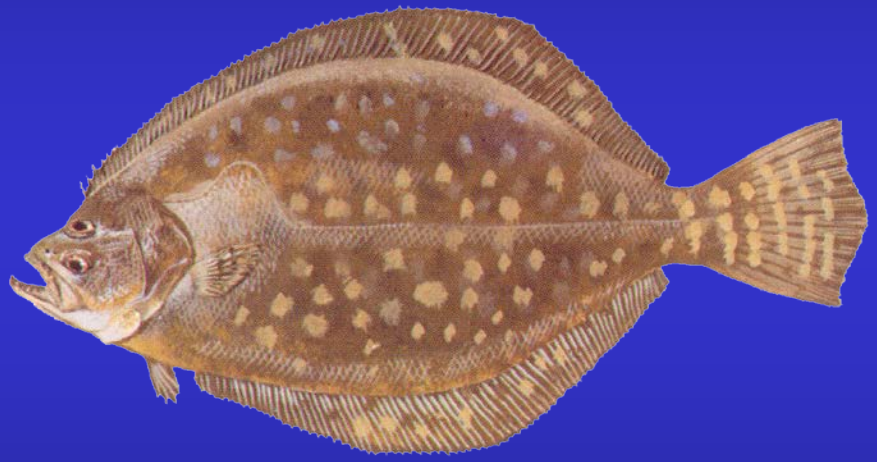
Draft Supplement A to Amendment 1 of the N.C. Southern Flounder Fishery Management Plan



Marine Fisheries Commission

May 21, 2015

Issue and Origination

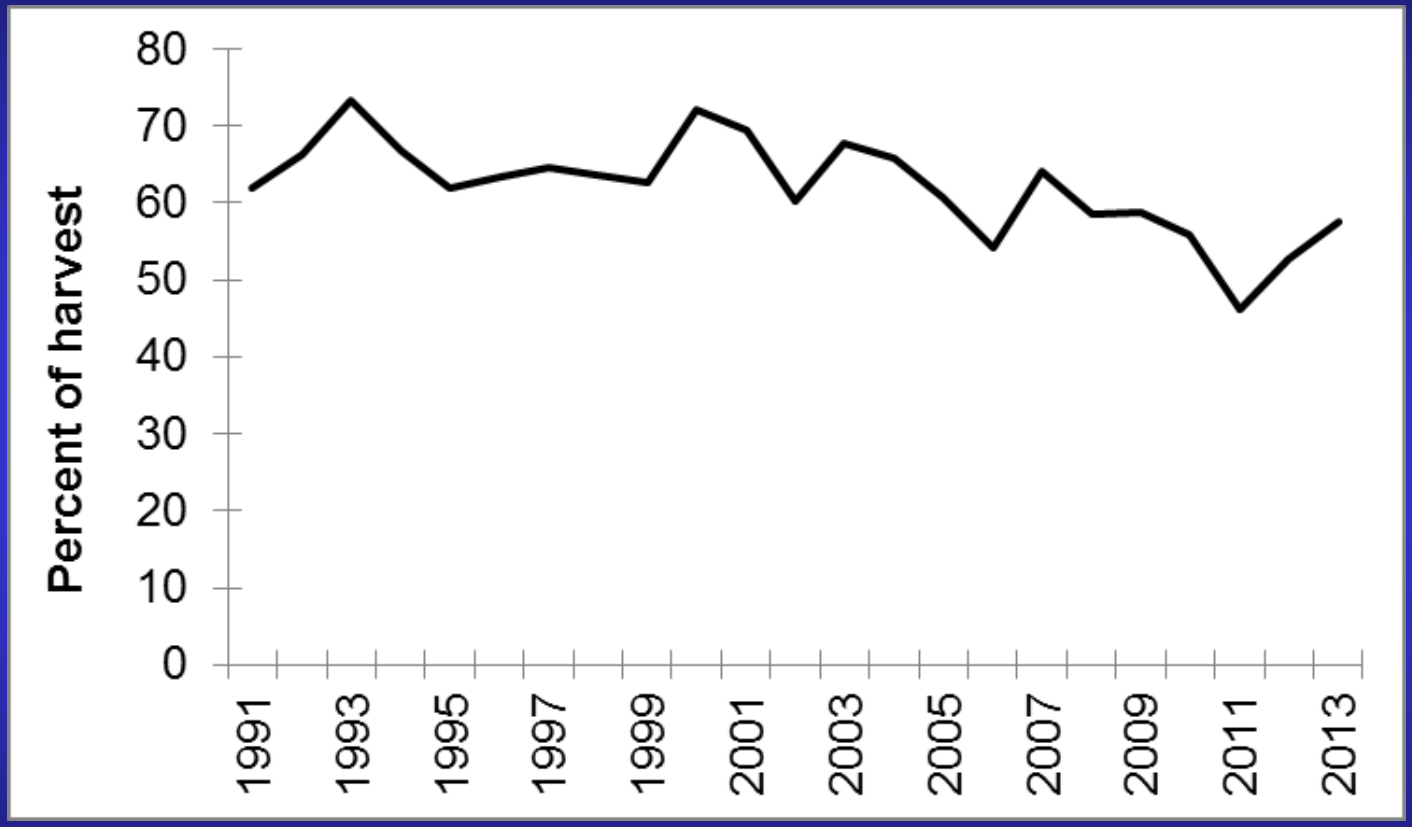
- Due to stock concerns, the commission requested a supplement to reduce catch of southern flounder by 25 to 60 percent.
- Supplement would allow for management actions to be implemented by fall 2015.
- Increasing escapement may improve spawning potential and recruitment.

Recent Management and Assessment History

- Southern Flounder Amendment 1 adopted 2013
- 2014 southern flounder stock assessment not approved for determining stock status
  - Regional stock
  - Peer-reviewers considered most data inputs valid for management

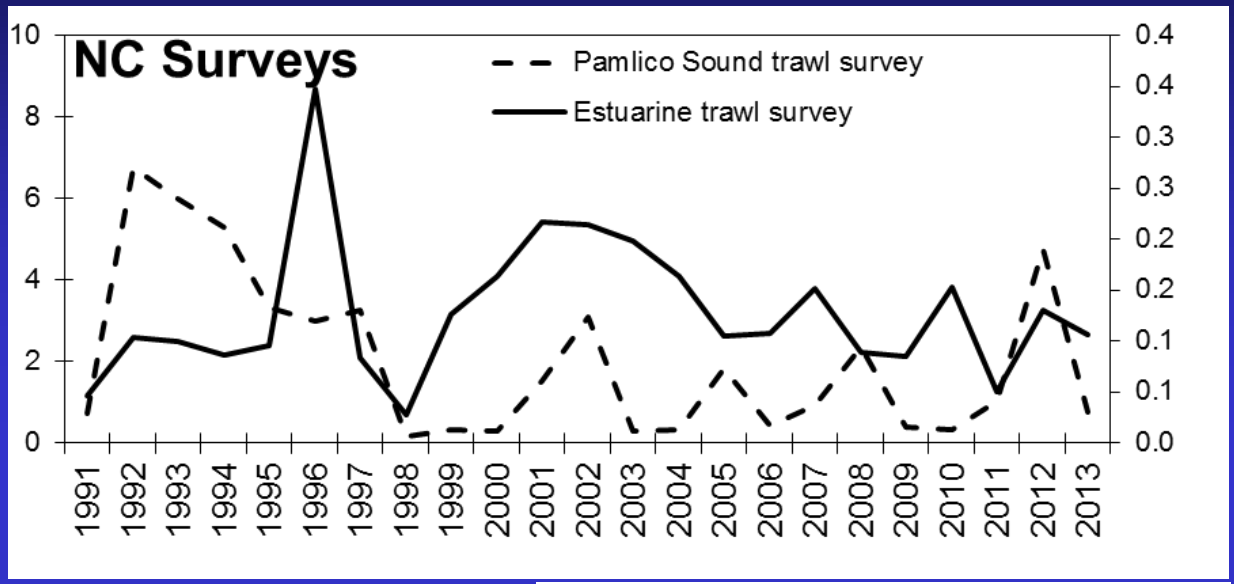
Stock Concerns:

Percentage of immature fish in the harvest

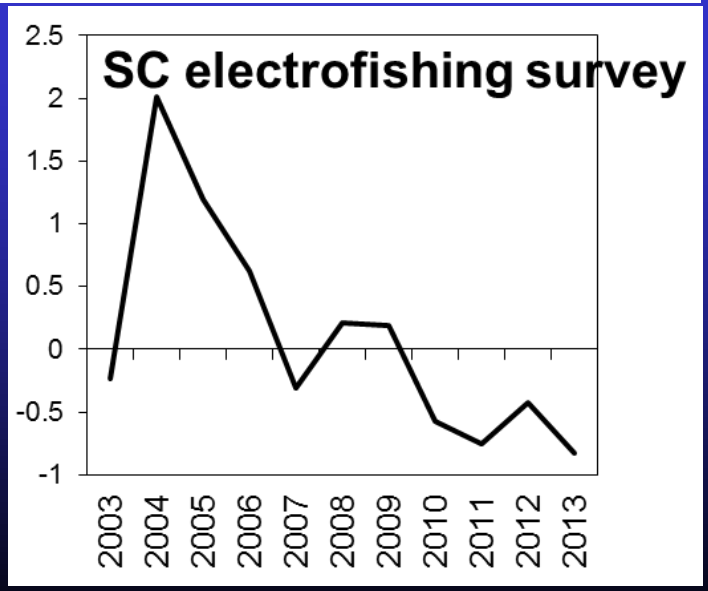


- Range: 46 to 73 percent
- 1991-2004 average: 66 percent
- 2005-2013 average: 57 percent

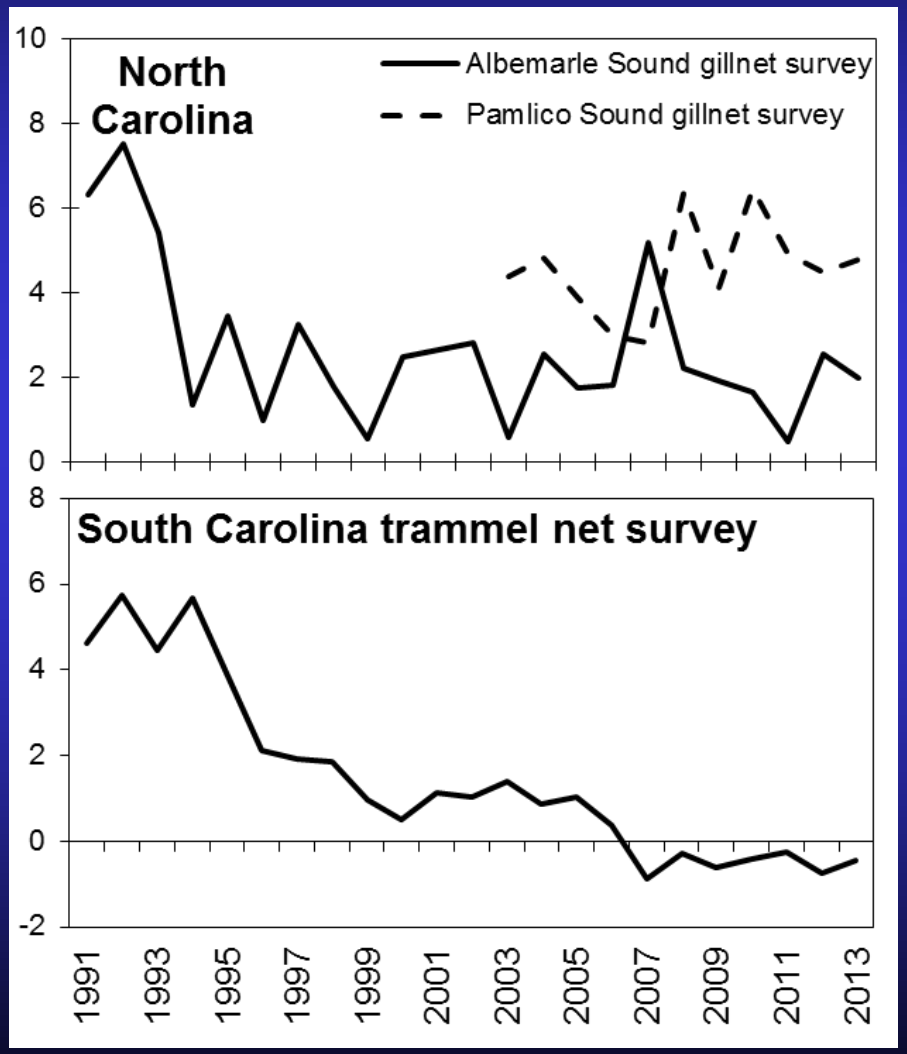
Stock Concerns:
Juvenile abundance



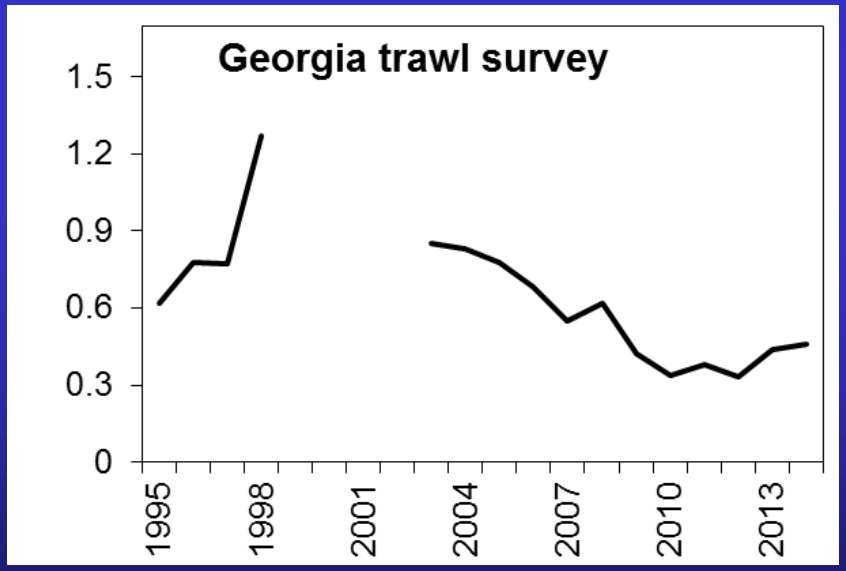
Coast-wide, multi-decadal decline in recruitment



Stock Concerns:
General abundance



General coast-wide, multi-decadal decline in abundance



Fishery Characterization

2011-2013 Commercial fishery average

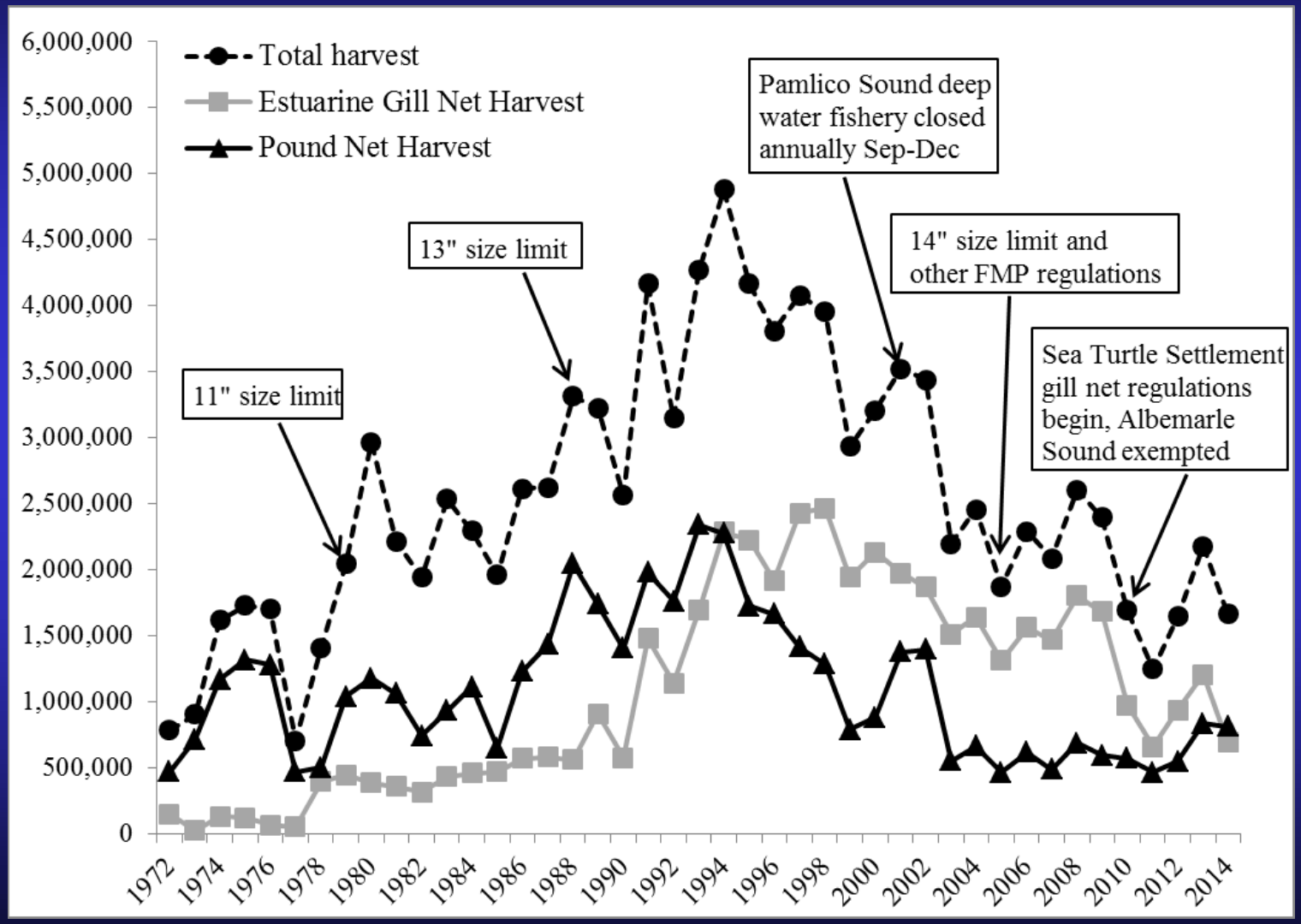
Gear	Trips	Participants	Dealers	Ex-vessel value	Pounds	% of Comm. harvest	% of Total harvest
Gill Net	14,638	854	165	$2,305,055	932,792	55.2	43.4
Pound Net	1,649	75	34	$1,621,415	614,899	36.4	28.6
Gig	2,503	258	100	$322,605	127,413	7.5	5.9
Other	1,282	282	98	$34,377	14,541	0.9	0.7
Total	20,069	1,175	237	$4,283,451	1,689,645	100.0	78.6

2011-2013 Recreational fishery average

Gear	Trips	Pounds	% of Recreational harvest	% of Total harvest
Gig	24,477	96,748	21.1	4.5
Hook & Line	471,208	362,429	78.9	16.9
Total	495,685	459,177	100.0	21.4

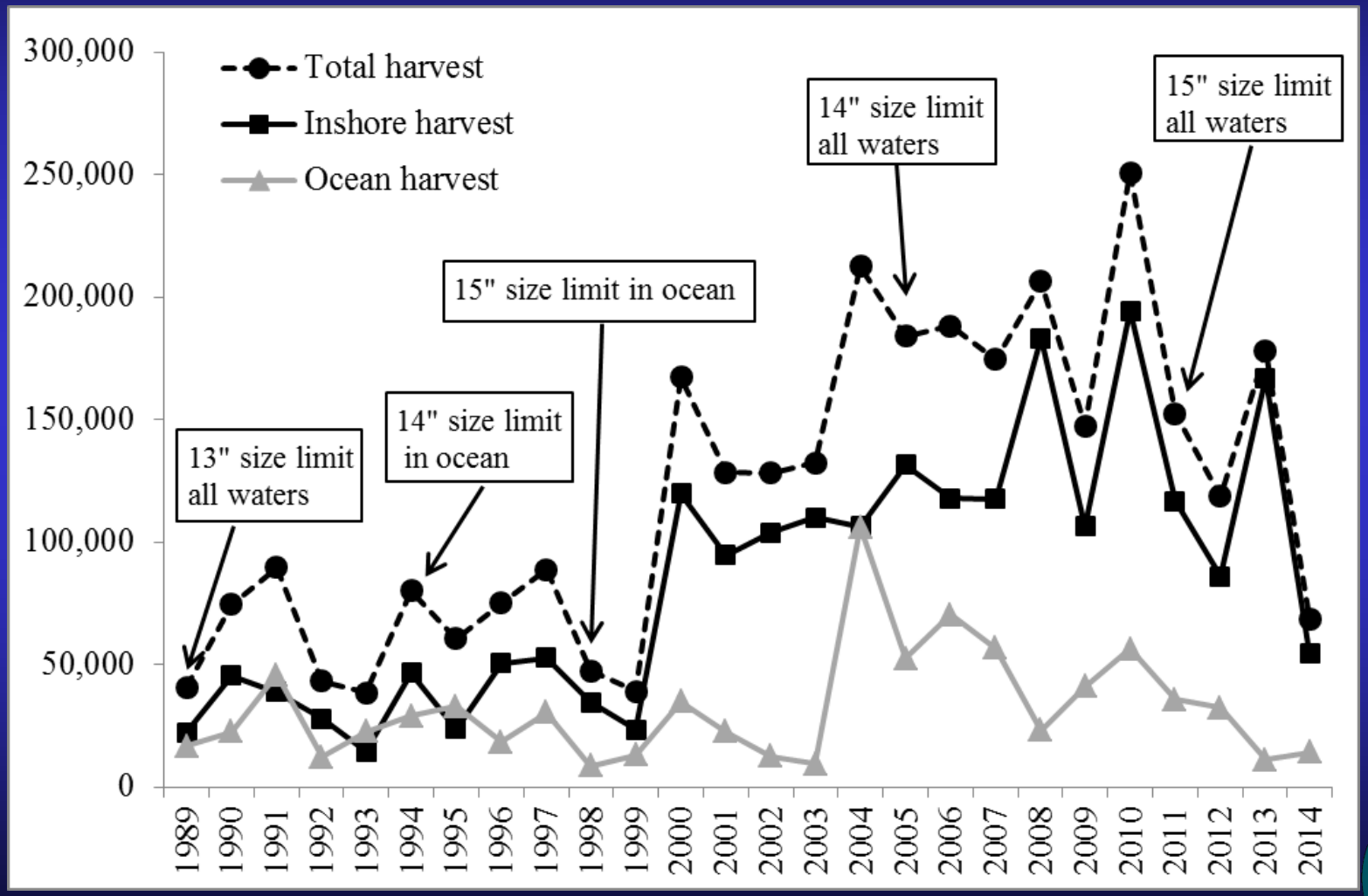
Fishery Characterization:

Commercial fishery trends



Note: 2014 data are preliminary

Fishery Characterization:
Recreational fishery trends



Note: 2014 data are preliminary

Management Measures Not Analyzed for Reductions

- Quota
  - Not feasible to implement in the short-term
- Maximum size limit
  - Reductions would likely be minimal
- Area closures
  - Extensive research needed, recoupment likely

Catch Reduction Methods

- Catch = harvest + dead discards
- Commercial harvest = N.C. Trip Ticket Program
- Commercial gill net discards = observer data
- Recreational hook and line data = Marine Recreational Information Program
- Recreational gig data = mail-based survey

Catch Reduction Methods

- Reductions were from the total fishery (commercial plus recreational)
- Numbers of fish averaged for 2011-2014
- 2014 data used but incomplete
- No discard or post-release mortality estimates for some gears
- Calculations are complex and include many assumptions

1. Season Closure

- Only considered continuous, end of season closures
- Assumed no flounder harvest allowed by any gear
- Assumed major gears closed, except hook-and-line
- Assumed typical hook-and-line harvest will be discards during closed season
- Season closures of half-month blocks starting Aug. 1

1. Season Closure

Estimated fishery catch reductions (percent)

	Commercial					Recreational			All
Closure	Gill net	Pound net	Gig	Other	Total	Hook & line	Gig	Total	Total
Oct 16-Dec 31	9	15	1	< 1	26	1	1	2	**28**
Oct 1-Dec 31	16	22	1	< 1	39	2	2	3	**42**
Sept 16-Dec 31	23	27	1	< 1	51	2	2	4	**55**
Sept 1-Dec 31	26	27	2	< 1	55	2	2	4	**60**

- Reductions higher for commercial than recreational
- Pound nets greatest portion of reduction among gears
- Only closures with reductions 25 to 60 percent shown

2. Increase Minimum Size Limit

- Further reductions are expected from commercial gear modifications to decrease discards
  - These fall between catch and harvest reductions
- Gill net post-release mortality rate used for all gears except hook-and-line
- Size limit starts Jan. 1

2. Increase Minimum Size Limit

Estimated total fishery catch reductions (percent)

	Commercial					Recreational			All
Size limit	Gill net	Pound net	Gig	Other	Total	Hook & line	Gig	Total	Total
15-inch	9	4	1	< 1	14	0	0	0	14
16-inch	14	9	2	< 1	25	2	< 1	3	**28**

Reductions higher for commercial than recreational

3. Decrease Recreational Bag Limit

Estimated total fishery catch reductions (percent)

Bag limit	Hook & line	Gig	Total
1-fish	3	2	5
2-fish	1	1	2
3-fish	1	< 1	1
4-fish	< 1	< 1	< 1
5-fish	< 1	< 1	< 1

Does not achieve requested fishery reductions

4. Season Closure and Increase Minimum Size Limit

Estimated total fishery catch reductions (percent)

Closure	15-inch limit	16-inch limit
Dec 16-Dec 31	14	**28**
Dec 1-Dec 31	14	**28**
Nov 16-Dec 31	18	**31**
Nov 1-Dec 31	**25**	**37**
Oct 16-Dec 31	**38**	**48**
Oct 1-Dec 31	**50**	**58**

Only season closures with reductions 25 to 60 percent shown

5. Season Closure, Increase Size Limit, and Decrease Bag Limit

Estimated total fishery catch reductions (percent)

	15-inch limit		16-inch limit	
Closure	1-fish bag	2-fish bag	1-fish bag	2-fish bag
Dec 16-Dec 31	19	16	**32**	**30**
Dec 1-Dec 31	19	16	**32**	**29**
Nov 16-Dec 31	22	19	**34**	**32**
Nov 1-Dec 31	**29**	**27**	**41**	**39**
Oct 16-Dec 31	**41**	**39**	**50**	**49**
Oct 1-Dec 31	**52**	**51**	**60**	**59**

Only season closures with reductions 25 to 60 percent shown

1. Season Closure

Major positive and negative impacts

+ Estimated to achieve requested reductions
+ May increase spawning stock biomass
+ May increase escapement
+ May increase fishery harvest long-term
- Decreases fishery harvest in short-term
- Inequity in reductions by gear and area
- Effort may increase during open seasons
- Recoupment occurs if harvest allowed for any gear
- Potential discard mortality unless all fishing stops
- Continues harvest of primarily immature fish

2. Increase Minimum Size Limit

Major positive and negative impacts

+ 16-inch size limit estimated to achieve reduction
+ May increase spawning stock biomass
+ Decreases proportion of immature fish in harvest
+ May increase escapement
+ May increase fishery harvest in the long-term
+ Current fishing season unchanged
- Increased discards of all flounder species
- Decreases fishery harvest in short-term
- Inequity in reductions by gear and area
- Recoupment may occur due to fish growth

3. Decrease Recreational Bag Limit

Major positive and negative impacts

+ May increase the spawning stock biomass
+ May increase fishery harvest in the long-term
- Does not achieve reduction in requested range
- Increased discards of all flounder species
- Decreased fishery harvest in short-term

4. and 5. Measure Combinations

Major positive and negative impacts

+/- Same impacts as each measure alone

+ Reduces length of the season closure needed to achieve desired reduction level

+ Will distribute the reductions more equally between sectors (method 5)

Conclusions

- Certain reduction methods may benefit stock more
- Catch reduction calculations are complex and include many assumptions
- Likely not possible to determine if estimated catch reductions are achieved
- Fishery trends in South Atlantic impact the stock and chances for achieving reductions

Summary of Reduction Methods

1. Seasonal closure
2. Increase minimum size limit
3. Decrease recreational bag limit
4. Seasonal closure and increase size limit
5. Seasonal closure, increase size limit, and decrease recreational bag limit

Next Steps

- Commission develops specific option(s) at this meeting for public comment
- Guidelines provide the division observes a 30-day public comment period; if the commission wants to do more they need to provide guidance
- Commission reviews public input and selects preferred options at August meeting

Questions?