mexico-historical-commercial-landings-and-annual-catch-limit-monitoring/gulf_commercial_historical.pdf*). Recreational data from 2010 through 2017 were obtained from recreational historical landings, updated March 9, 2019 (*https://www.fisheries.noaa.gov/southeast/recreational-fishing-data/gulf-mexico-historical-recreational-landings-and-annual-catch*), data from 2018 and 2019 (through June) were obtained December 4, 2019 from *https://www.fisheries.noaa.gov/southeast/2018-and-2019-gulf-mexico-recreational-landings-and-annual-catch-limits-acls-and-annual*.



Index of abundance: NMFS Bottom Longline

- Compare where we are now to where we want to be
  - Where we are now = Observed index value
  - Where we want to be = Forecasted index value
    - Good agreement between values



Harvest Control Rule (HCR)

$$ABC_y = ABC_{assess}\left(\frac{O_y + \beta}{F_y + \beta}\right)$$

- Where ABC_{assess}= 4.9* million pounds gutted weight

  *Sep 2019 SSC recommendation (76%com,24%rec)

  O_y= Observed index value in year y,

  F_y = Forecasted index value in year y,

  β= Scalar to adjust responsiveness of HCR x SE of index

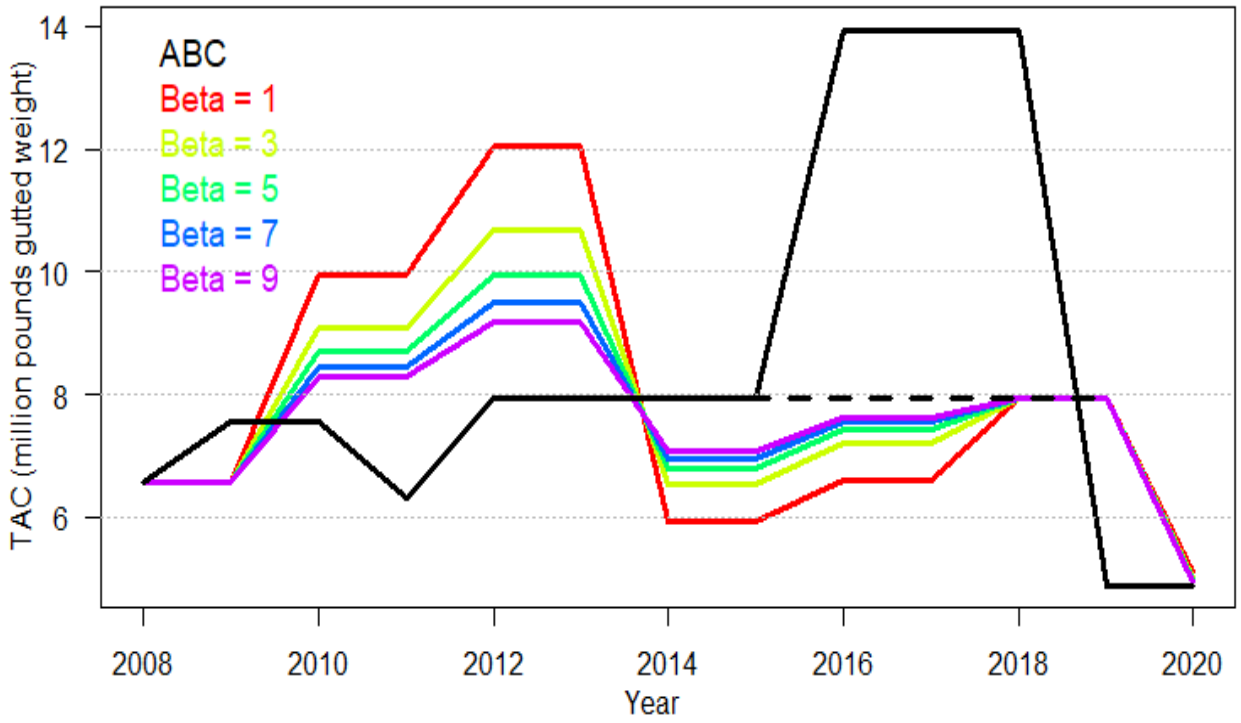
- Changes to ABC only implemented every other year

Effect of β

ABC_{assess}= 4.9* million pounds gutted weight
*Sep 2019 SSC recommendation (76%com,24%rec)

- Previously recommended: (1) excluding ABC change following SEDAR42; and (2) β = 1
  - Low β tracks index more closely
  - High β tracks ABC

β	Adj ABC (million pounds gutted weight)
1	**5.097**
3	5.004
5	4.971
7	4.954
9	4.943



The dashed black line indicates ignoring the ABC increase that resulted from SEDAR42

Ongoing Work:

- Finish MSE development
  - MSE will be used to select HCR/index pair that best achieves management goals
- Design multitude of HCR's with stakeholder input
- Test HCR/Index combinations to identify optimum HCR

Questions?

Thank you to all SEDAR61 data providers and for your attention!

NMFS Bottom Longline Index

Survey Year	Frequency	*N*	Delta-Lognormal Index	Scaled Index (mean = 1)	Coefficient of Variation	Lower Confidence Level	Upper Confidence Level
2001	0.215	93	0.764	0.827	0.290	0.468	1.460
2002							
2003	0.342	117	1.005	1.088	0.202	0.729	1.624
2004	0.418	98	1.625	1.760	0.193	1.201	2.578
2005	0.250	40	0.559	0.606	0.407	0.277	1.326
2006	0.282	39	0.530	0.574	0.392	0.269	1.224
2007	0.190	42	0.842	0.911	0.465	0.376	2.208
2008	0.267	60	0.582	0.630	0.323	0.336	1.182
2009	0.349	63	0.897	0.971	0.264	0.578	1.633
2010	0.328	67	1.231	1.333	0.266	0.790	2.248
2011	0.402	122	2.310	2.501	0.181	1.745	3.585
2012	0.469	49	2.110	2.285	0.255	1.384	3.772
2013	0.340	47	0.979	1.060	0.306	0.583	1.927
2014	0.262	42	0.568	0.615	0.383	0.293	1.289
2015	0.245	53	0.706	0.764	0.361	0.379	1.540
2016	0.184	49	0.339	0.367	0.436	0.159	0.846
2017	0.318	44	0.701	0.759	0.342	0.390	1.477
2018	0.184	49	0.428	0.463	0.427	0.204	1.050
2019	0.205	39	0.448	0.486	0.461	0.202	1.167