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Options for Possible Reopening of South Atlantic Red Snapper

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Why Reopen?

- Allows for additional collection of fishery-dependent age data
- Economic boost to fishermen and communities
- Would provide useful information on effort and catch for future reopenings
- Meets Council intention to reopen when feasible

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Mortality Estimates

- Self-reported data sources:
  - Commercial logbooks
  - MRFSS
  - Southeast Headboat Survey
- Estimates include both landings and dead discards
- Discard mortality rates
  - comm = 0.48, private = 0.39, for-hire = 0.41
- Estimates uncertain; possibly biased

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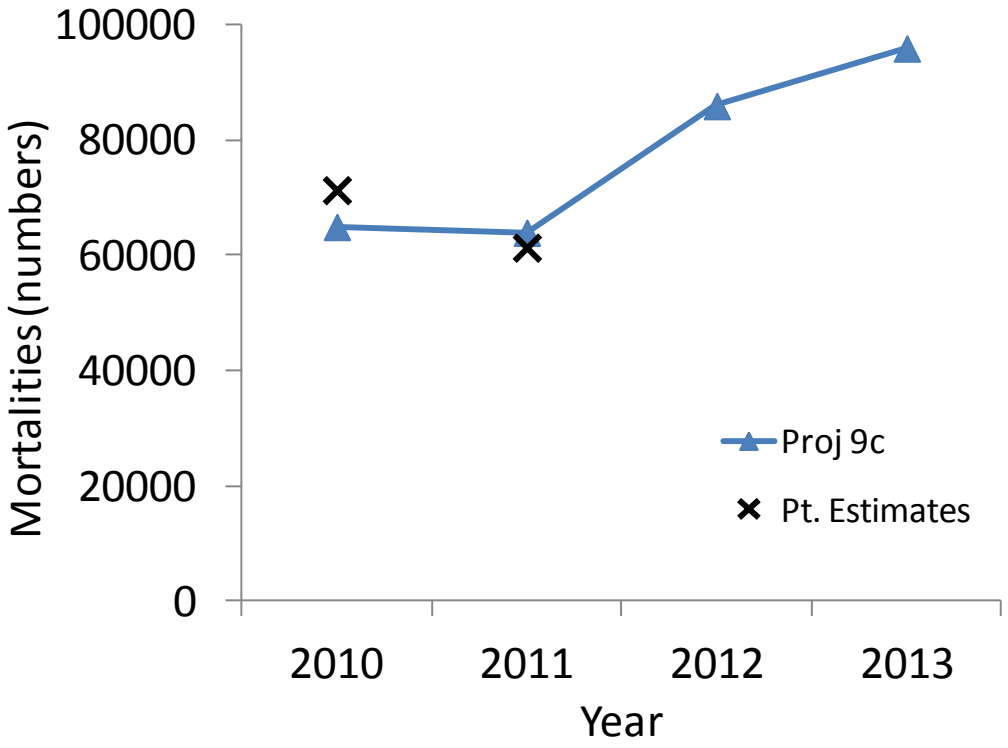
Mortality Estimates

- Mortality estimates for 2010 and 2011 are comparable to SEDAR-24 projections

	Mortalities (n)	
Year	Projected	Estimated
2010	65,000	71,394
2011	64,000	61,405



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2012 Projected Mortalities

- Unable to estimate dead discards inseason
- Projected mortalities in 2012 are 86,000 fish based on SEDAR-24 Projection Run 9c
- Discards are projected to increase while the stock rebuilds; however, fishing effort is declining and may reduce discards
- Harvest can be allowed only if mortalities are less than projected

Potential Allowable Landings

Method for Estimating 2012 Discard Mortalities	2012 Discard Mortalities (n)		Potential Allowable Landings (n)
	Projected	Estimated	
2010-11 average mortalities	86,000	66,400	19,600 rec = 14,098 comm = 5,502 or 31,226 lbs gw
Average of 2010-11 estimated mortalities + 2012 projected mortalities	86,000	72,933	13,067 rec = 9,399 comm = 3,668 or 20,818 lbs gw
2011 mortalities increased by Δ in 2011-2012 exploitable abundance and decreased by Δ in 2010-2011 fishing effort*	86,000	77,000	9,000 rec = 6,474 comm = 2,526 or 14,318 lbs gw
2011 increased by Δ in 2011-2012 exploitable abundance (36.6%)	86,000	83,900	2,100 rec = 1,511 comm = 589 or 3,346 lbs gw

* Based on 7.7% decrease in private/charter angler trips from 2010-11 and 9.1% decrease in commercial snapper-grouper days fished away from port from 2010-11

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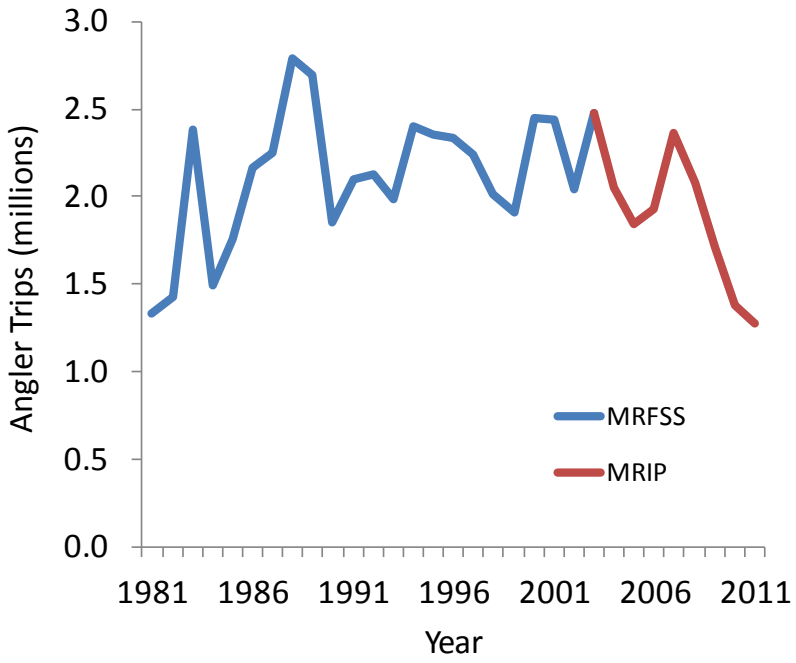
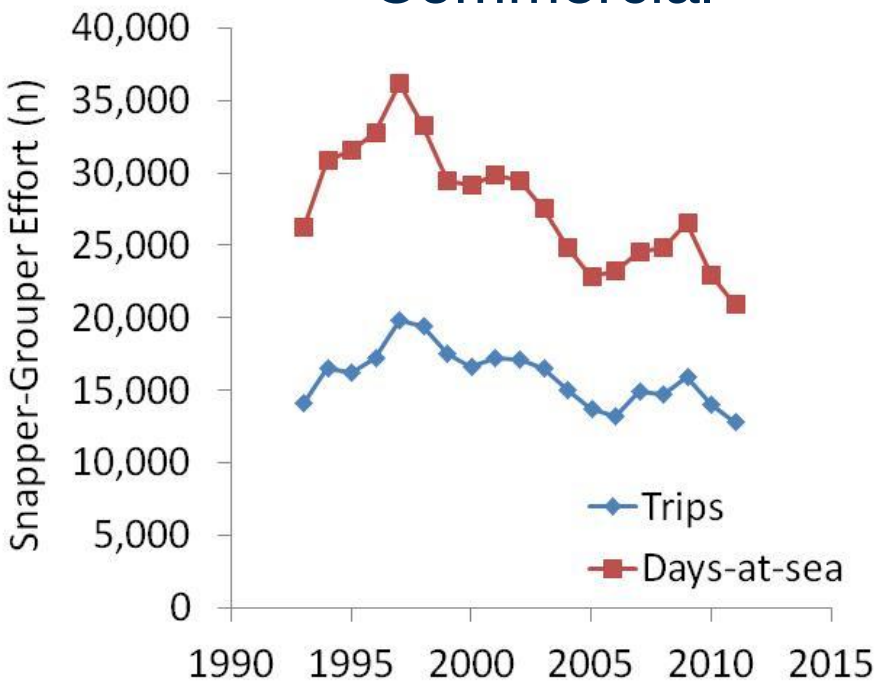
South Atlantic Recreational and Commercial Fishing Effort

Charter/Private



Source: MRFSS/MRIP

Commercial



Source: Coastal Logbook

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Options for Council Consideration

1) Do not reopen

2) Emergency rule or framework measure: Reopen recreational and commercial sectors for a short period of time with strict trip and bag limits.

3) Reopen under exempted fishing permit; participating vessels and/or tournaments selected through a lottery

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Option 1: Do Not Reopen

Benefits

- Reduces likelihood of overfishing and increases likelihood of stock rebuilding on time relative to other options.
- Increases likelihood of future surpluses leading to longer seasons.

Drawbacks

- Does not optimize yield if mortalities are below projected levels.
- Provides no immediate social/economic benefits.
- No fishery-dependent data would be collected for future stock assessments and to inform managers about future reopenings.

Option 2: Emergency Actions

Emergency action may be justified under one or more of the following situations:

(1) Ecological: To prevent overfishing
(2) Economic: To prevent significant direct economic loss or to preserve economic opportunity
(3) Social: To prevent significant community impacts …
(4) Health: To prevent adverse effects to health of fishery participants or to seafood consumers.

An emergency is defined as a situation that:

(1) results from an unforeseen event or a recently discovered circumstance and
(2) presents serious conservation or management problems in the fishery, and
(3) the immediate benefits outweigh advanced notice.

Option 2: Weekend Opening and Commercial Trip Limit

Benefits

- Provides immediate social/economic benefits
- Provides useful information to managers for future reopenings.
- Fishery-dependent data could be collected; value of data may be limited

Drawbacks

- Would be unable to accurately estimate private/charter landings; would require additional sampling and expenditures
- High uncertainty in estimating length of reopening.
- Short opening could increase safety at sea issues.
- Potential for increased discards relative to Option 1.
- Increased likelihood of overfishing relative to Option 1.

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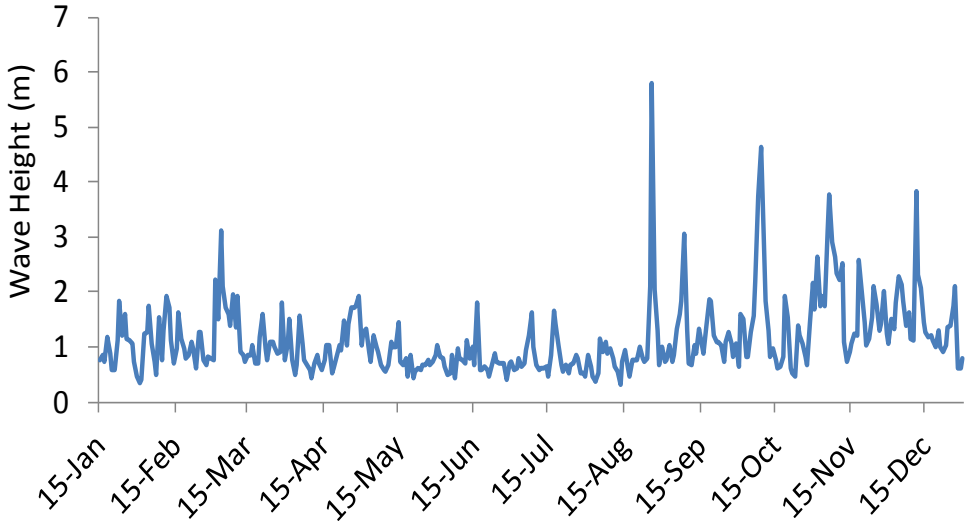
Analytical Challenges for Projecting Length of Reopening

- Historical data may not be representative of future conditions
- Regulatory changes
  - Size limits
  - Bag limits
- Fishing effort
- Environmental factors



Source: NBDC historical data 2011, buoy 41012, St. Augustine, FL

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Methods for Projecting Recreational Season Length

- Method 1: Maximum landings
  - Maximum monthly/wave landings (in numbers) during 2007, 2008, or 2009
  - Landings for a wave were distributed by using ratio of # of days in a month relative to # of days in a wave
  - Estimates not adjusted because exploitable abundance in 2012 is projected to be less than 2007-2009 levels

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Methods for Projecting Season Length

- Method 2: Seasonal Auto-Regressive Integrated Moving Average (SARIMA) model
  - Predicted monthly recreational red snapper landings (± 95% CL) using combination of historical catch data (MRFSS and Headboat) and past, present, and future exploitable abundance.
  - Inputs:
    - 2001-2009 recreational landings (in numbers)
    - 2001-2012 exploitable abundance

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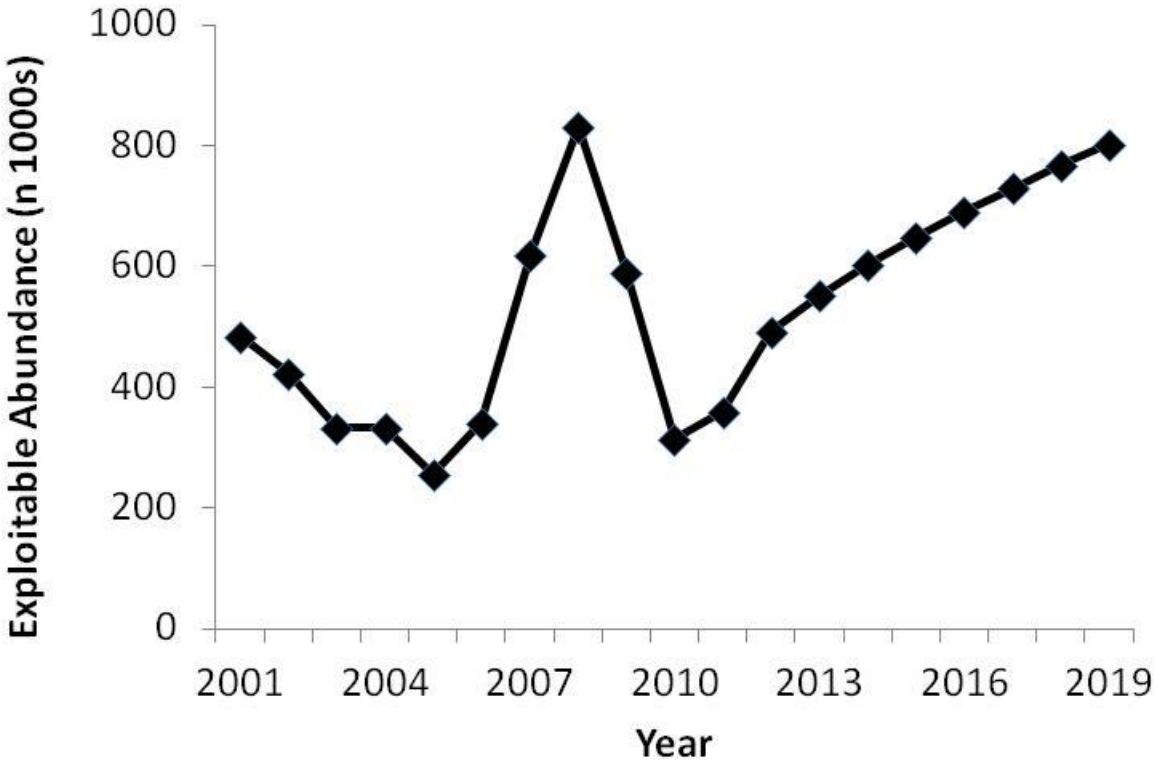
Exploitable Abundance



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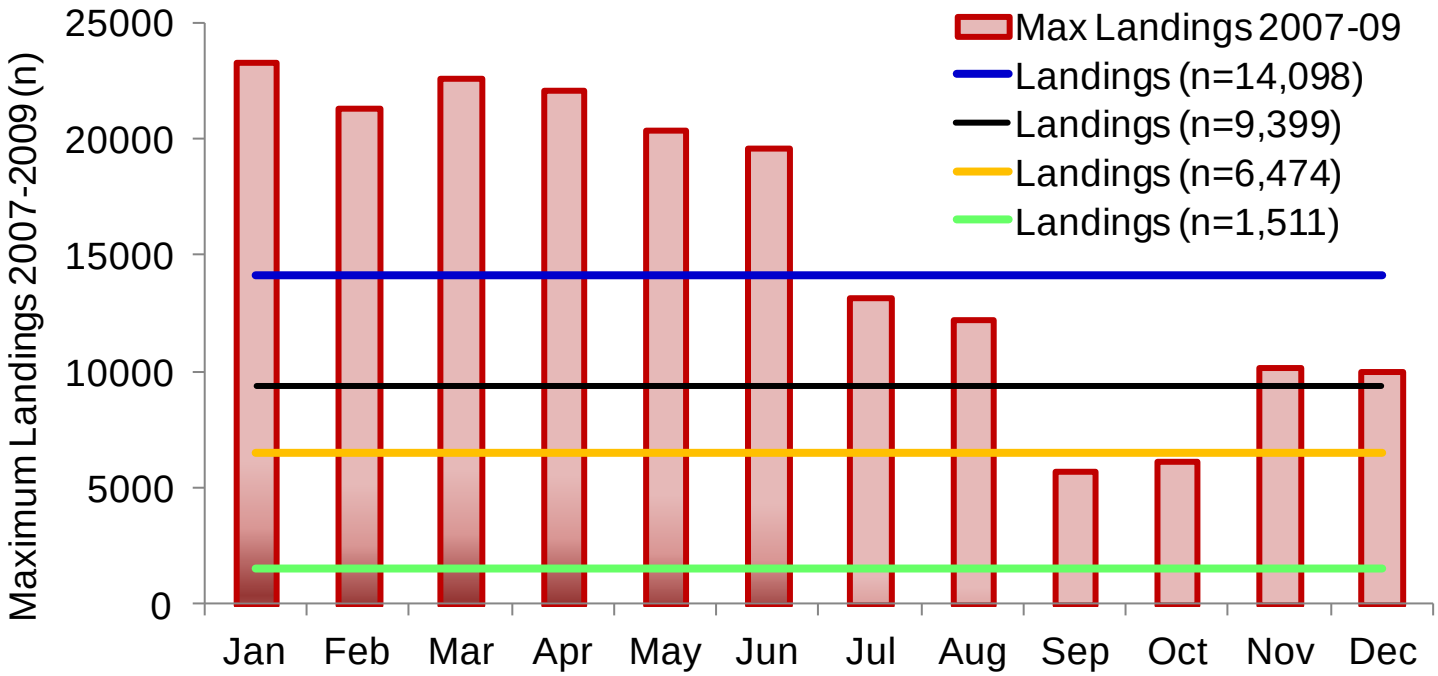
Recreational Season Length Estimates: Maximum Landings 2007-2009



Season length contingent on allowable landings level and time of opening

Projected Season Lengths: Maximum Landinngs

Season start date	Season length based on allowable landings			
	n = 1,511	n = 6,474	n = 9,399	n = 14,098
Jan	2	9	13	19
Feb	2	9	14	21
Mar	2	9	13	19
Apr	2	9	13	20
May	2	10	14	21
Jun	2	10	15	22
Jul	4	15	22	33
Aug	4	16	24	41
Sep	8	34	48	68
Oct	8	32	41	54
Nov	5	20	29	43
Dec	5	20	29	35

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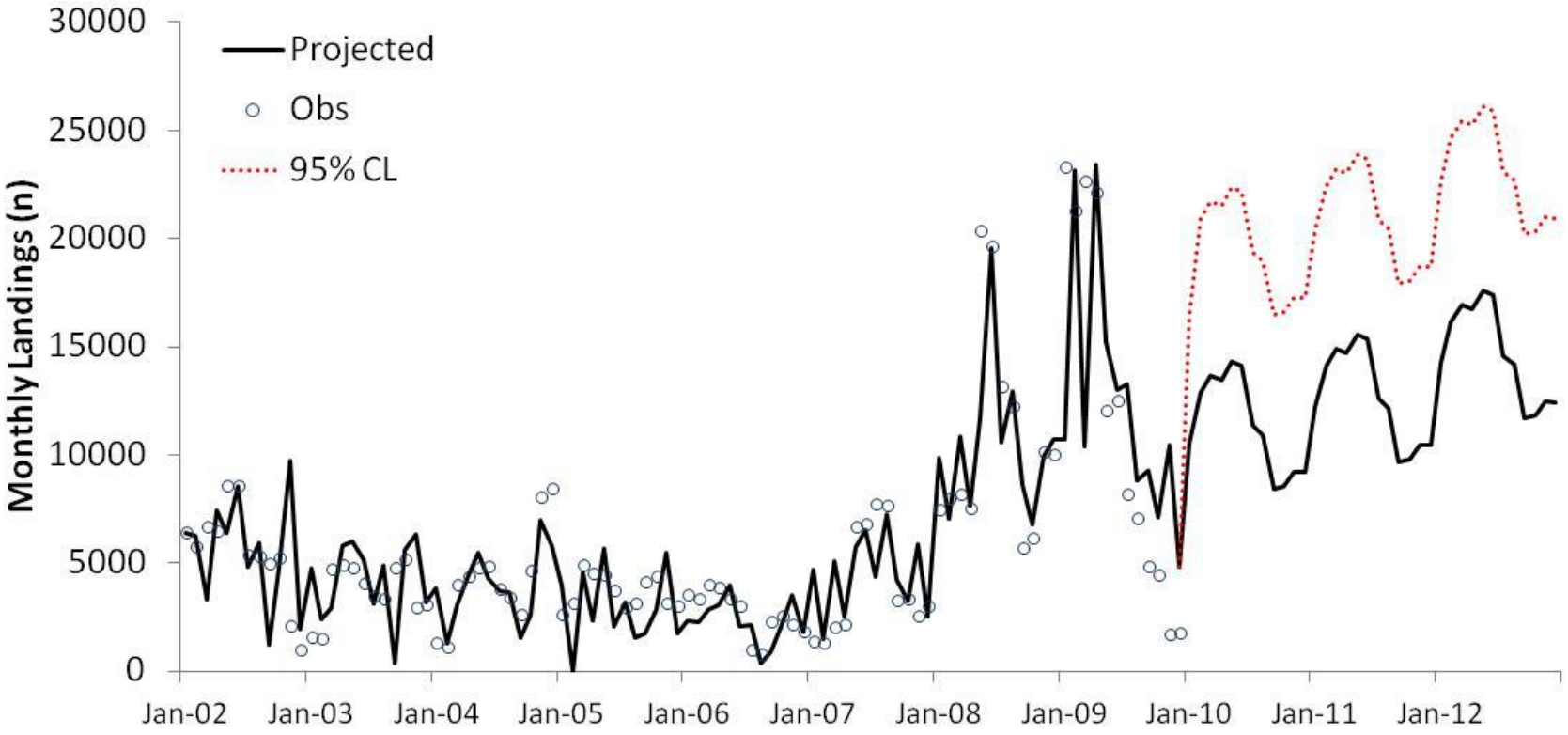
Method 2: SARIMA Results



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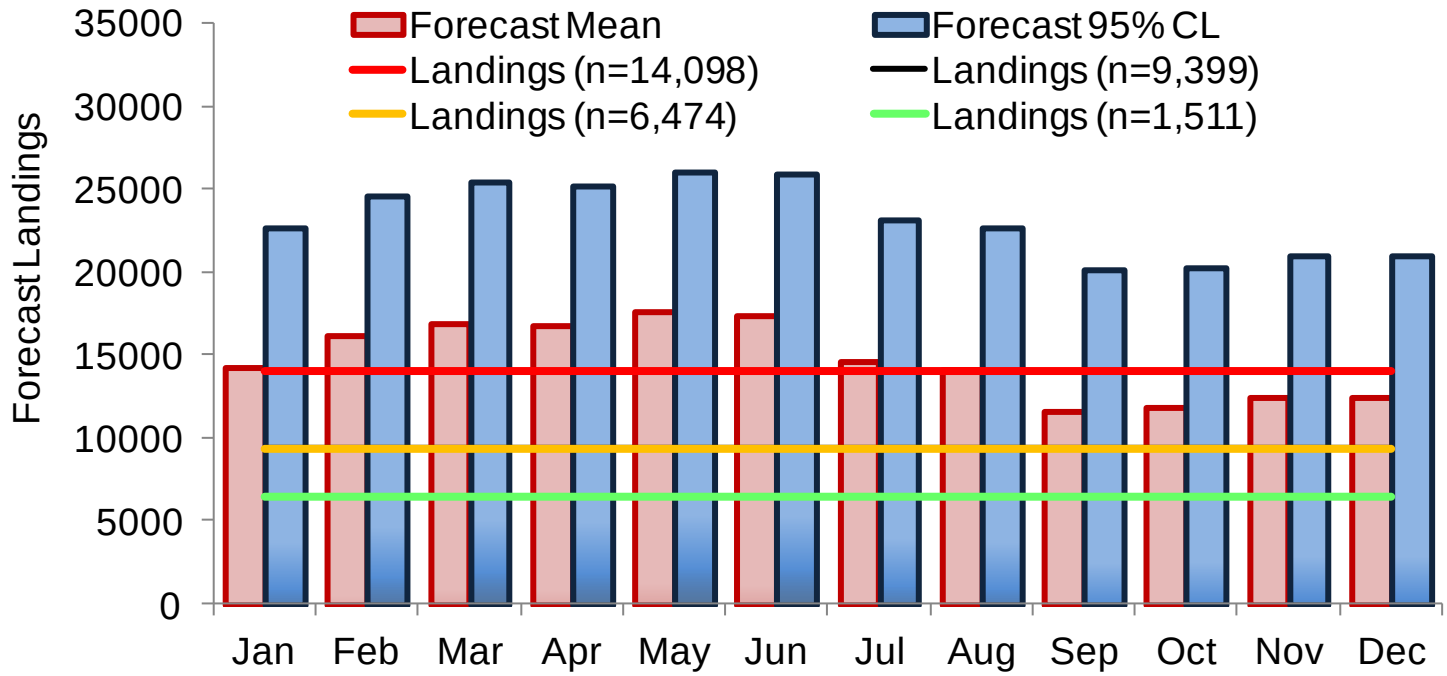
Recreational Season Length Estimates: SARIMA Results



Season length contingent on allowable landings level and time of opening

Projected Season Lengths: SARIMA Forecast 95% CL

Season start date	Season length based on allowable landings			
	n = 1,511	n = 6,474	n = 9,399	n = 14,098
Jan	2	9	13	19
Feb	2	7	11	16
Mar	2	8	11	17
Apr	2	8	11	17
May	2	8	11	17
Jun	2	7	11	16
Jul	2	9	13	19
Aug	2	9	13	19
Sep	2	10	14	21
Oct	2	10	14	21
Nov	2	9	13	20
Dec	2	10	14	21

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Commercial Trip Limits

- Used historical logbook landings in 2009
  - Imposed trip limits of 50, 100, and 200 lbs gutted weight if a trip exceeded trip limit
  - Re-estimated monthly landings

- Projections do not account for changes in effort, stock abundance, or fisherman behavior resulting from fishery reopening.

- If effort and landings are higher than historical levels then landings will be underestimated.

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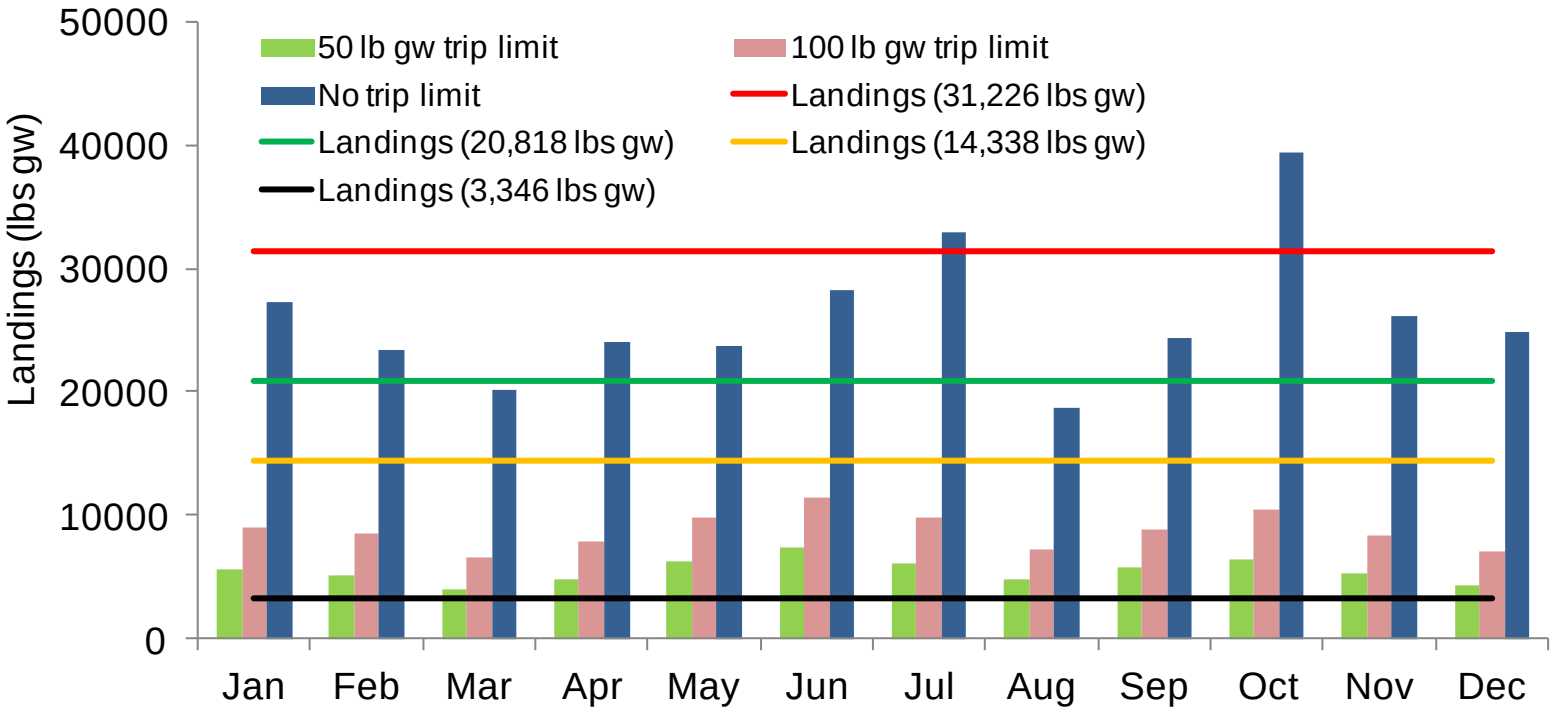
Commercial Trip Limit Results



Season length contingent on allowable landings level, time of opening, and trip limit

* Projections based on 2009 coastal logbook landings

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Option 3: Exempted Fishing Permit (EFP)

- NMFS may authorize, for limited testing, public display, data collection, …, the target or incidental harvest of species that would otherwise be prohibited
- Terms and conditions may be attached to the EFP consistent with the purpose of exempted fishing
- 15-45 public comment period
- The following information must accompany EFP:
  - Effect on target and incidental species
  - Regulations that without EFP would prohibit activity
  - Environmental impacts of EFP

Option 3: Exempted Fishing Permit

Benefits

- Provides immediate social/economic benefits
- Fishery-dependent data could be collected; value of data greater than Option 2 if collected seasonally and over broader spatial distribution
- Landings could be closely monitored

Drawbacks

- Benefits may be disproportionally distributed across sectors
- Would take longer to implement than Option 2
- Potential for increased discards relative to Option 1.
- Increased likelihood of overfishing relative to Option 1.

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Potential Options for EFP

- Select vessels and/or tournaments to participate in EFP through lottery
- Stratify vessels geographically and temporally to allow harvest and data collection throughout red snapper range
- Impose reporting requirements to enhance data collection, and account for catch, such as:
  - Hail out and hail in
  - One trip/day
  - Landings report after each trip

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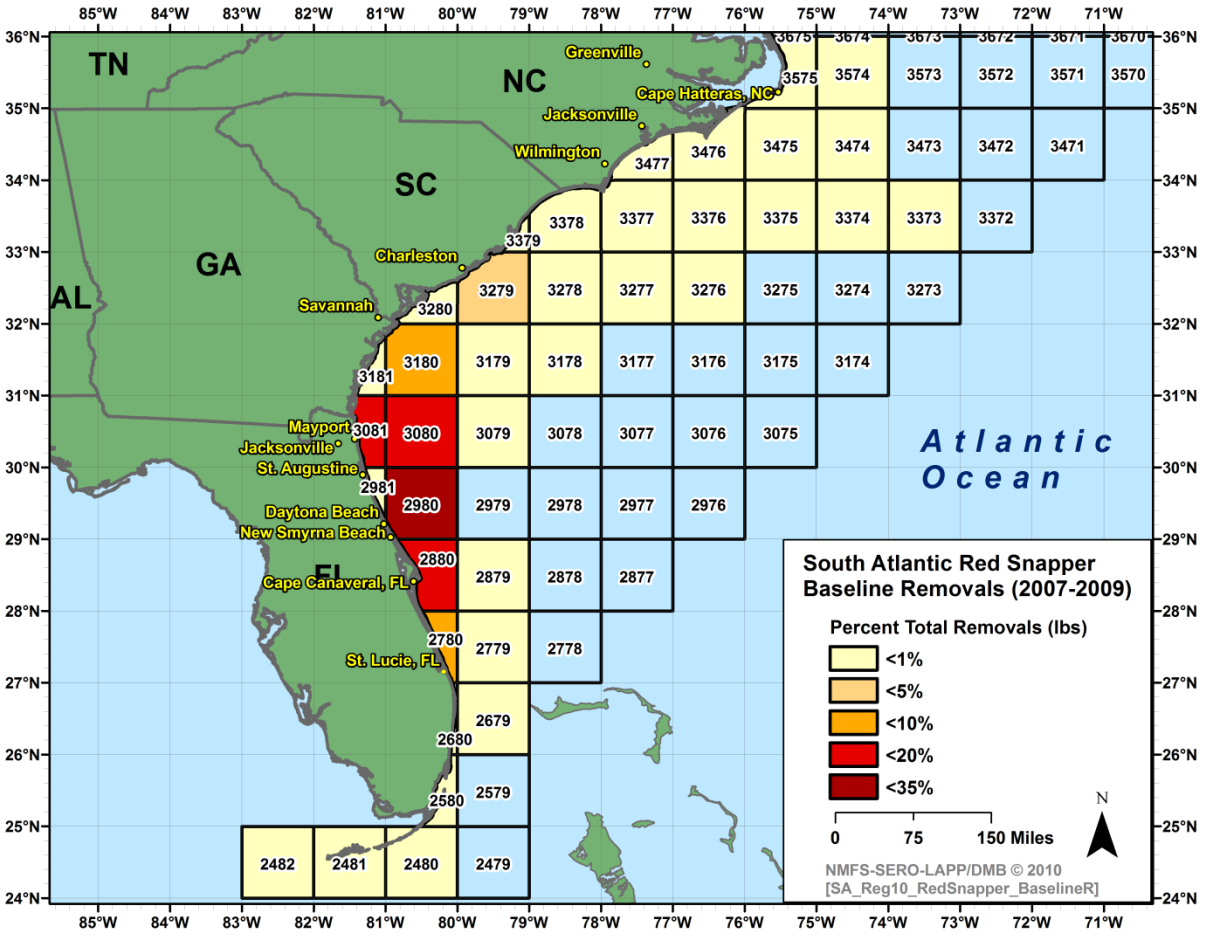
Red Snapper Removals by Area Fished, 2007-2009

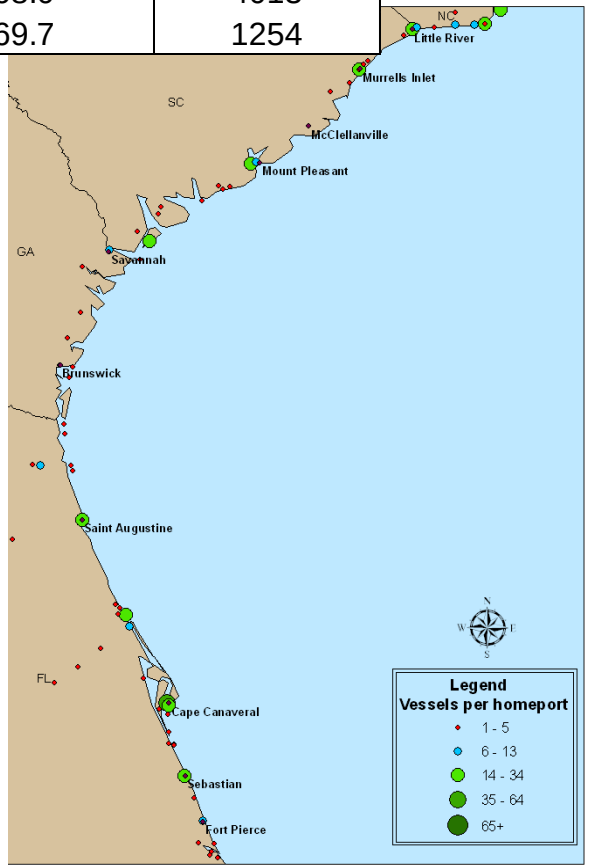


Region	Charter Boats			Headboats		
	N*	Avg. Capacity	Passengers	N**	Avg. Capacity	Passengers
North Carolina	257	6.1	1560	14	63.8	893
South Carolina	104	6.3	651	12	44.8	538
Georgia	24	6.7	162	2	21.5	43
Florida						
NEFL (Nassau-Volusia)	76	6.8	515	7	72.6	508
CEFL (Brevard-Martin)	110	6.6	723	9	78.1	703
SEFL (Palm Beach-Dade)	164	6.4	1046	6	94.5	567
Monroe County	333	6.1	2032	9	84.6	761
Total						
All areas	1068	6.3	6688	59	68.0	4013
GA-CEFL	210	6.7	1399	18	69.7	1254

* Excludes 405 permits that are associated with vessels homeported in non-South Atlantic states

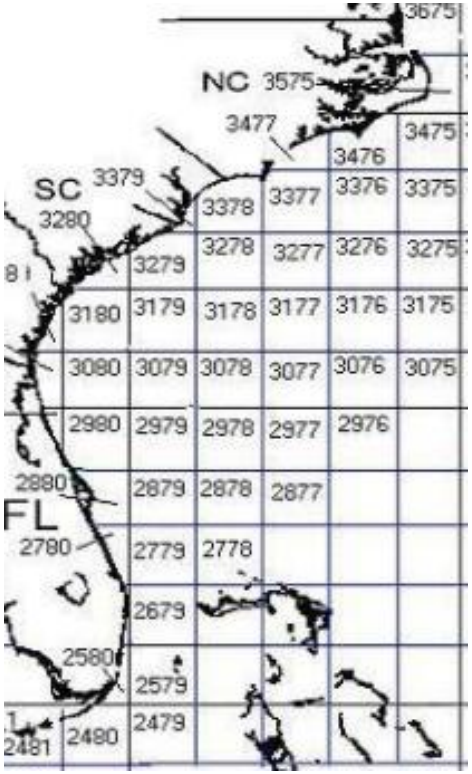
** Excludes 16 headboats from the SE Headboat Survey that either do not have a valid snapper-grouper permit or are homeported in a non-South Atlantic state according to permit data records

Geographic Distribution and Capacity of For-hire Snapper-Grouper Vessels



Geographic Distribution of Commercial Vessels Landing Snapper-Grouper[1], 2011

Region	Area Fished	Vessels[2]	Trips
NC	3471-3575	58	2,122
SC	3273-3379	101	5,038
GA	3174-3181	7	428
NEFL	2976-3081	45	1,631
CEFL	2777-2880	55	1,156
SEFL	3273-3379	73	621
Monroe	2479-2482	128	1,219
Total	n/a	467	12,215



[1] The following species were included for analysis and are commonly caught in association with red snapper: vermilion snapper, scamp, red porgy, black grouper, gag, red grouper, gray triggerfish, and greater amberjack.

[2] 46 vessels reported fishing in multiple regions; only the primary region of landings is reported; vessel fishing activity was based on area fished and not state of landing

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Conclusions

- Fishery remaining closed
  - increases the likelihood of stock rebuilding on time
  - reduces the likelihood of overfishing occurring
  - provides no immediate social/economic benefits
- Emergency rule or framework measure
  - provides immediate social/economic benefits to all sectors
  - estimates of season length are highly uncertain
  - catches for charter/private would be difficult to monitor

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Conclusions

- Opening through Exempted Fishing Permit
  - would provide greatest scientific benefits
  - would provide limited benefits for evaluating future reopenings
  - would provide most accurate way of accounting for landings
  - most administratively burdensome; longest to implement

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Questions?

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Commercial Trip Limit Results

Month	Projected Monthly Landings (lbs gw) for Various Trip Limits			
	50 lbs	100 lbs	200 lbs	No Limit
Jan	5,560	9,094	14,011	27,255
Feb	5,100	8,554	12,965	23,342
Mar	4,056	6,668	10,016	20,107
Apr	4,790	7,844	12,087	24,062
May	6,320	9,874	13,844	23,676
Jun	7,423	11,474	16,589	28,211
Jul	6,054	9,752	14,240	32,942
Aug	4,862	7,283	10,214	18,684
Sep	5,838	8,801	12,340	24,429
Oct	6,504	10,456	16,123	39,356
Nov	5,380	8,364	12,502	26,073
Dec	4,282	7,013	10,944	24,888
Total	66,168	105,176	155,874	313,024

* Projections based on 2009 coastal logbook landings