

SEDAR

SouthEast Data, Assessment, and Review

*South Atlantic Fishery Management Council
Gulf of Mexico Fishery Management Council
Caribbean Fishery Management Council
NOAA Fisheries
Atlantic States Marine Fisheries Commission
Gulf States Marine Fisheries Commission*

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DRAFT Terms of Reference Gulf of Mexico Red Grouper Assessment Update

1. Update the approved SEDAR 12 red grouper model base configuration, forward projection catch-age model using ASAP with data through 2008. This configuration includes time-varying catchability, adjusted natural mortality scaling, incorporation of the NMFS longline survey, and reduced influence by the derived discard age composition.
2. Document any changes or corrections made to input datasets and tabulate complete updated input datasets. Provide tables of commercial and recreational landings and discard in pounds gutted weight. Clarify units of measurement in all tables.
3. Estimate and provide complete updated tables of stock parameters.
4. Update measures of uncertainty and provide representative measures of precision for stock parameter estimates.
5. Update estimates of stock status and SFA parameters; provide declarations of stock status relative to current SFA criteria.
6. Specify OFL, and may recommend a range of ABC for review by the SSC in compliance with ACL guidelines.
7. Evaluate future stock status for 2009-2014 according to the specifications in Table 2.
8. Review the research recommendations from the previous assessment, note any which have been completed, and make any necessary additions or clarifications.
9. Develop a stock assessment workshop report to fully document the input data, methods, and results of the stock assessment update.

NOTES:

This update assessment is intended to update those population and status measures approved for the original assessment to and provide OFL and a range of ABC recommendations in compliance with ACL guidelines. A specific ABC recommendation will be the responsibility of the SSC, in compliance with Section 302 of the Magnuson-Stevens Act.

It is not the intent of this update to resolve any critical issues identified in the initial SEDAR 12 assessment.

Council requests reporting of both commercial and recreational landings in pounds gutted weight.

Table 1. Required SFA and MSRA Evaluations

Criteria	Definition	Current Value
Mortality Rate Criteria		
F_{MSY} or proxy	F _{MSY}	0.21
MFMT	F _{MSY}	0.21
F_{OY}	75% of F _{MSY}	0.16
F_{CURRENT}	SEDAR 12 current = 2004	
F_{CURRENT}/MFMT	SEDAR 12 current = 2004	
Base M		0.14
Biomass Criteria		
SS_{MSY} (egg wt.)	Equilibrium SSB @ F _{MSY}	591 MT
MSST (egg wt.)	(1-M)*SSB _{MSY} M=0.14	509 MT
SS_{CURRENT}		
SS_{CURRENT}/MSST		
Equilibrium MSY	Equilibrium Yield @ F _{MSY}	7.72 mp gw
Equilibrium OY	Equilibrium Yield @ F _{OY}	7.57 mp gw
OFL	Annual Yield @ F _{MFMT}	
	2009	
	2010	
	2011	
	2012	
	2013	
	2014	
Annual OY (ACT)	Annual Yield @ F _{OY}	
	2009	
	2010	
	2011	
	2012	
	2013	
	2014	
	Annual Yield @ 65% MFMT	
Alternative ACT:	Annual Yield @ 75% MFMT	
	Annual Yield @ 85% MFMT	
Generation Time		n/a
Rebuild Time	(if B ₂₀₀₆ <MSST)	
Tmin	@ F=0	n/a
Midpoint	mid of Tmin, Tmax	n/a
Tmax	if Tmin>10y, Tmin + 1 Gen	n/a
ABC	Recommend Range	

Values provided are from the SEDAR 12 Advisory Report - Gulf of Mexico Red Grouper.

All mortality rate and biomass values should be accompanied by 80 percent confidence intervals or other appropriate measure of precision where possible.

Table 2. Projection Scenario Details

2.1 Initial Assumptions

OPTION	Value
2009 landings target	7.57 mp gw
2009+ Recruits	TBD by Panel
2009+ Selectivity	TBD by Panel
Projection Period	6 yrs (2009-2014)
1 st year of change F, Yield	2010

2.2 Scenarios to Evaluate (to be modified by SSC)

1. Landings fixed at 2007 target.
2. $F_{MSY} = F_{MAX}$
3. $F_{OY} = 65\% F_{MSY}$
4. $F_{OY} = 75\% F_{MSY}$
5. $F_{OY} = 85\% F_{MSY}$
6. $F_{REBUILD}$ (if necessary)
7. $F=0$ (if necessary)

2.3 Output values

1. Landings
2. Discard
3. Exploitation
4. F/F_{MSY}

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DRAFT Terms of Reference Gulf of Mexico Gag Assessment Update

1. Update the approved SEDAR 10 gag model base configuration, forward projection catch-age model using CASAL with data through 2008. This configuration includes time-varying catchability, adjusted natural mortality scaling, incorporation fishery-dependent indices of abundance from commercial handline, commercial longline, recreational headboat, and MRFSS, and fishery-independent indices of abundance from the SEAMAP video and SEAMAP Copperbelly video indices. Plus Beverton-Holt spawner-recruit relationship.
2. Document any changes or corrections made to input datasets and tabulate complete updated input datasets. Provide tables of commercial and recreational landings and discard in pounds gutted weight. Clarify units of measurement in all tables.
3. Estimate and provide complete updated tables of stock parameters.
4. Update measures of uncertainty and provide representative measures of precision for stock parameter estimates.
5. Update estimates of stock status and SFA parameters; provide declarations of stock status relative to current SFA criteria.
6. Specify OFL, and may recommend a range of ABC for review by the SSC in compliance with ACL guidelines.
7. Evaluate future stock status for 2009-2014 according to the specifications in Table 2.
8. Review the research recommendations from the previous assessment, note any which have been completed, and make any necessary additions or clarifications.
9. Develop a stock assessment workshop report to fully document the input data, methods, and results of the stock assessment update.

NOTES:

This update assessment is intended to update those population and status measures approved for the original assessment to and provide OFL and a range of ABC recommendations in compliance with ACL guidelines. A specific ABC recommendation will be the responsibility of the SSC, in compliance with Section 302 of the Magnuson-Stevens Act.

It is not the intent of this update to resolve any critical issues identified in the initial SEDAR 10 assessment.

Council requests reporting of both commercial and recreational landings in pounds gutted weight.

Table 1. Required SFA and MSRA Evaluations

Criteria	Definition	Current Value
Mortality Rate Criteria		
F_{MSY} or proxy	F _{MAX}	0.20
MFMT	F _{MAX}	0.20
F_{OY}	75% of F _{MAX}	0.15
F_{CURRENT}	SEDAR 10 current = 2004	0.40
F_{CURRENT}/MFMT	SEDAR 10 current = 2004	
Base M		0.15*
Biomass Criteria		
SSB_{MAX}	Equilibrium SSB @ F _{MAX}	27.32 mp gw
MSST	(1-M)*SSB _{MAX} M=0.15	23.22 mp gw**
SSB_{CURRENT}	SEDAR 10 current = 2004	23.10 mp gw**
SS_{CURRENT}/MSST	SEDAR 10 current = 2004	0.99**
Equilibrium MSY	Equilibrium Yield @ F _{MSY}	4.94 mp gw
Equilibrium OY	Equilibrium Yield @ F _{OY}	4.82 mp gw***
OFL	Annual Yield @ F _{MFMT}	
	2009	
	2010	
	2011	
	2012	
	2013	
	2014	
Annual OY (ACT)	Annual Yield @ F _{OY}	
	2009	
	2010	
	2011	
	2012	
	2013	
	2014	
Alternative ACT:	Annual Yield @ 65% MFMT	
	Annual Yield @ 75% MFMT	
	Annual Yield @ 85% MFMT	
Generation Time		n/a
Rebuild Time	(if B ₂₀₀₆ <MSST)	
Tmin	@ F=0	n/a
Midpoint	mid of Tmin, Tmax	n/a
Tmax	if Tmin>10y, Tmin + 1 Gen	n/a
ABC	Recommend Range	

* SEDAR 10 used a base M of 0.14, but in June 2008 the Gulf Council directed that a base M of 0.15 be used in future assessments.

** Calculated value using $M = 0.15$

*** From Amendment 30B

Values provided are from the September 2007 Final Model Projections based on recommendations of the SEDAR 10 and 12 Evaluation Panel Report except where noted.

All mortality rate and biomass values should be accompanied by 80 percent confidence intervals or other appropriate measure of precision where possible.

Table 2. Projection Scenario Details

2.1 Initial Assumptions

OPTION	Value
2009 landings target	3.38 mp gw
2010 landings target	3.62 mp gw
2011+ landings target	3.82 mp gw
2009+ Recruits	TBD by Panel
2009+ Selectivity	TBD by Panel
Projection Period	6 yrs (2009-2014)
1 st year of change F, Yield	2010

2.2 Scenarios to Evaluate (to be modified by SSC)

1. Landings fixed at 2007 target.
2. $F_{MSY} = F_{MAX}$
3. $F_{OY} = 65\% F_{MSY}$
4. $F_{OY} = 75\% F_{MSY}$
5. $F_{OY} = 85\% F_{MSY}$
6. $F_{REBUILD}$ (if necessary)
7. $F=0$ (if necessary)

2.3 Output values

1. Landings
2. Discard
3. Exploitation
4. F/F_{MSY}

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DRAFT Terms of Reference Gulf of Mexico Red Snapper Assessment Update

1. Update the approved SEDAR 7 base assessment configuration and assessment sensitivities used to illustrate uncertainty, for Gulf of Mexico red snapper with data through 2008.
2. Document the additional annual observations and noted any changes or corrections made to the input datasets used in the benchmark assessment and tabulate complete updated input datasets for the update. Clarify units of measurement in all Tables.
3. Estimate and provide complete updated tables of population parameters.
4. Update measures of uncertainty and provide representative measures of precision for stock parameter estimates.
5. Update estimates of stock status and SFA parameters; provide declarations of stock status relative to current SFA criteria (See Table 1 for complete list of required values.)
6. Specify OFL, and recommend a range of ABC for review by the SSC in compliance with ACL guidelines.
7. Evaluate future stock status for 2009-2014 according to the specifications in Table 2.
8. Review the research recommendations from the previous assessment, note any which have been completed, and make any necessary additions or clarifications.
9. Prepare a stock assessment updated report to fully document the input data, methods, and results of the stock assessment update.
10. Optional: Addition of NMFS Pascagoula red snapper bottom longline survey of eastern and western Gulf of Mexico (1999-2007).
11. Optional: Addition of Gazey, W.J., B.J. Gallaway, J.C. Cole, D.A. Fournier. (accepted 2 Jun 2008). Age Composition, Growth and Density-Dependent Mortality in Juvenile Red Snapper Estimated from Observer Data from the Gulf of Mexico Penaeid Shrimp Fishery. North American Journal of Fisheries Management.

NOTES:

This update assessment is intended to update those population and status measures approved for the original assessment to provide OFL and a range of ABC recommendation in compliance with ACL guidelines. A specific ABC recommendation will be the responsibility of the SSC, in compliance with Section 302 of the Magnuson-Steven Act.

It is not the intent of this update to address all issues noted in the original SEDAR 7 benchmark assessment.

Table 1. Required SFA and MSRA Evaluations

Criteria	Definition	Current Value
Mortality Rate Criteria		
F_{MSY} or proxy	F_{MSY}	0.092
MFMT	F_{MSY}	0.092
F_{OY}	$0.75 * F_{MSY}$	0.069
$F_{CURRENT}$	SEDAR 7 current=2003	
$F_{CURRENT}/MFMT$	SEDAR 7 current=2003	3.8
Base M		0.1
Biomass Criteria		
S_{MSY}	See definition below	
MSST	$M=0.1 (1-M) * S_{MSY}$	
$S_{CURRENT}$		
$S_{CURRENT2003}/S_{msy}$		0.06
Equilibrium MSY	Equilibrium Yield @ F_{MSY}	25.4 mp wwt
Equilibrium OY	Equilibrium Yield @ F_{OY}	
OFL	Annual Yield @ F_{MFMT}	
	2009	
	2010	
	2011	
	2012	
	2013	
	2014	
Annual OY (ACT)	Annual Yield @ F_{OY}	
	2009	
	2010	
	2011	
	2012	
	2013	
	2014	
Alternative ACT:	Annual Yield @ 65% MFMT	
	Annual Yield @ 75% MFMT	
	Annual Yield @ 85% MFMT	
Generation Time		
Rebuild Time	(if $B_{2006} < MSST$)	
Tmin	@ $F=0$	12 years (2012)
Midpoint	mid of Tmin, Tmax	22 years (2022)
Tmax	if $Tmin > 10y$, $Tmin + 1$ Gen	32 years (2032)
ABC	Recommend Range	

The spawning stock estimates, S , are *not* the actual number of eggs produced by the population, but should be interpreted as the effective number of fully-productive spawners, *i.e.* the number of eggs produced by the spawning population relative to the number that would have been produced if all of the spawners were 30 years old (SEDAR 7).

Values provided are from the SEDAR 7 Assessment Final Report-Gulf of Mexico Red Snapper.

All mortality rate and biomass values should be accompanied by 80 percent confidence intervals or other appropriate measures of precisions where possible.

Table 2. Projection Scenario Details

2.1 Initial Assumptions

OPTION	Value
2009 landings target	5 mp wwt
2007+ Recruits	TBD by Panel
2007+ Selectivity	TBD by Panel
Projection Period	10 yrs (2009-2014)
1 st year of change F, Yield	2010

2.2 Scenarios to Evaluate (to be modified by SSC)

1. Landings fixed at 2007 target.
2. $F_{MSY} = F_{MAX}$
3. $F_{OY} = 65\% F_{MSY}$
4. $F_{OY} = 75\% F_{MSY}$
5. $F_{OY} = 85\% F_{MSY}$
6. $F_{REBUILD}$ (if necessary)
7. $F=0$ (if necessary)

2.3 Output values

1. Landings
2. Discard
3. Exploitation
4. F/F_{MSY}