



# **PID Public Comment Summary and Next Steps for AMG Cobia**

ASMFC Winter Meeting

Alexandria, Virginia

February 2, 2017



# Public Comments Received

- Five public meetings held in Virginia, North Carolina (2), South Carolina, and Florida.
- 60 participants excluding ASMFC, SAFMC, and state staff.
- 16 written comments



# Public Comment Summary

- Two specific issues dominated concerns expressed related to cobia management.
  - reliability and representative nature of the MRIP landings estimates,
  - genetics analysis used to distinguish between Gulf and Atlantic migratory group cobia.
- Detailed public comments on these issues are contained in briefing materials.



# Issue 1: Complementary Management with the Council

- Public meeting and written comments were split on whether to develop a complementary plan.
- Opposition focused on disagreement with the stock boundary and the inability of ASMFC to change Allowable Catch Limits.
- Supporters focused on providing states flexibility to manage their specific fisheries.



# Issue 1 (continued)

- Comments related to what federal management measures should be required were not provided
- States to be included in the management unit may be inferred by concerns expressed with genetic data suggesting Florida should be included in the AMG cobia.



## Issue 2: Management Objectives and Goals

- Specific comments supported long term sustainability.
- Those in support of ASMFC management specifically supported state flexibility.
- Comments supported a management strategy to manage cobia as primarily a recreational fishery while allowing current commercial bycatch provisions to continue.



## **Issue 2: Management Objectives and Goals (continued)**

- Support for improved data collection through biological sampling and recreational reporting
- General support for long term management regime to avoid closures and allow for planning



## **Issue 3: Coastwide, Regional, or State-by-State Management**

- Commenters supported state-by-state allocation options whether supporting ASMFC plan or not.
- Concern with coast wide quota and closure impacts.





## Issue 4: Recreational Management Tools

- General support for size and bag limits.
- Specific comments related to circle hooks both pro and con, slot limits, maximum size limits, prohibiting gaffs, spears, and bangsticks, while other supported continued gaffing.
- General interest in addressing catches north of Virginia through some *de Minimis* approach.



# Issue 5: Commercial Management Tools

- Few specific commercial comments.
- Maintain current bycatch allowance.
- Suggest commercial landings be reported in whole weight.



# South Atlantic Multi-species Advisory Panel Recommendations

- Issue 1- Support ASMFC development of a Complementary FMP for cobia.
- Issue 2- Expressed specific need for a long-term management regime, conservatively developed, so as to avoid/minimize annual (mid-season) changes or closures.



# South Atlantic Multi-species Advisory Panel Recommendations

- AP supports improved information gathering to reduce uncertainty associated with current landings estimates and impart more confidence in the assessment process. Recommend the development of specific biological sampling requirements in the plan.



# South Atlantic Multi-species Advisory Panel Recommendations (continued)

- Issue 3: No specific comments. Intend on commenting on specific measures as plan is developed.
- Issue 4/5: Discussion on circle hooks and agreed that if circle hooks are required, they should be non-offset style.
- Issue 6: Plan should inform stakeholders of mercury issues with larger cobia



# Current SAFMC Plan provisions

- 1 Fish recreational bag limit
- 36" FL minimum size limit.
- Limit commercial harvest to 2 fish per person or 6 per vessel, whichever is more restrictive.
- Federal waters closure effective January 24, 2017



# Overall Public Comment and AP Summary

- Mixed opinion on development of a complementary Cobia FMP for the Atlantic Migratory Group (Georgia-New York) cobia.
  - Support presumes acceptance of current genetics analysis and stock boundaries developed by SAMFC,
  - Recognize further investigations into cobia genetics and migratory patterns are ongoing and may change.

# Management Issue 1



## ***COMPLEMENTARY MANAGEMENT WITH THE COUNCIL***

### **Management Questions:**

- Does the Commission want to continue development of a complementary FMP to the SAFMC's CMP FMP?
- What federal management measures should be required in the Commission plan?
  - Should the Commission follow the Federal quotas?
  - Should the Commission close when the ACL is met?
- What states should be included in the management unit?
  - Should the FMP provide flexibility to make changes to management/stock units to reflect changes in the science?



# Management Issue 2



What should be the objectives in managing the Cobia fisheries through the Commission?

## ***MANAGEMENT OBJECTIVES AND GOALS IN PID***

- Achieve long-term sustainability
- Strive for consistent coast wide measures, while allowing flexibility for alternative strategies reach the FMP objectives
- Sustainable recreational and commercial fisheries
- Maximize cost effectiveness of current information gathering and prioritize state obligations in order to minimize costs of monitoring and management
- Long-term management regime to minimize or eliminate annual modifications to management

# Management Issue 3



## ***COASTWIDE, REGIONAL OR STATE-BY-STATE MANAGEMENT:***

### **Management Questions:**

- Should there be consistent Commercial and Recreational Management?
  - Should that Management be coastwide? Regional? State-by-State?
  - Are there regional differences in the fishery and/or resource that need to be considered when implementing management measures?
- If management should be different for Commercial and Recreational what approach should each sector use for management?
  - Coastwide, regional or state-by-state

# Management Issue 3



## ***COASTWIDE, REGIONAL, OR STATE-BY-STATE MANAGEMENT:***

### **Management Questions:**

- If Regional or state-by-state measures are considered should there be allocations of the quota for either Commercial or Recreational?
  - How should allocations be determined?
  - Historical? What years?
  - Other method?
  - Combination of both historical and some other method?

# Management Issue 4



## ***RECREATIONAL MANAGEMENT TOOLS***

### **Management Questions:**

- What are the appropriate recreational measures for cobia?
- Should the FMP consider gear restrictions, e.g. circle hooks for all live and dead bait fisheries for cobia or prohibition on gaffing cobia?
- Are there other management options that should be considered (e.g., slot limits, spawning season closures, etc.)?

# Management Issue 5



## **COMMERCIAL MANAGEMENT TOOLS**

### **Management Questions:**

- What are the appropriate commercial measures for cobia?
- Should the FMP consider gear restrictions, e.g. circle hooks for all live and dead bait fisheries for cobia or prohibition on gaffing cobia?
- Are there other management options that should be considered (e.g., slot limits, spawning season closures, etc

# Management Issue 5



## ***Other Issues to Include in the draft FMP***

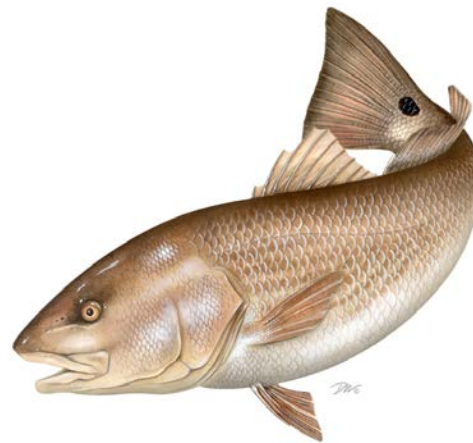
- Should fishery independent and dependent monitoring should be included in the document?
- Should the FMP consider some level of *de Minimis* or threshold landings where cobia harvest is minimal or episodic?
- Concerns related to mercury levels in cobia.
- Are there other issues the Board wishes to address?

# Questions





# Red Drum Statistical Catch-at-Age Assessments



South Atlantic State/Federal Fisheries  
Management Board

February 2, 2017





# Red Drum Assessment Process

- SEDAR 44 Review Workshop – August 2015
  - Recommendations to achieve stable models with the Stock Synthesis statistical framework (SS3)
  - Peer review panel endorsed transition to Stock Synthesis
  - SEDAR 44 Stock Assessment Report
- ASMFC Desk Review – April 2016
  - Evaluate final models for advising management of the red drum stocks
  - Addendum II to SEDAR 44 Stock Assessment Report



# Red Drum Assessment Process

- Management Board Meeting – May 2016
  - TC/SAS tasked with updating the SCA models used in SEDAR18 due to concerns with SS3 models
  - Discretion given on whether to incorporate new data sources
- ASMFC Desk Review – December 2016
  - TC/SAS recommend SCA model for management advice
  - Because of data changes, necessitated a peer review



# Red Drum Stocks

- Two management units
  - Northern stock (Atlantic coast north of NC-SC border)
  - Southern stock (Atlantic coast south of NC-SC border)
- Split supported by differences in genetics, life history characteristics, habitat use, and tagging data



# Statistical Catch-at-Age Models

- Model code essentially unchanged from SEDAR18
- Special Features of Models
  - Selectivity estimated for ages 1-3 and for ages 4 and 5+, estimated as a proportion of age 3 selectivity
  - Use of external tag-based F estimates as inputs in northern model
  - Data weighting explored using a series of hypotheses

# Statistical Catch-at-Age Models

- Addressed some recommendations from SEDAR18
  - Addition of long line surveys
  - Different maturity schedules for each stock
  - Explored iterative re-weighting
  - Examined correlations between parameters



# Northern Model Results

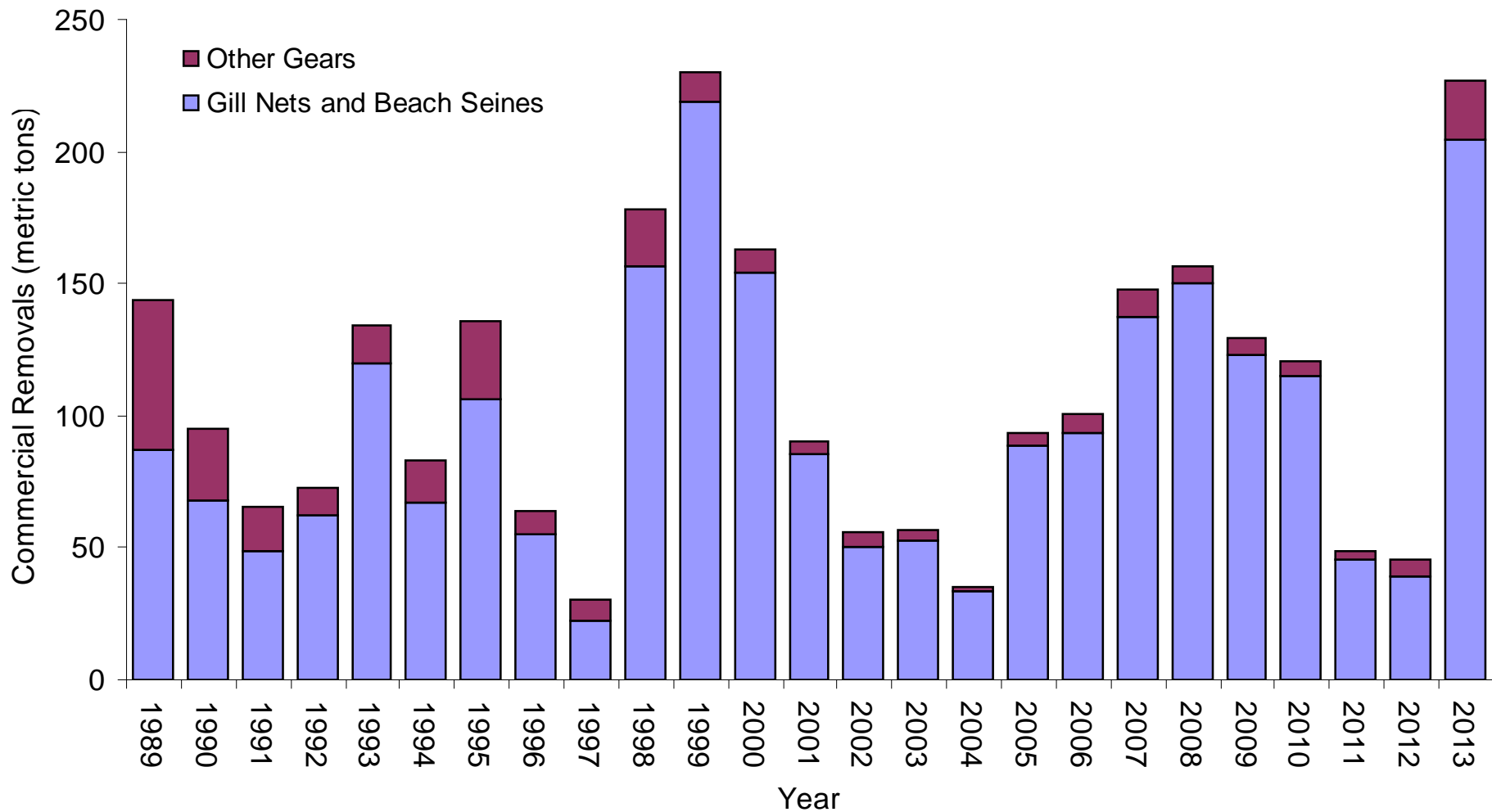


# Northern Model

- 1989-2013
- Ages 1 – 7+
- 4 fleets: Gill net/Beach Seine, Comm Other, Rec Harvest, Rec Dead Discards
- Addition of NC long line survey (2007-2013)
- Updated weight-at-age info to match SS3
- External estimates of F from tagging data (1989-2004)



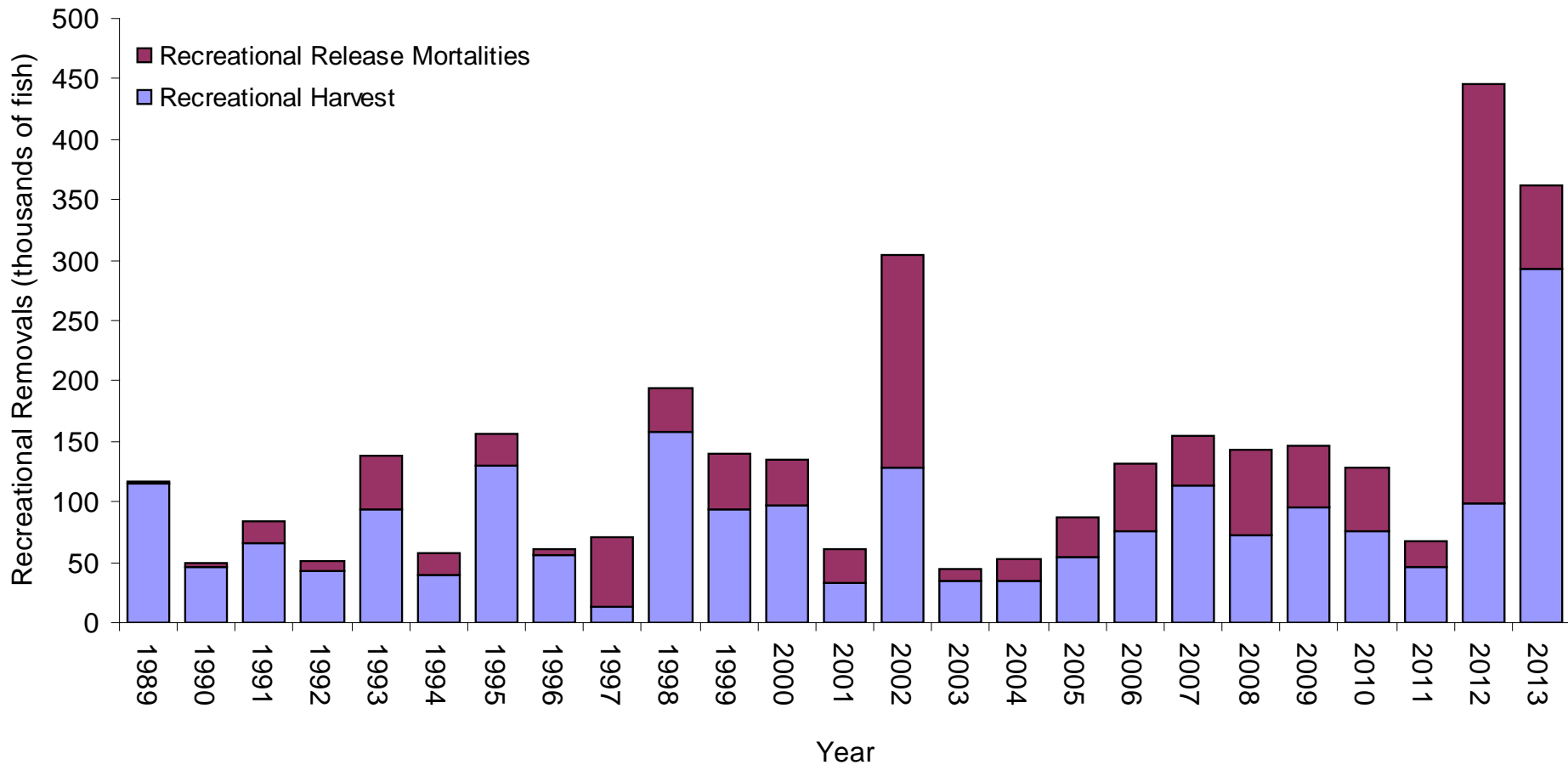
# Commercial Removals



\*\*gill nets include dead discards with 5% of fish discarded alive assumed to die due to capture



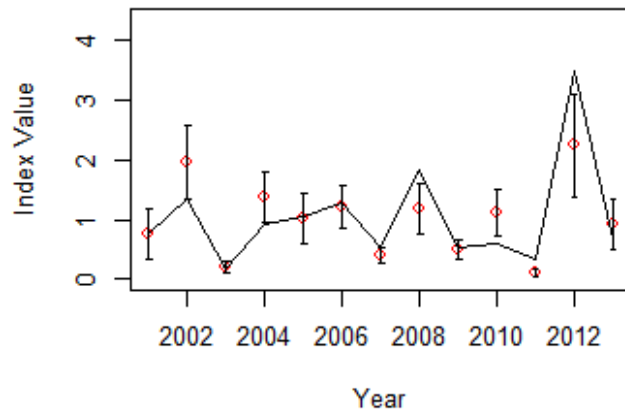
# Recreational Removals



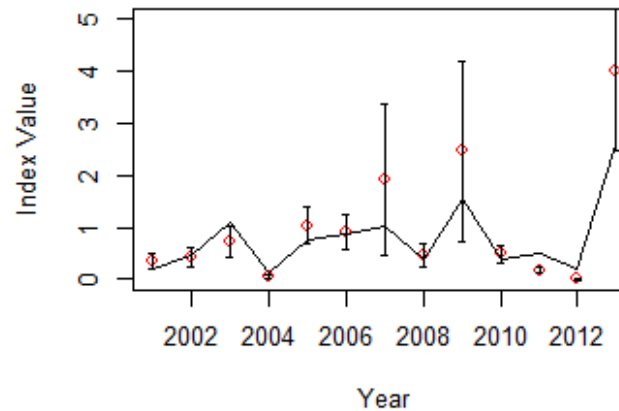
\*\*8% mortality rate assumed for recreational releases

# Fits to Indices

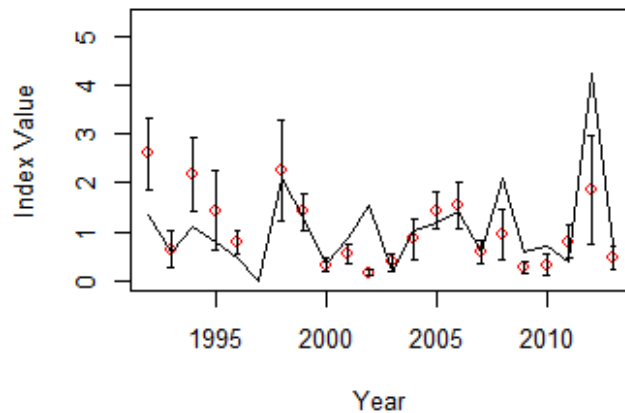
**NCGNS1 1**



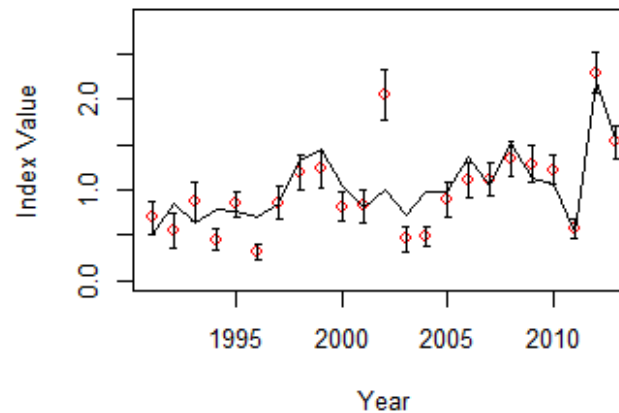
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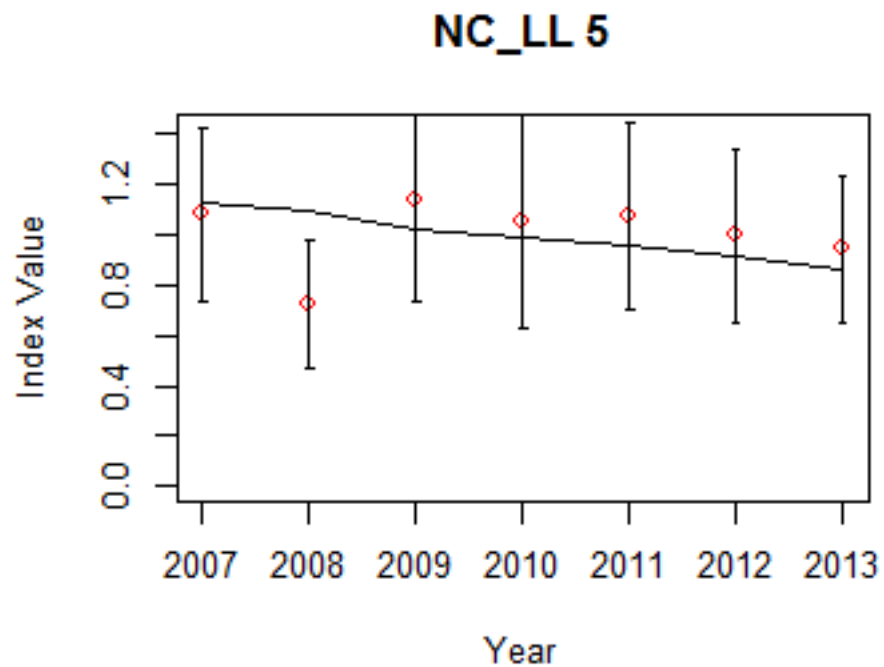
**NC\_JAI 3**



**MRFSS 4**

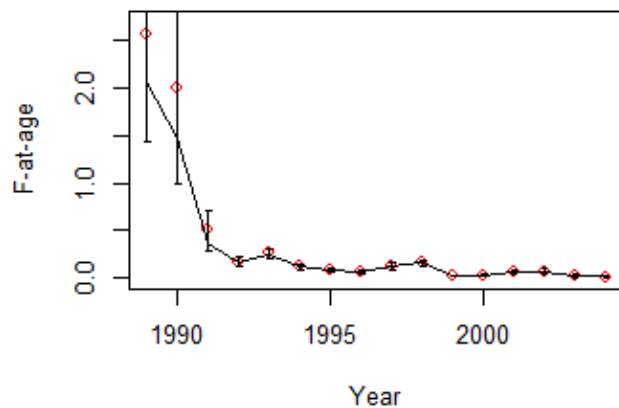


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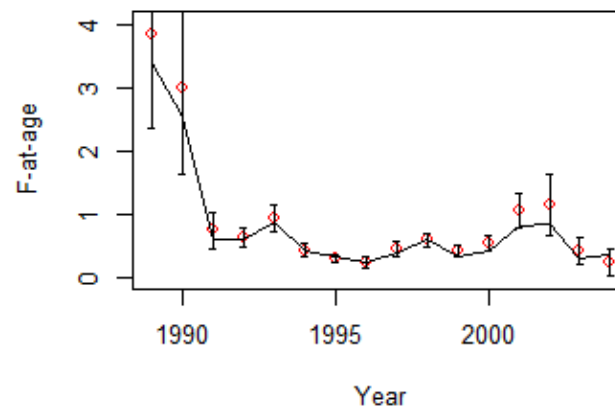


# Fits to Harvest Fleet Tagging Data

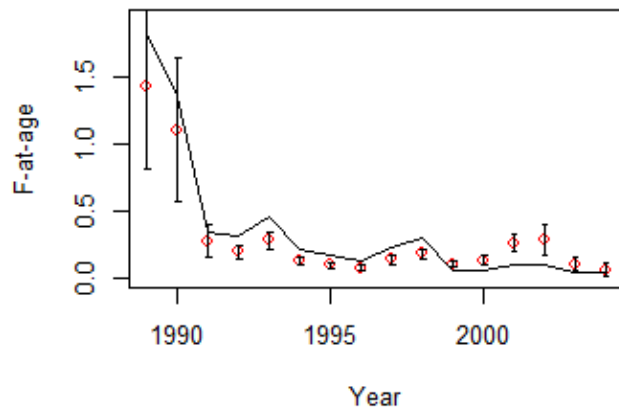
Age 1



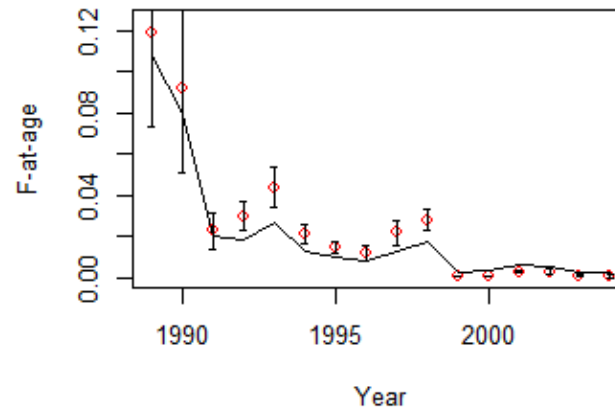
Age 2



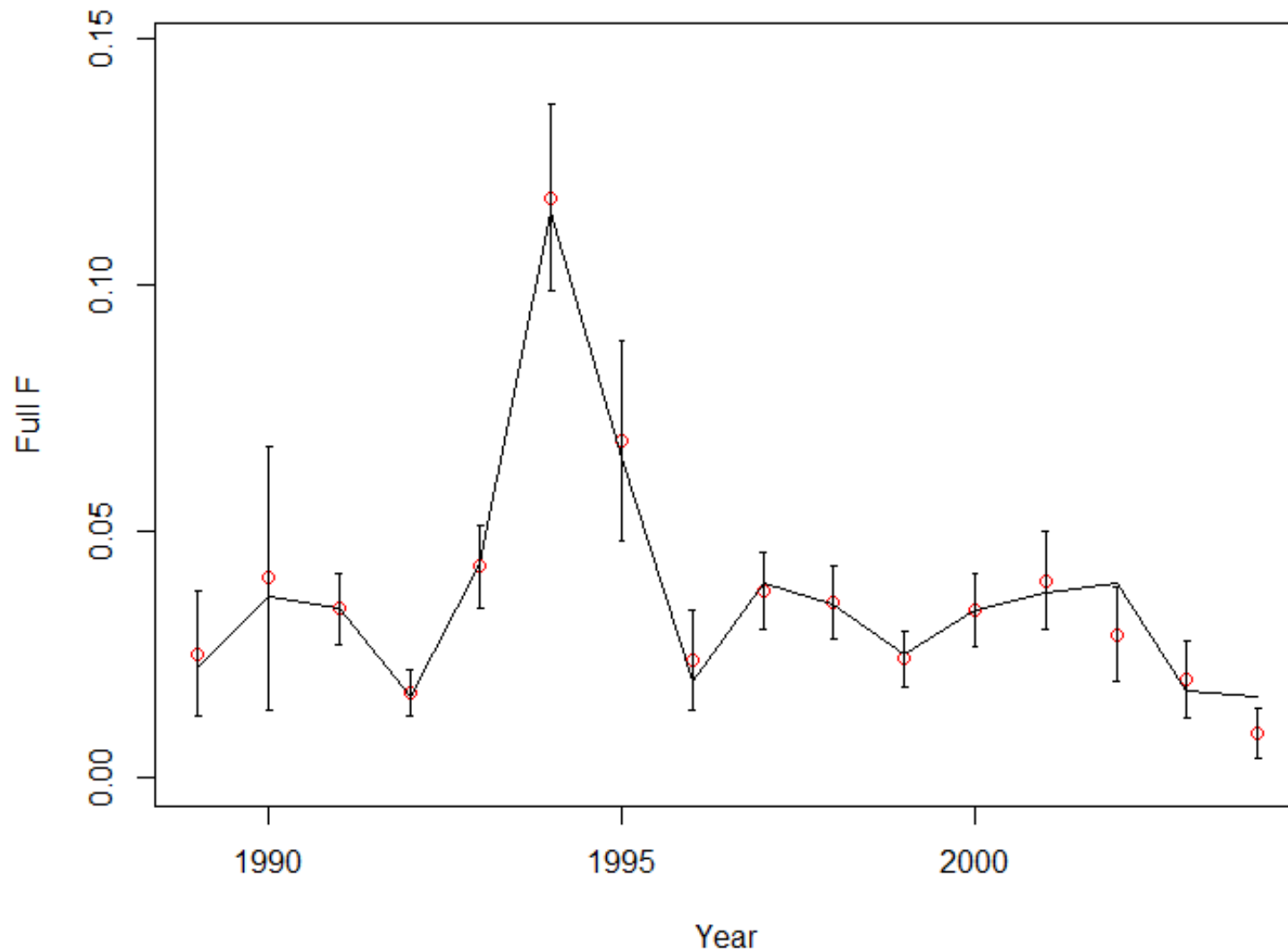
Age 3



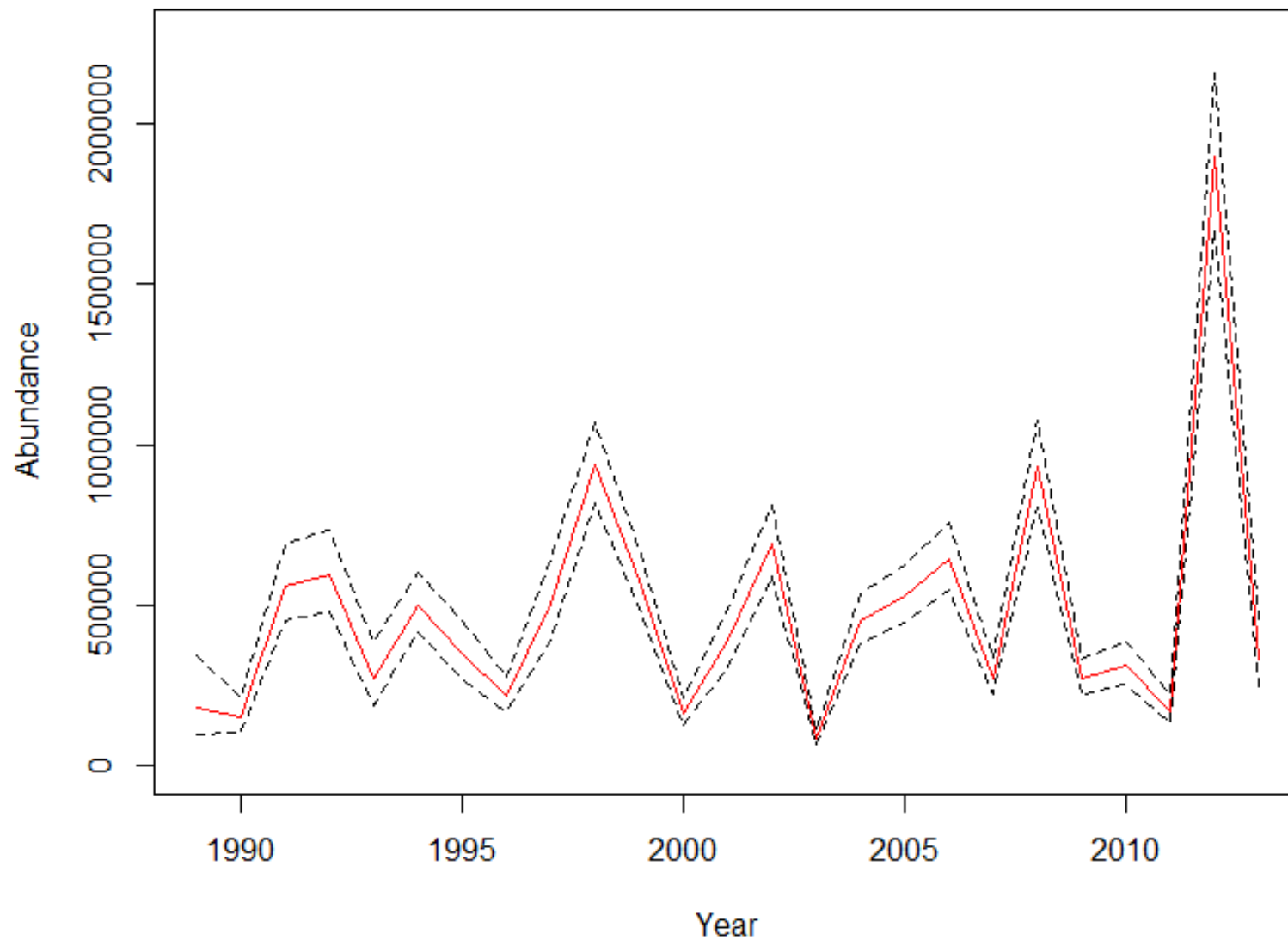
Age 4



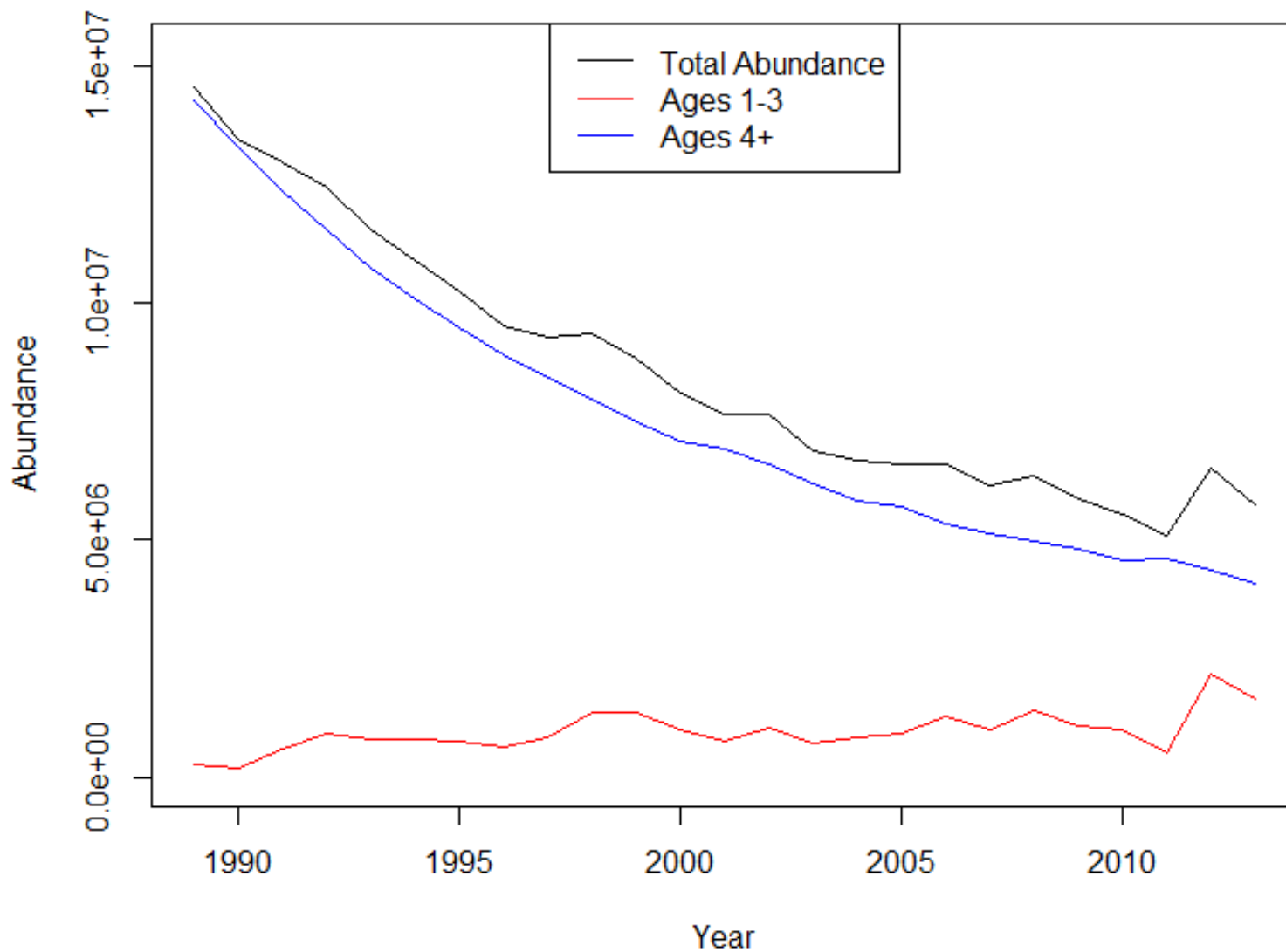
# Fit to Release Fleet Tagging Data



# Age-1 Recruitment

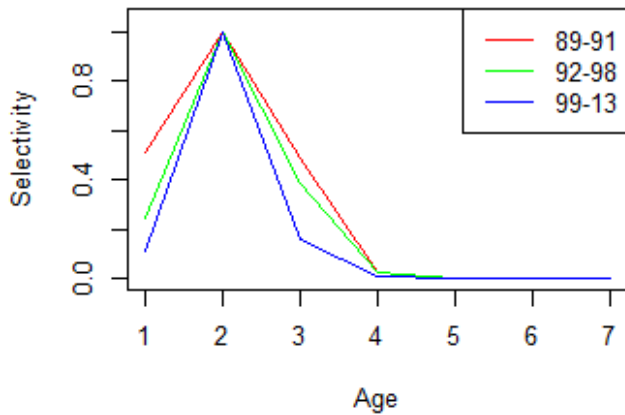


# Population Abundance

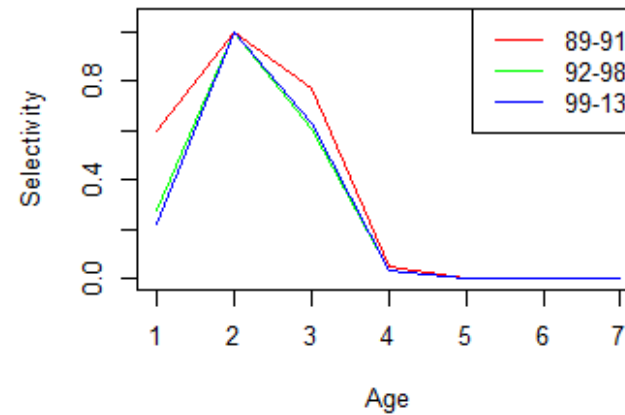


# Selectivities by Fleet

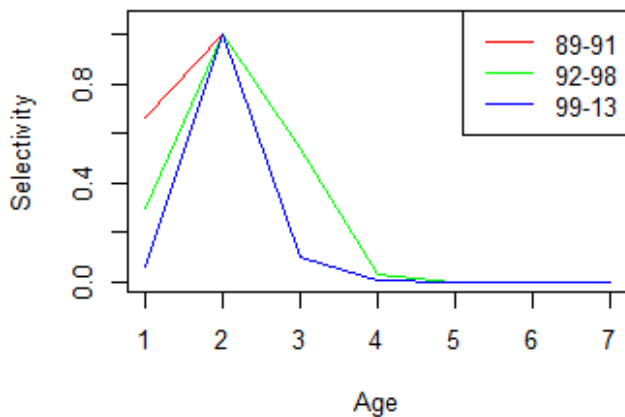
**CommGNBS**



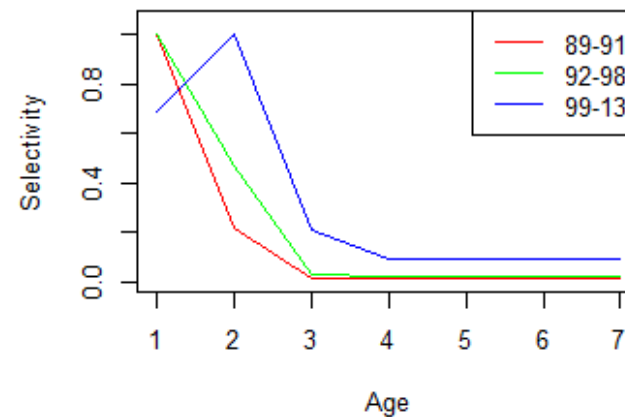
**CommOther**



**RecHarv**

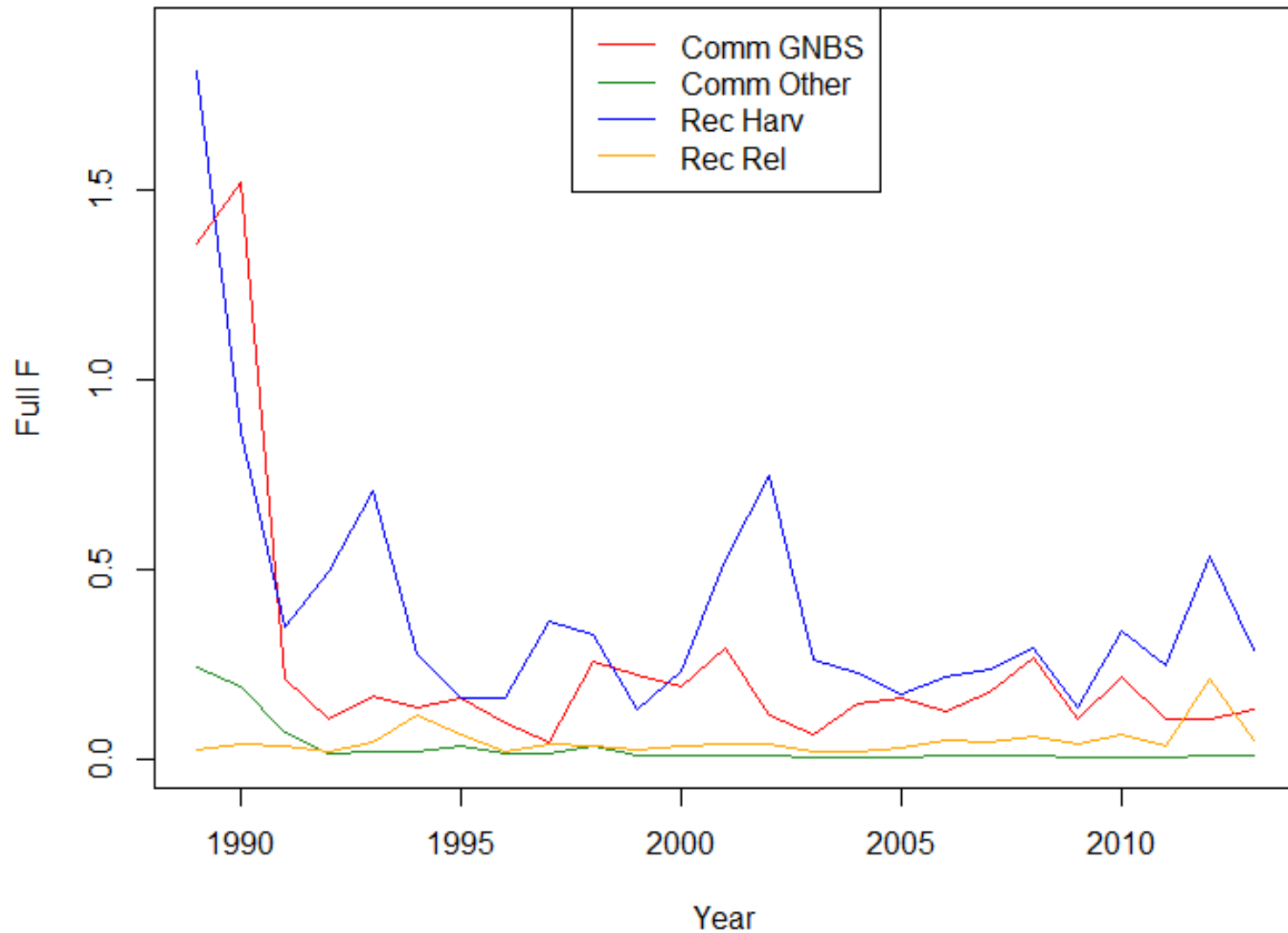


**RecB2**

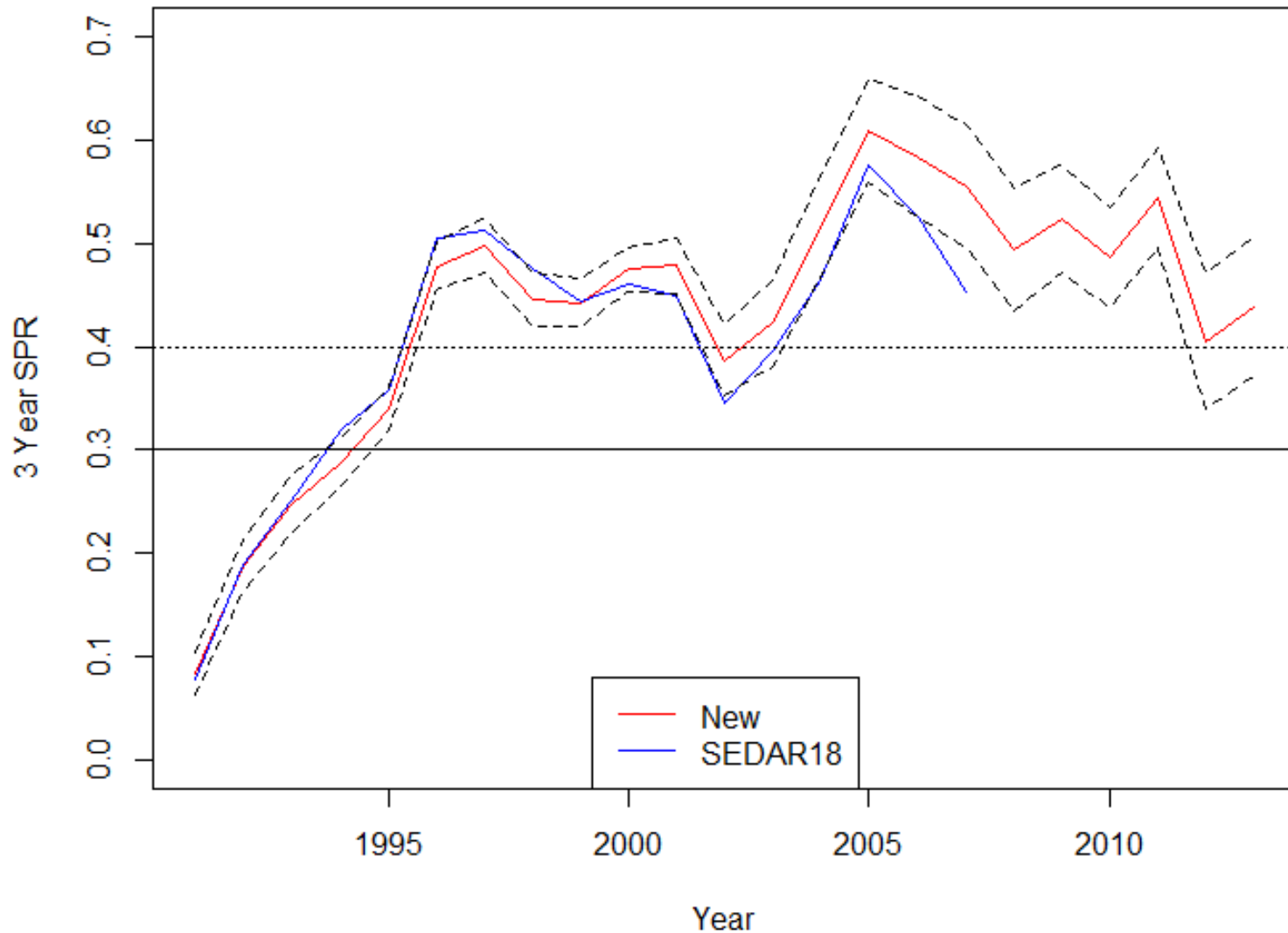




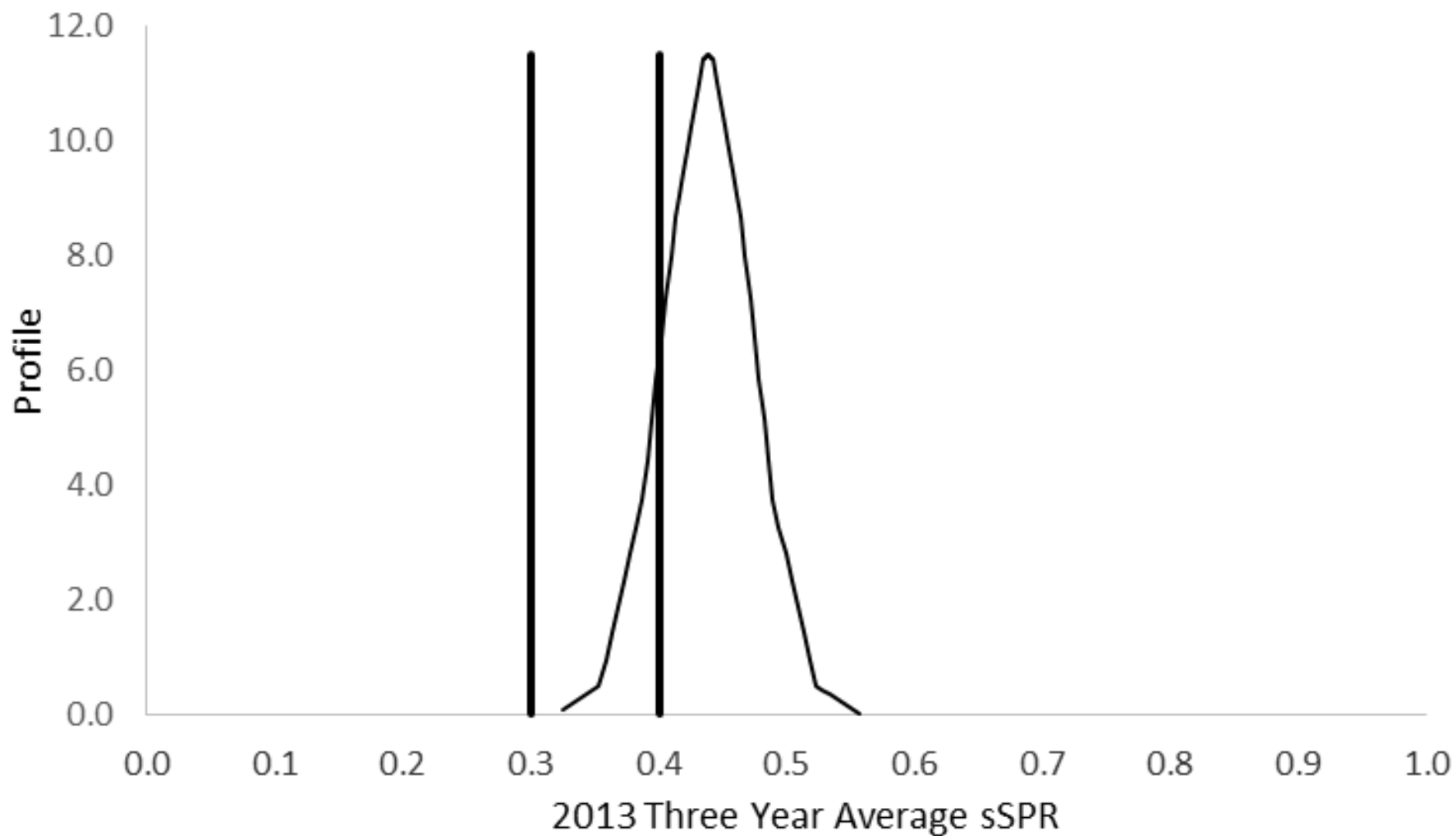
# Fleet Specific Annual F



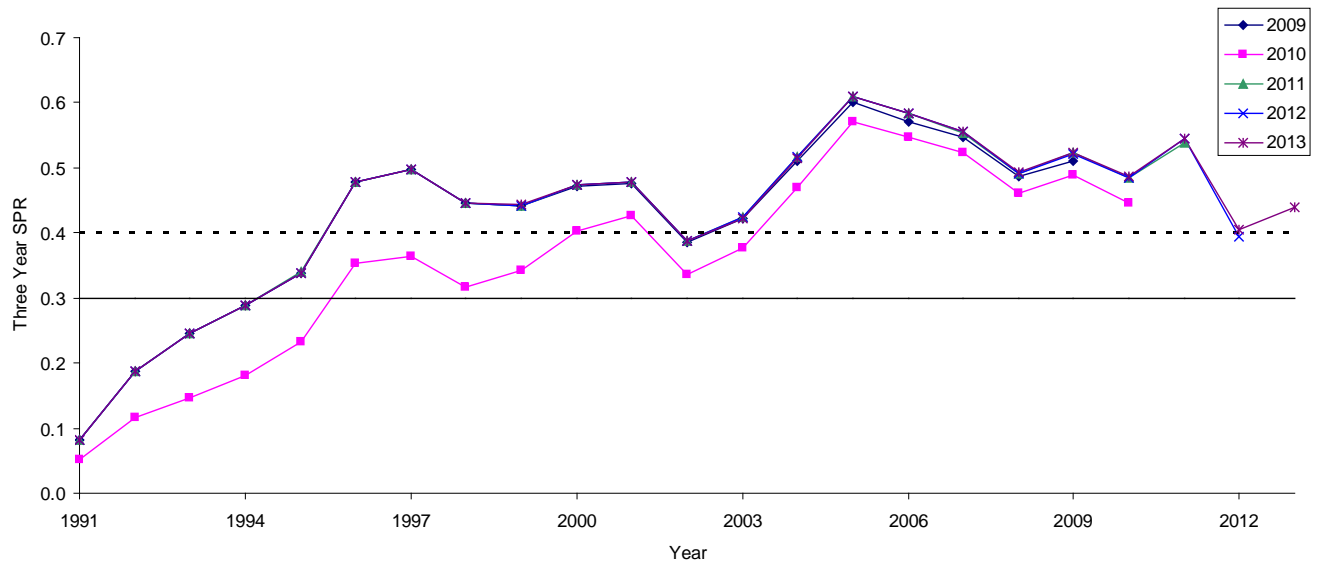
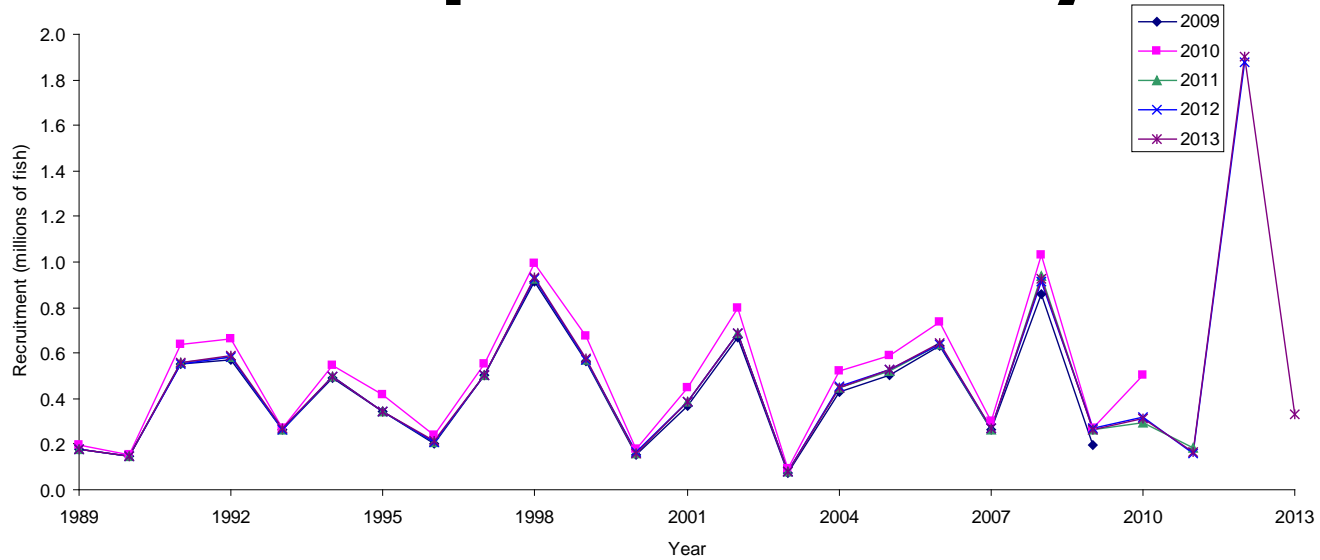
# Three Year Average SPR



# Profile Likelihood

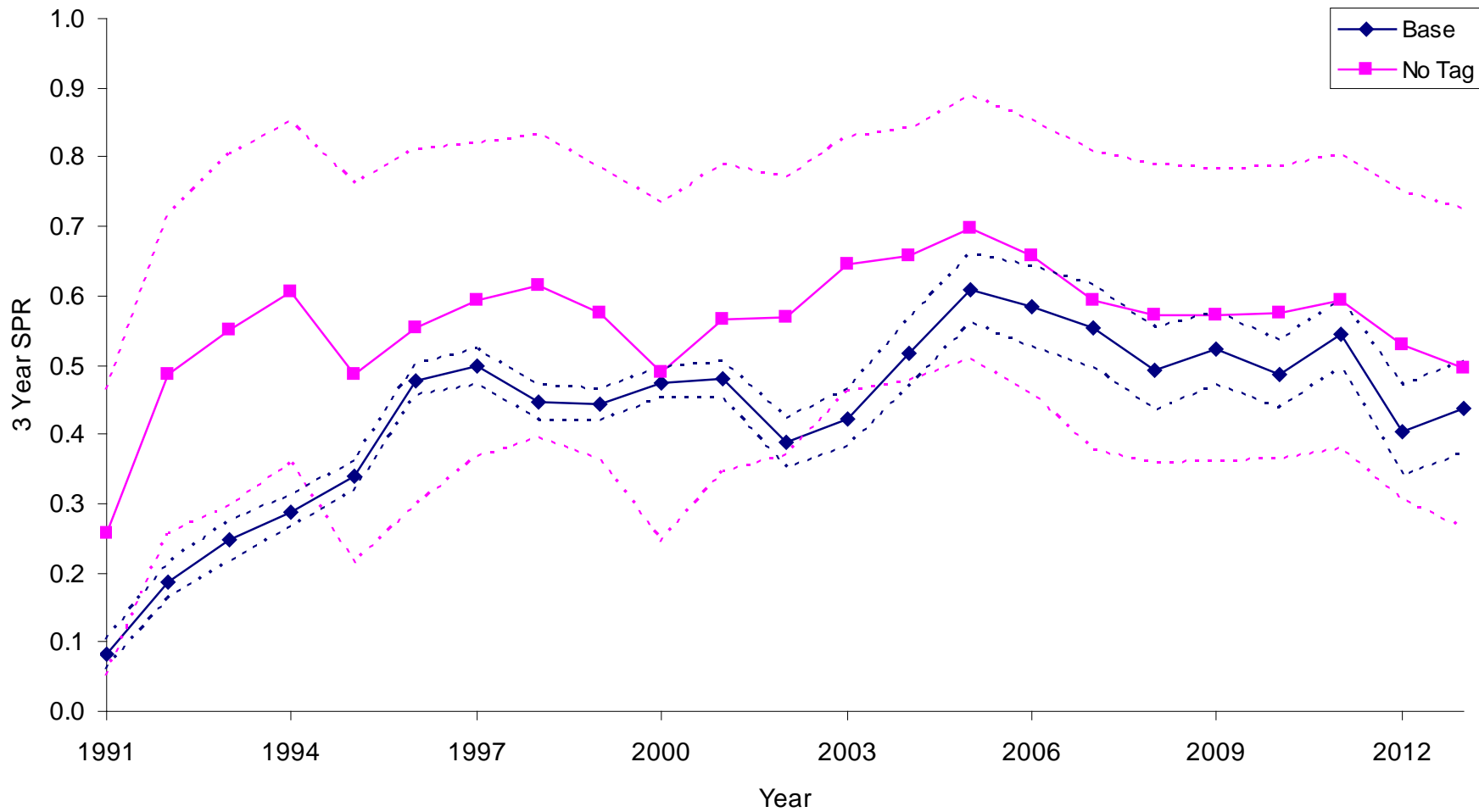


# Retrospective Analysis





# Removal of Tag Data





# Southern Model Results

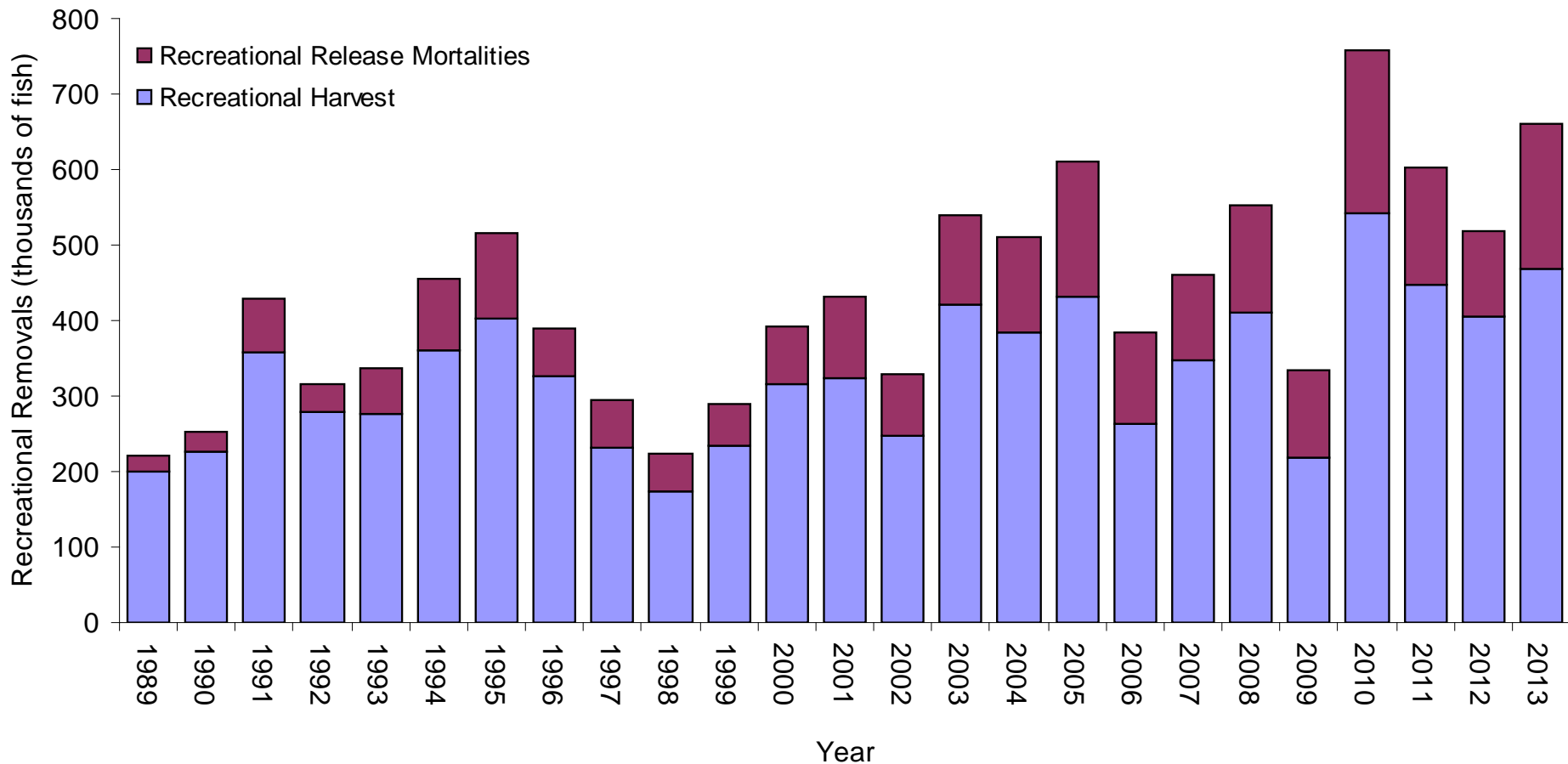


# Southern Model

- 1989-2013
- Ages 1 – 7+
- 5 fleets: FL harvest, GA harvest, SC harvest, GA/SC dead discards, FL dead discards
- Addition of SC stop net survey, SC age-1 trammel net survey, SC 1/3 mi long line survey & GA long line survey
- Removal of SC electrofishing survey
- Updated maturity schedule
- Updated M and weight-at-age info to match SS3



# Recreational Removals

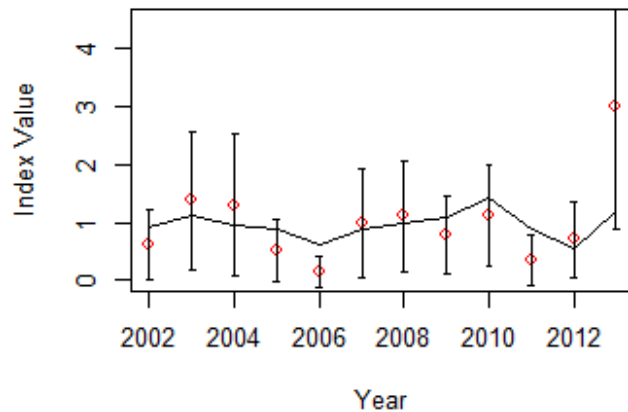


\*\*8% mortality rate assumed for recreational releases

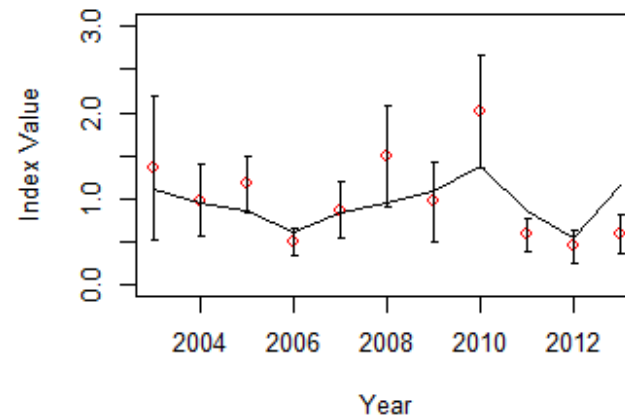


# Fits to Indices

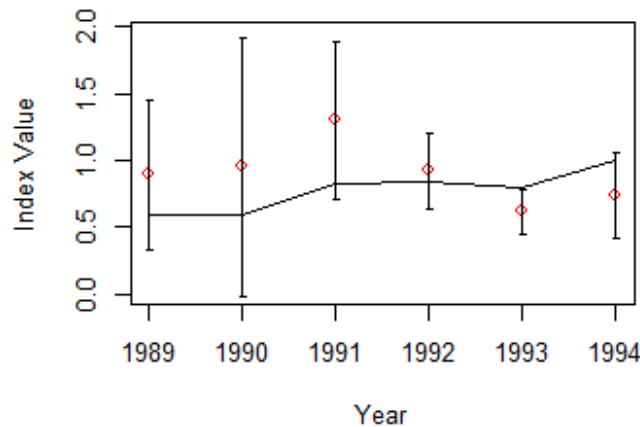
**FLyoy 1**



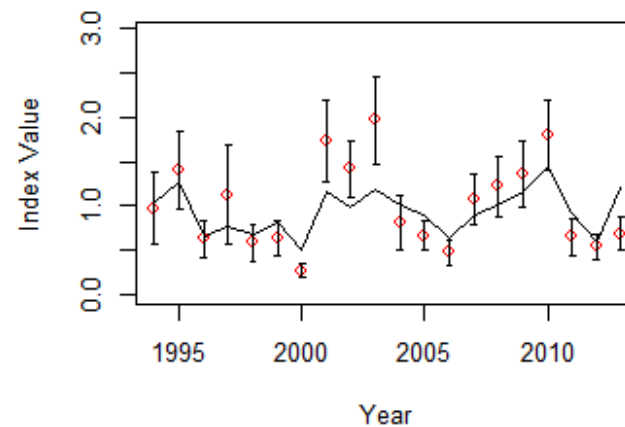
**GAyoy 2**



**SCstop 3**

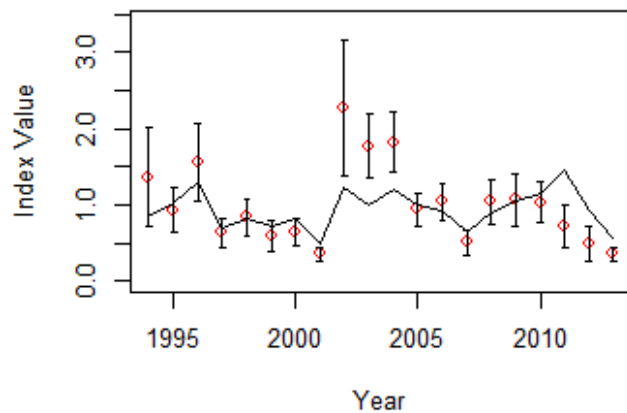


**SCtram1 4**

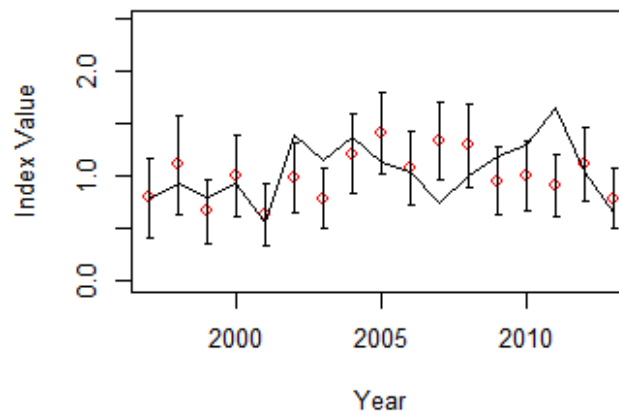


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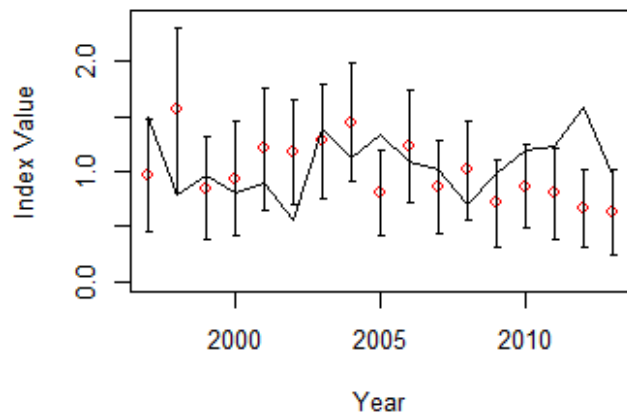
**SCtram2 5**



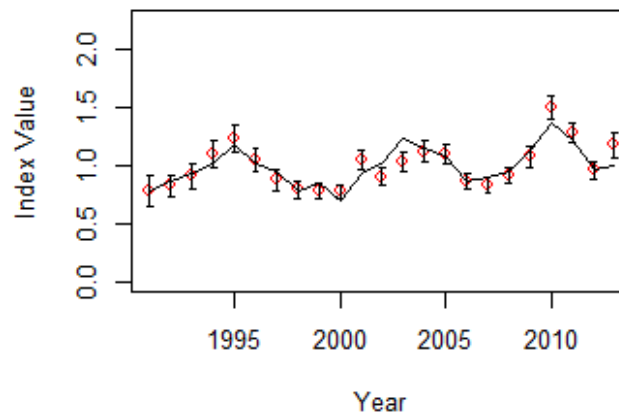
**FLhs2 6**



**FLhs3 7**

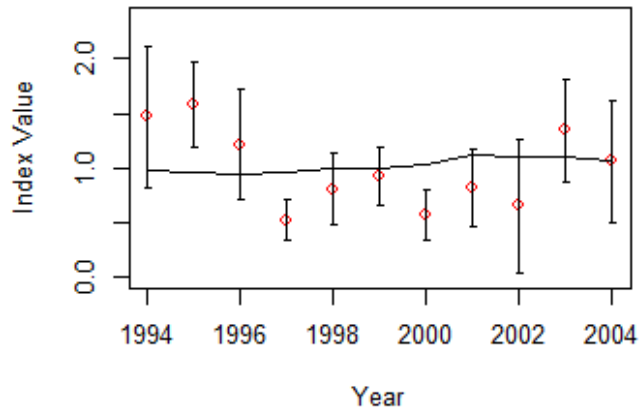


**MRFSS 8**

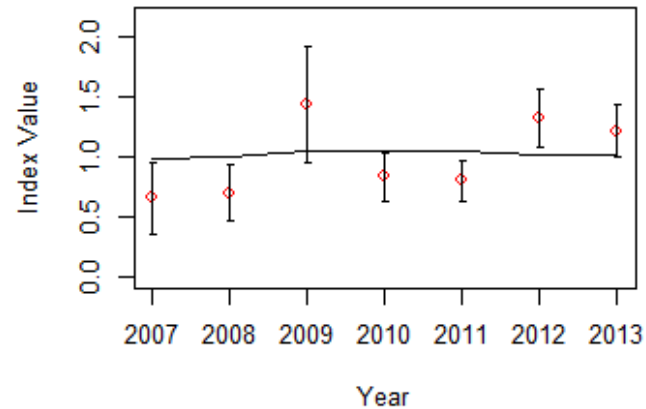


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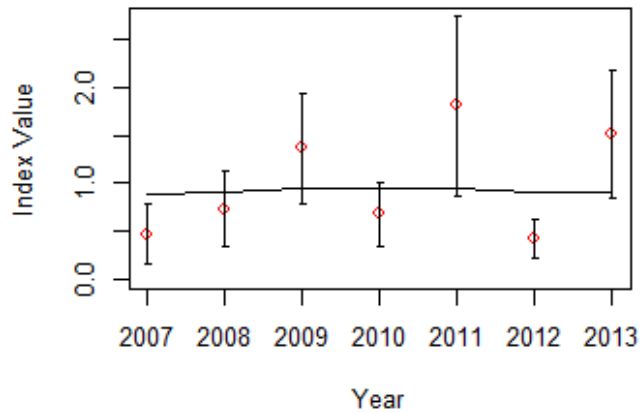
**SCadults1m 9**



**SCadults13m 10**



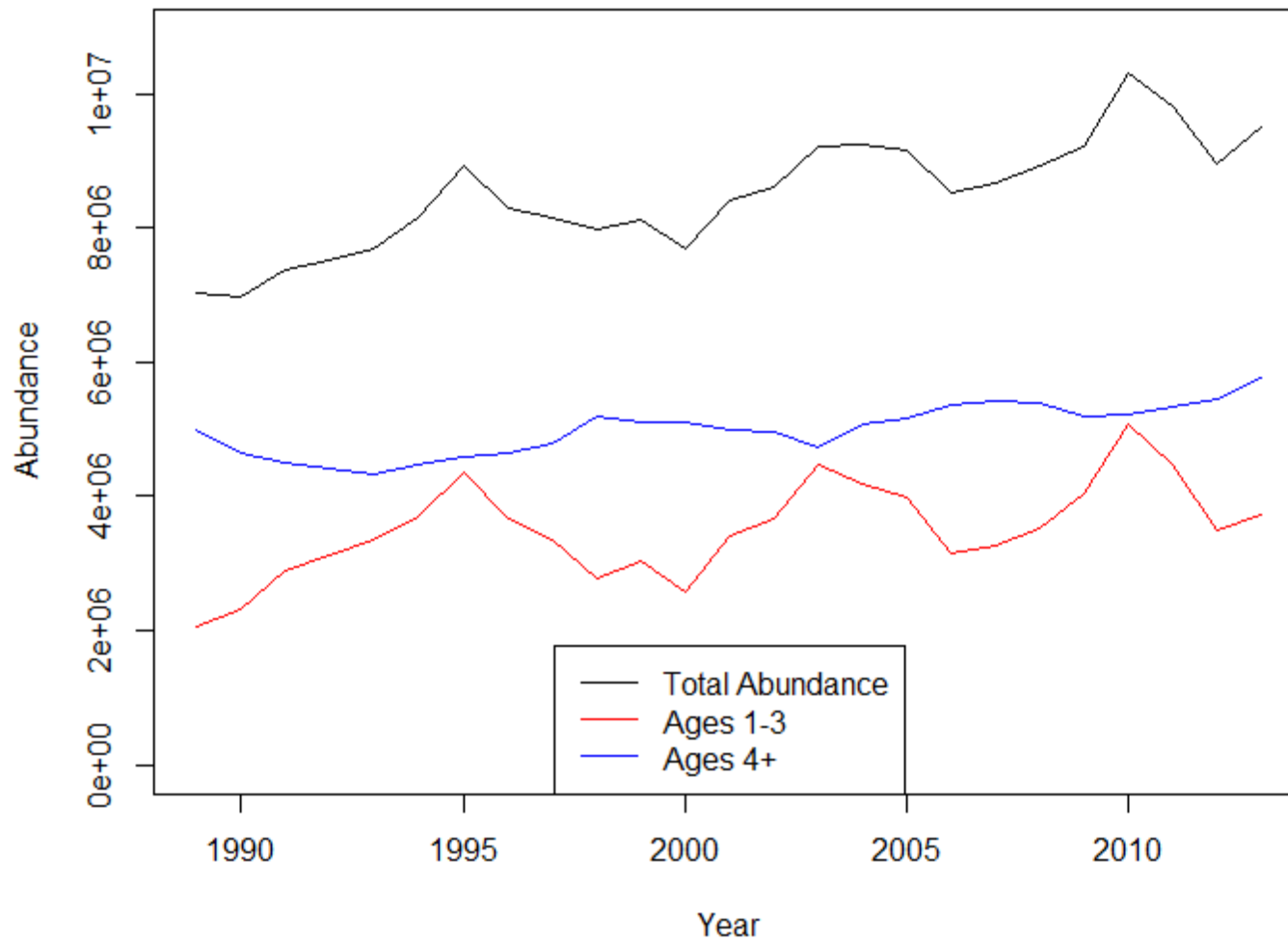
**GAadults 11**



# Age-1 Recruitment

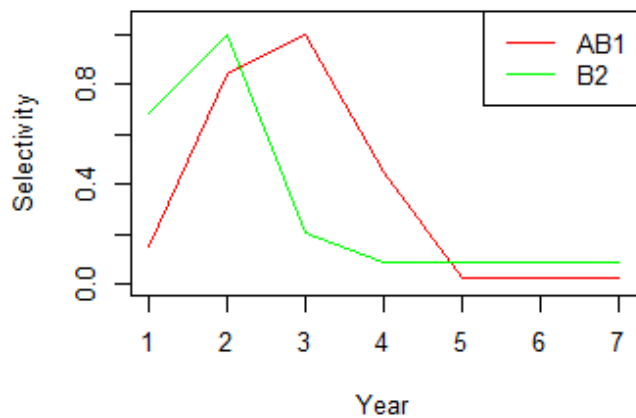


# Population Abundance

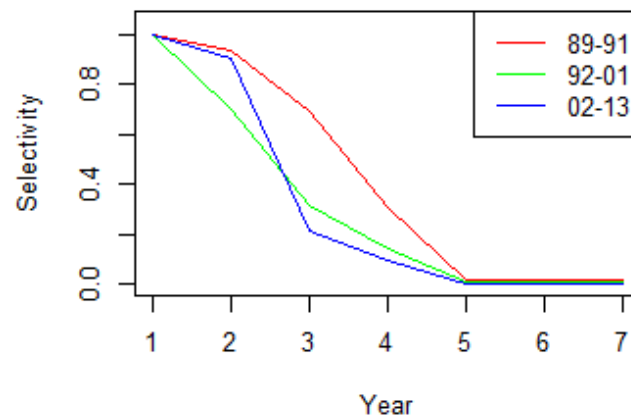


# Selectivities by Fleet

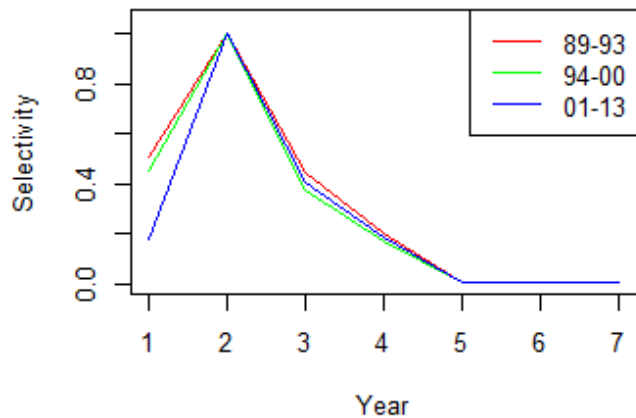
**FLrec**



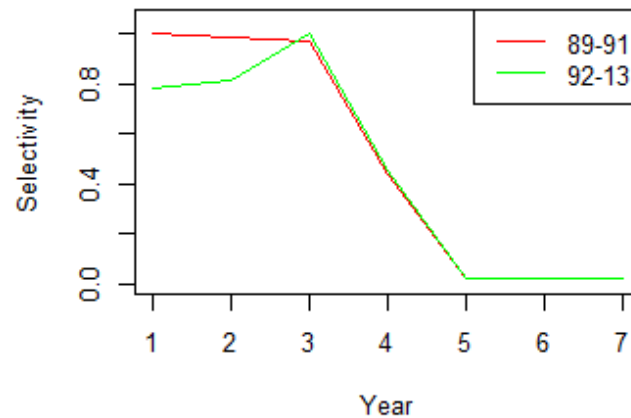
**Gareccom**



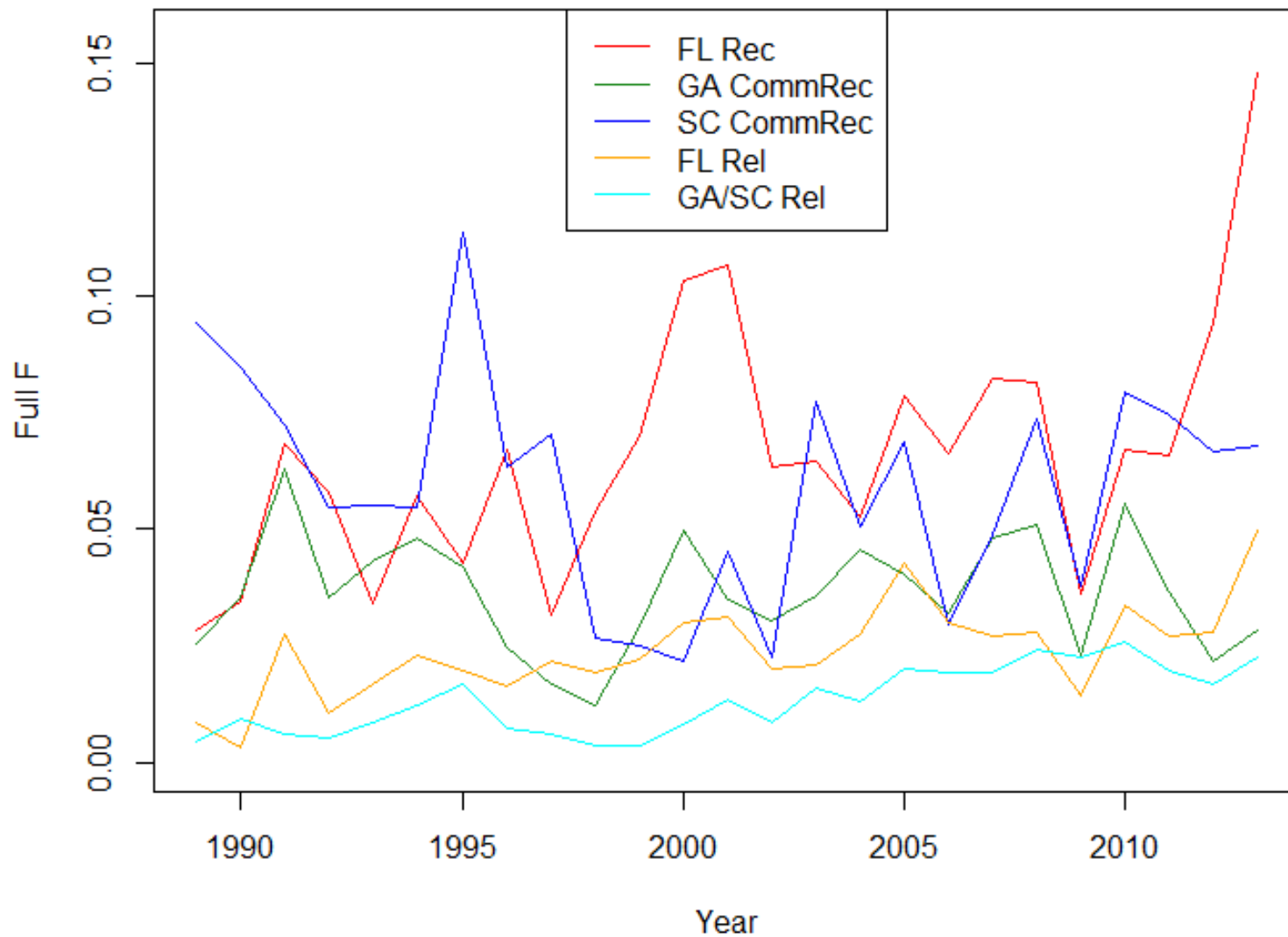
**SCreccom**



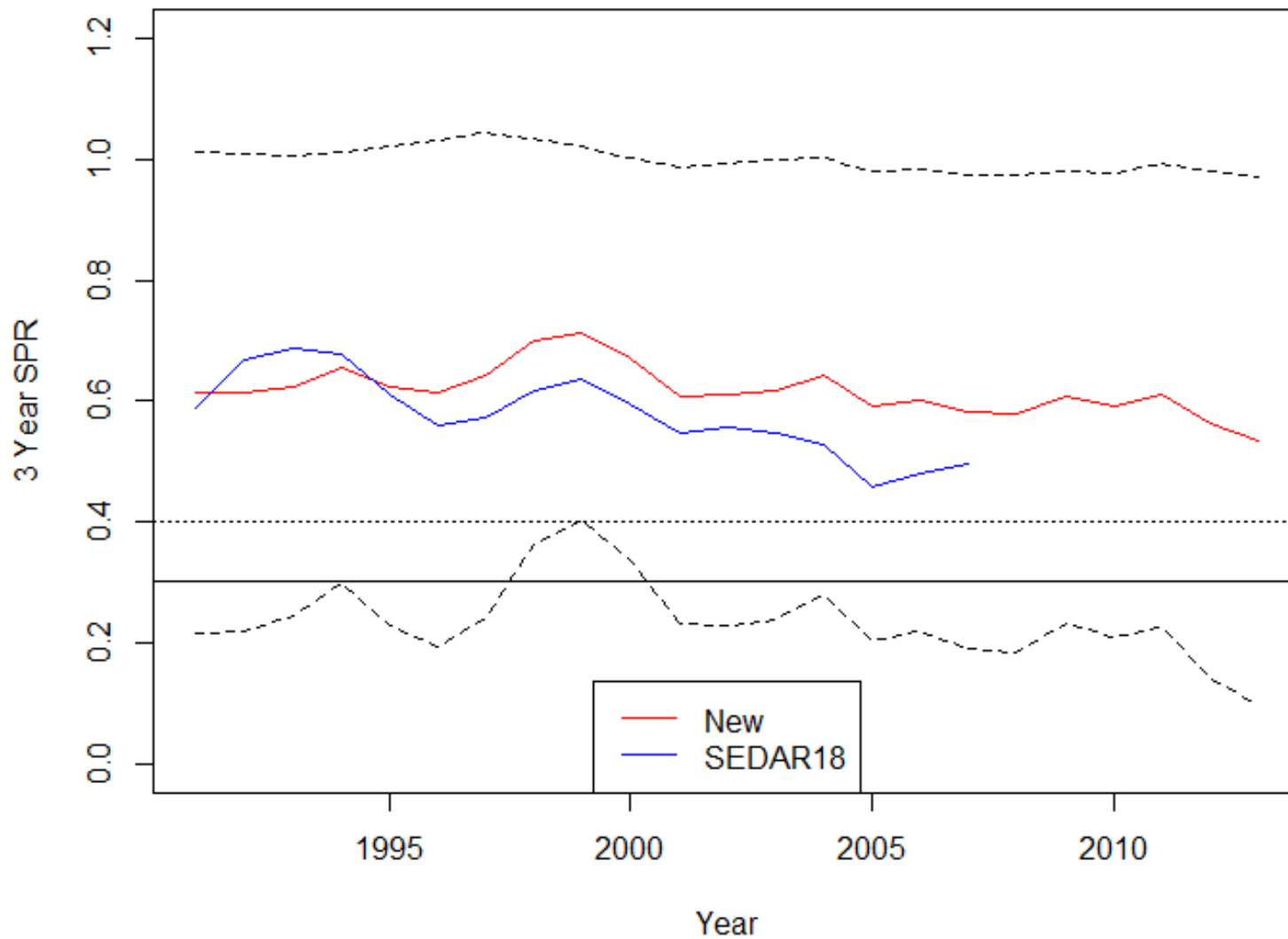
**GASCreCB2**



# Fleet Specific Annual F

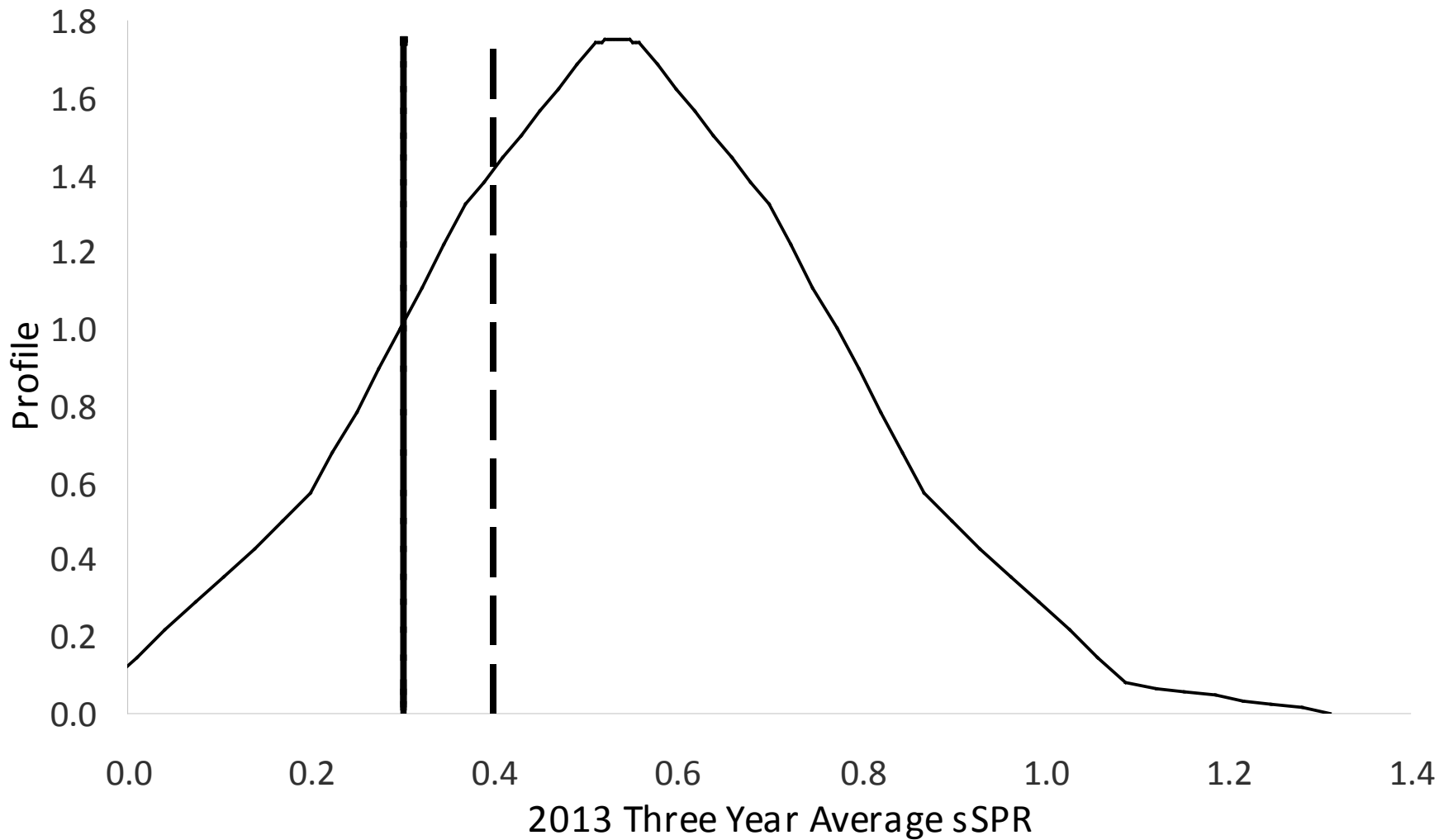


# Three Year Average SPR

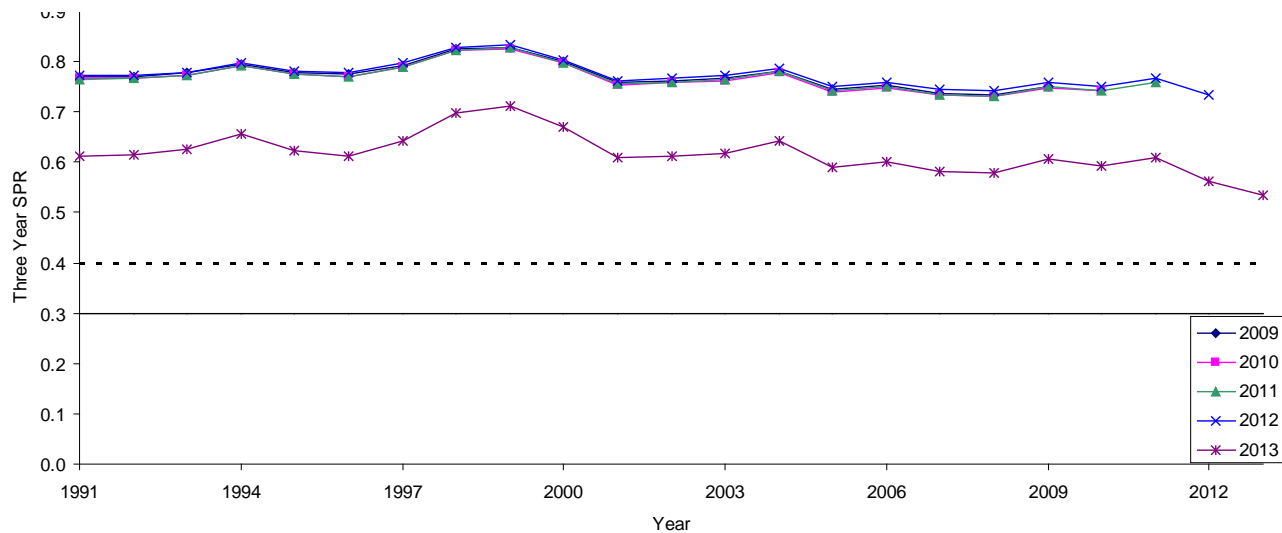
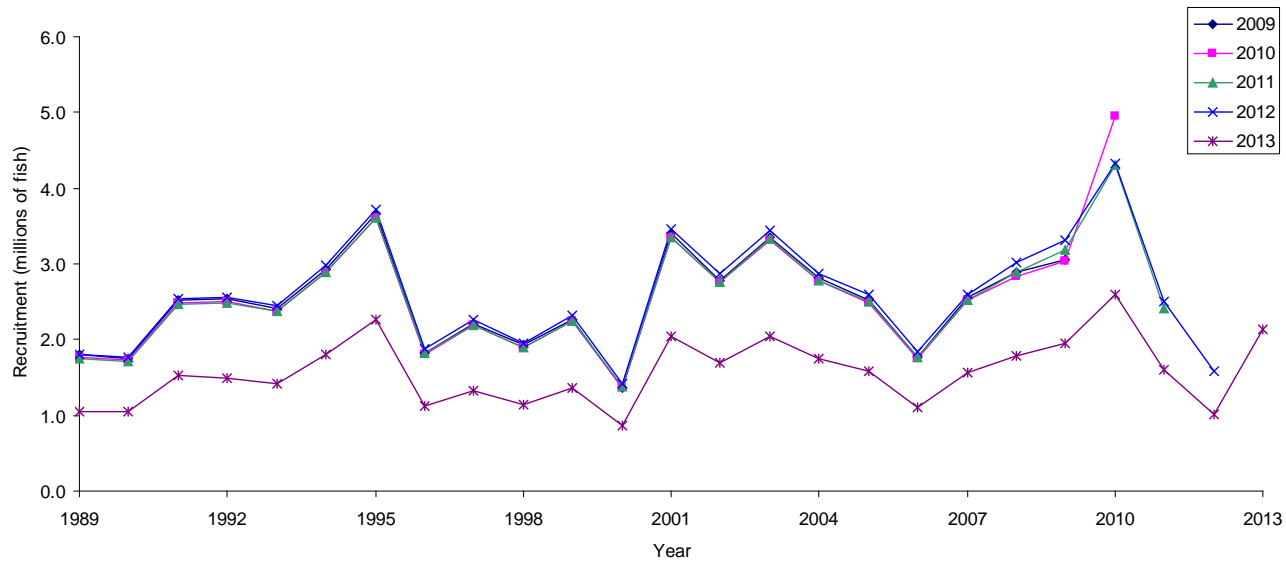




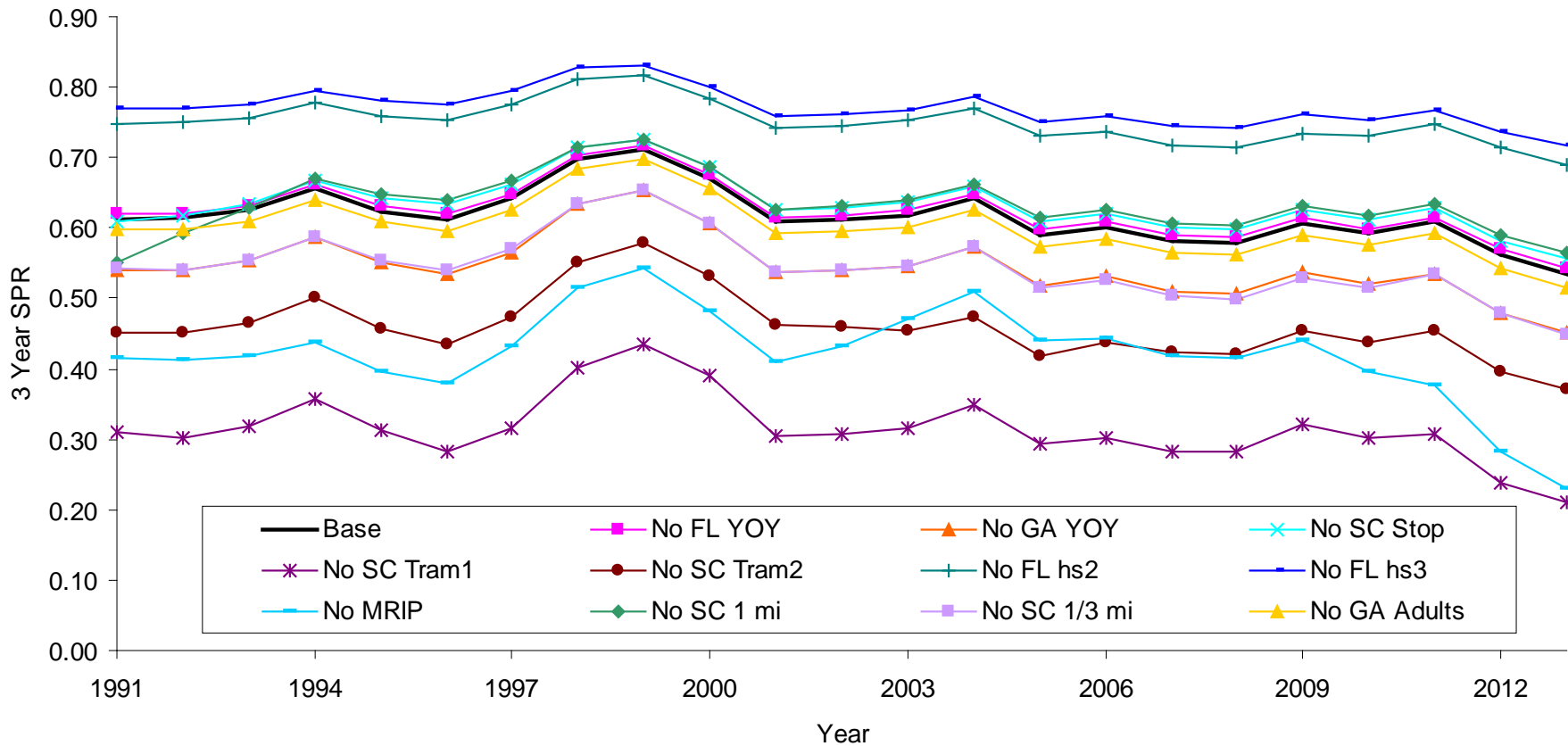
# Profile Likelihood



# Retrospective Analysis



# Removal of Indices



# Model Concerns

- Some issues seen in SEDAR18 persisted
  - Southern stock results still very uncertain
  - Plus group is large
    - Larger than expected in north
    - Don't see trends in abundance expected with regulation changes
  - Pooling of data across fleets in the catch-at-age
- Some issues improved
  - Model results less sensitive to inclusion of tagging data in north



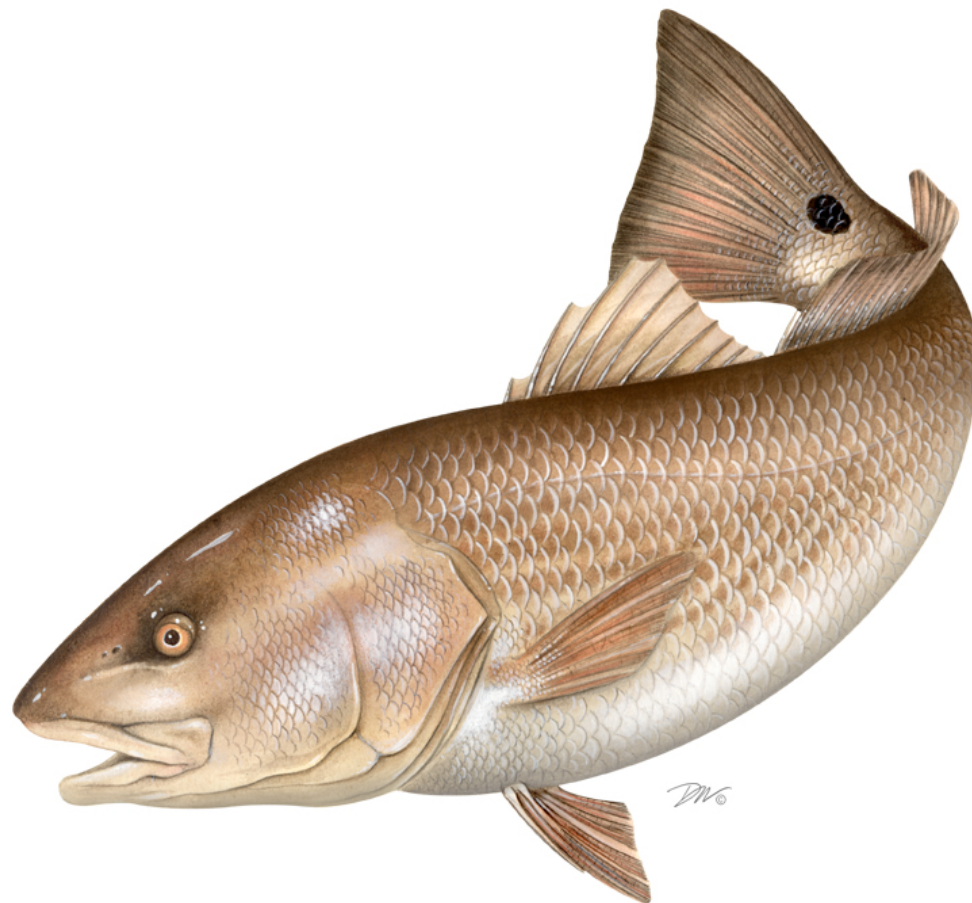
# Improvements for Future

- Inclusion of tagging data
- Explore fleets and time blocks
  - Ways to reduce parameters in south
  - Data pooling
- Estimation of selectivity for the release fleet in the north and FL discard fleet in the south
- Explore data weighting more

# Conclusions

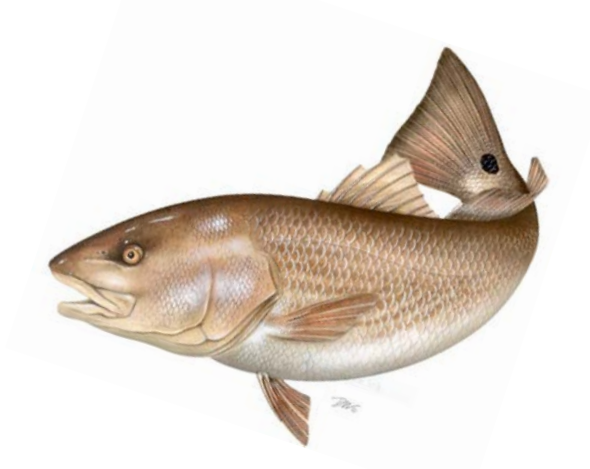
- Still unable to develop overfished reference points
- Northern Stock
  - Stock likely not experiencing overfishing
  - No directional retrospective patterns
  - Model results less sensitive to inclusion of tag data
- Southern Stock
  - Stock likely not experiencing overfishing
  - Model results very uncertain
  - Retrospective pattern shows low SPR in 2013 compared to all other years

# Questions?





# Red Drum SCA Stock Assessment Desk Review Report



Presented to ASMFC

South Atlantic Fisheries Management Board

February 2, 2017



# ASMFC Stock Assessment Peer Review Process



## Red Drum Stock Assessment Subcommittee and TC

- Developed Northern and Southern regional SCA assessments

## Scientific Peer Review Panel

- 2 Technical Reviewers, with combined expertise in population dynamics, stock assessment modeling, statistics, and biology
- Scientific review focusing on data inputs, assessment quality

## Products

- Stock Assessment Report and Review Panel Report (for Board and TC), and Assessment Overview (public)

<http://www.asmfc.org/species/red-drum>

(to be posted online following Winter Meeting)

# Stock Assessment Desk Review Process



## Review Panel:

Dr. Paul Rago (retired)

NMFS Northeast Fisheries Science Center

Population Dynamics Branch



Dr. Matt Cieri

Maine Department of Marine Resources

Biological Monitoring and Assessment Division



December 13 webinar – reviewers and assessment team

Two Panel calls to develop findings and complete review report

# Review Panel Overall Findings

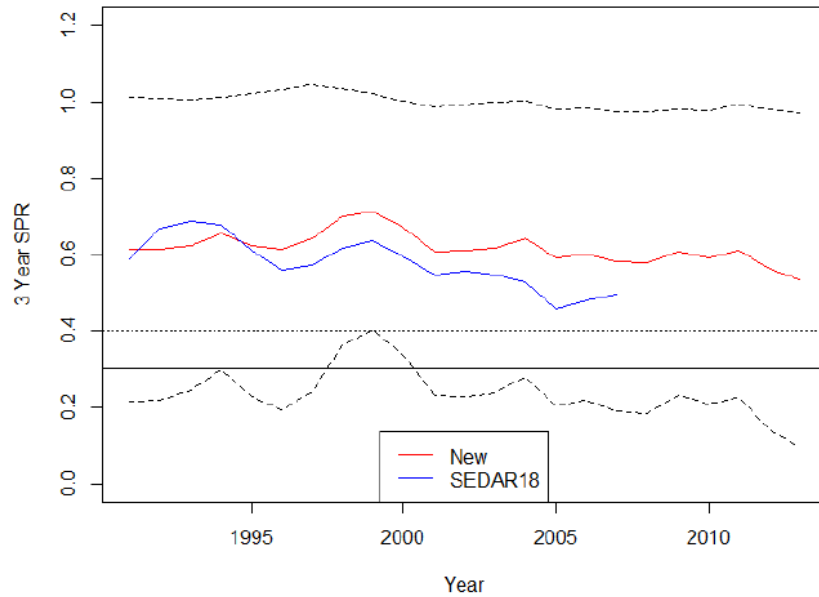


- Stock assessment passed peer review
  - Southern stock: overfishing is not occurring
    - $SPR_{2011-2013} = 54\%$
  - Northern stock: overfishing is not occurring
    - $SPR_{2011-2013} = 44\%$
    - No determination on overfished / not overfished
- Panel finds stock assessment acceptable for management use
- No major signs of trouble; BUT small increases in F on older fish → overfishing

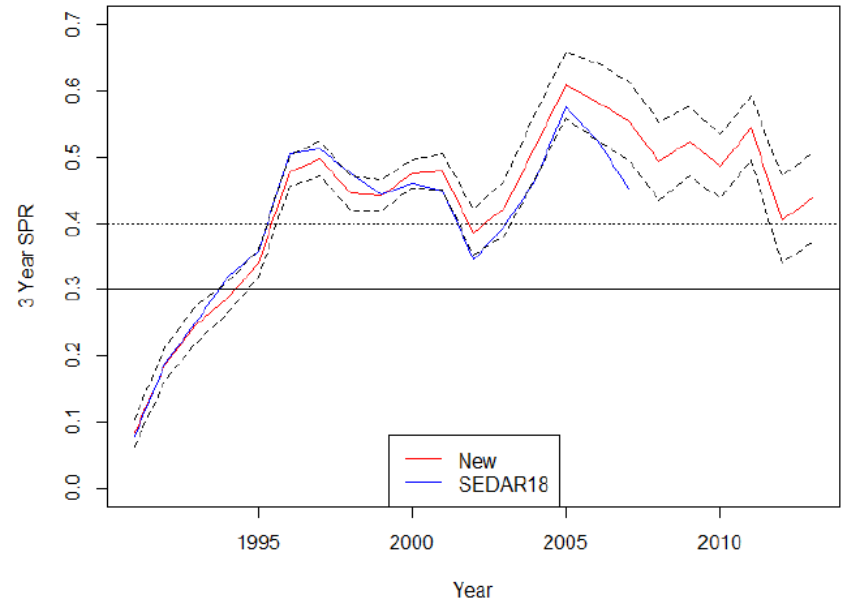
# Review Panel Overall Findings



## South



## North



# Review Terms of Reference



- ✓ **ToR 1:** *Evaluate the collection, presentation, and treatment of fishery-dependent and fishery-independent data.*
- Very thorough evaluation of advantages, limitations of each data source; panel agrees with subset of surveys selected
- Uncertainty in magnitude and size composition of discards; research priority to advance future red drum assessments



# Review Terms of Reference



- ✓ **ToR 2:** *Evaluate stock structure as defined in the assessment*
  - Panel agrees with SC/NC border distinguishing the stocks, based on convincing life history and genetic differences
  
- ✓ **ToR 3:** *Evaluate the methods and models used to estimate population parameters and biological reference points*
  - Thorough evaluation of SCA model using several data weighting alternatives and model runs; Panel agrees with selected final runs
  - Inability of SCA model to establish reliable scale of population abundance or biomass prevents overfished/not overfished determination

# Review Terms of Reference



- ✓ **ToR 4:** *Evaluate the model diagnostic analyses in the assessment*
  - Sensitivity and retrospective analyses sufficient, reveal conflicting patterns between fishery catches and indices
  - Recommend likelihood profile analyses of age-specific  $F_s$
  
- ✓ **ToR 5:** *Evaluate methods to characterize and explain uncertainty in the assessment*
  - Error bounds and MCMCs of model parameter estimates sufficiently characterize uncertainty

# Review Terms of Reference



**ToR 6:** *Recommend best estimates of exploitation from the assessment*

- F estimates from SCA uncertain; small changes in F can cause big changes in SPR
- Explore relative F approach as alternative, given SCA model's uncertainties in scale of estimates

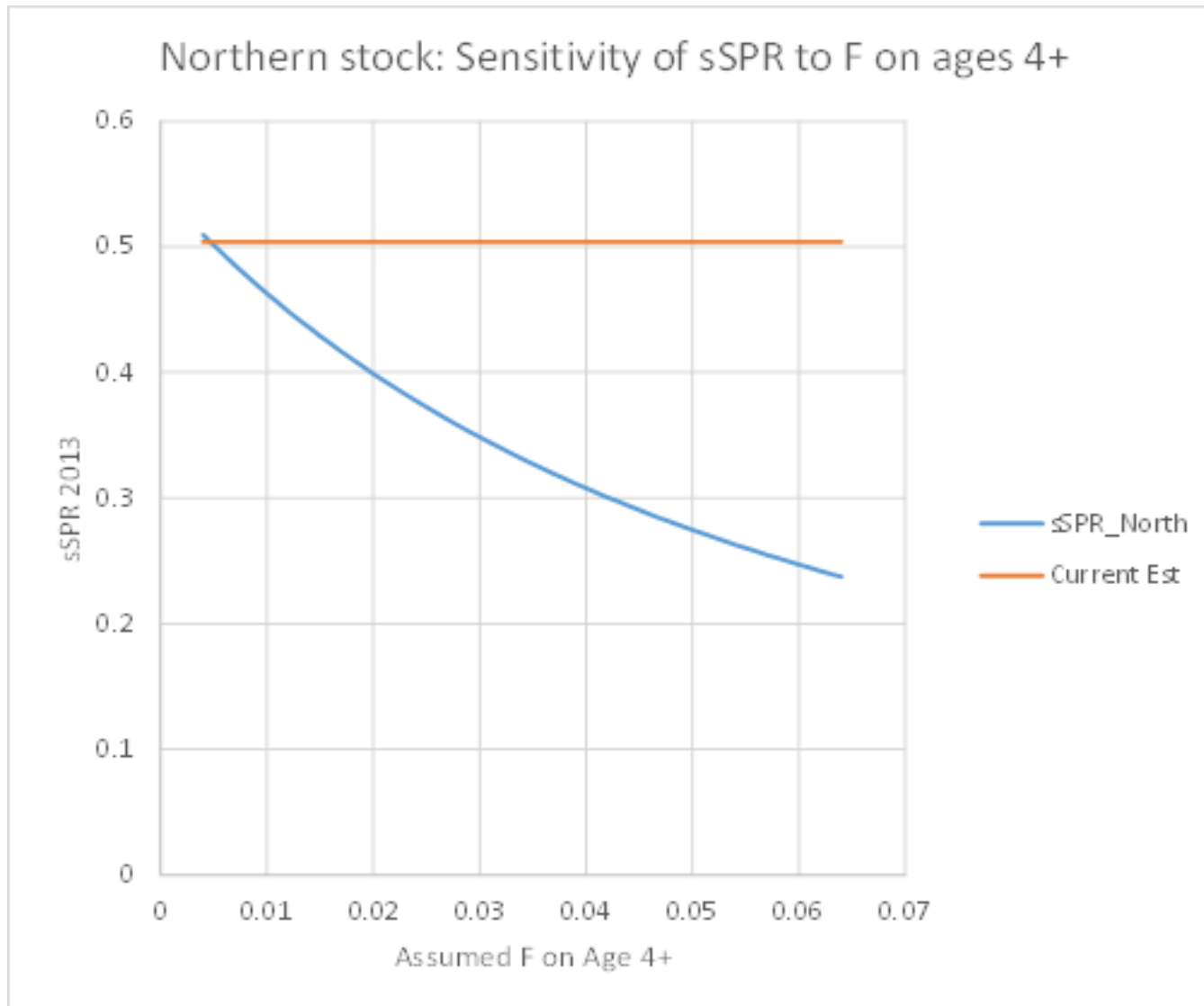


**ToR 7:** *Evaluate the choice of reference points and recommend stock status*

- Static SPR useful for measuring overfishing BUT VERY SENSITIVE to small changes in F
- Both stocks above management thresholds and targets; higher uncertainty in Southern stock status



# Review Terms of Reference



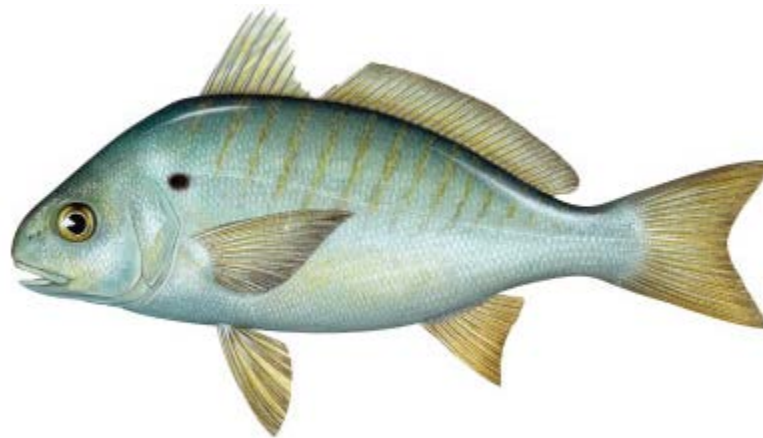
# Review Panel Overall Findings



- Review Panel concluded the SCA model can be used for estimating overfishing/not overfishing status (SPR)
- Concerns identified with Stock Synthesis models also apply to SCA models (both age-based)
  - Fishery exploitation pattern and conflicting trends in input data are the underlying problems
  - Better data → more reliable model results
- Panel recommends careful consideration of relaxing management measures, notably concern about increasing  $F_s$  on older fish

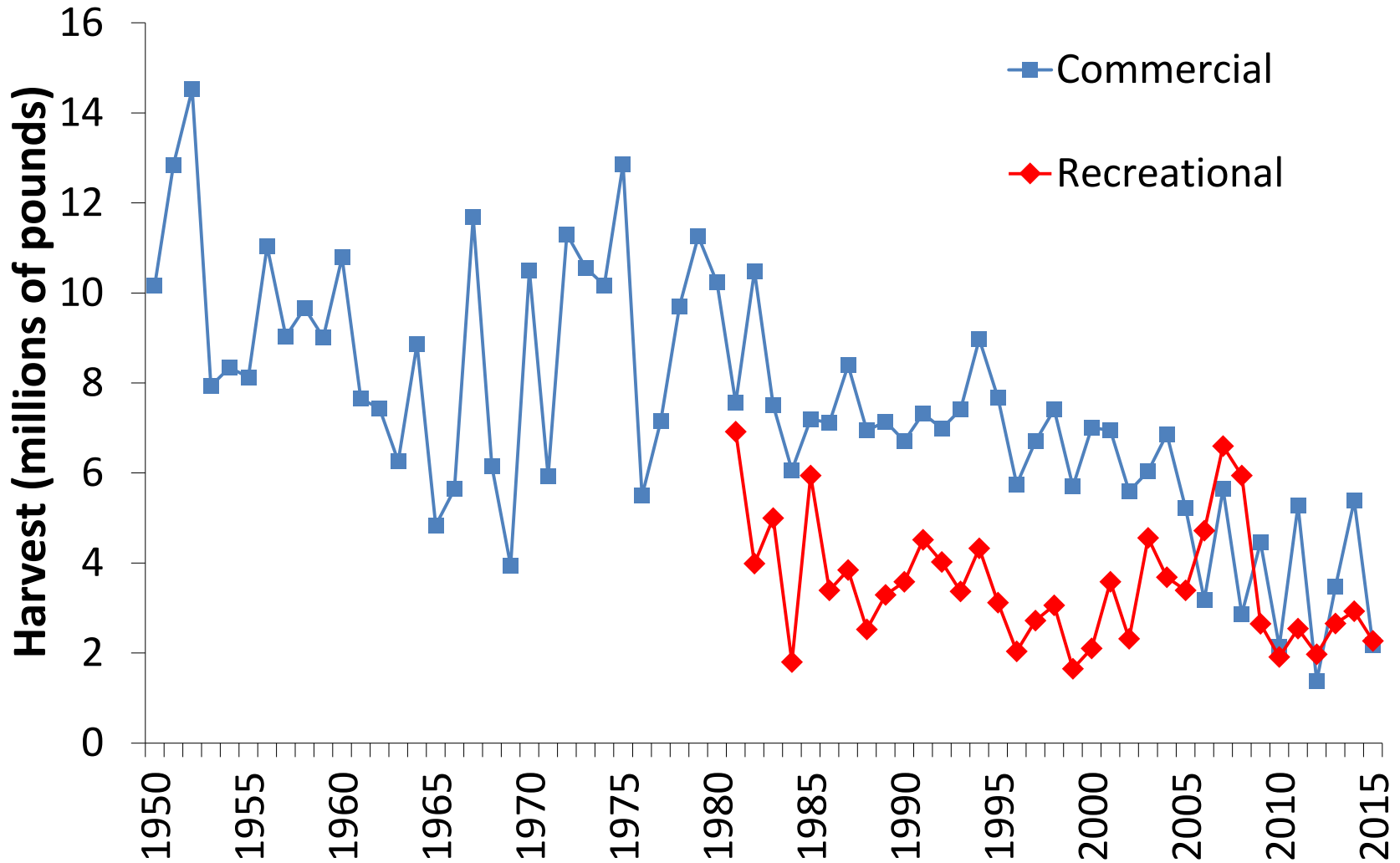
# Spot

## 2016 FMP Review

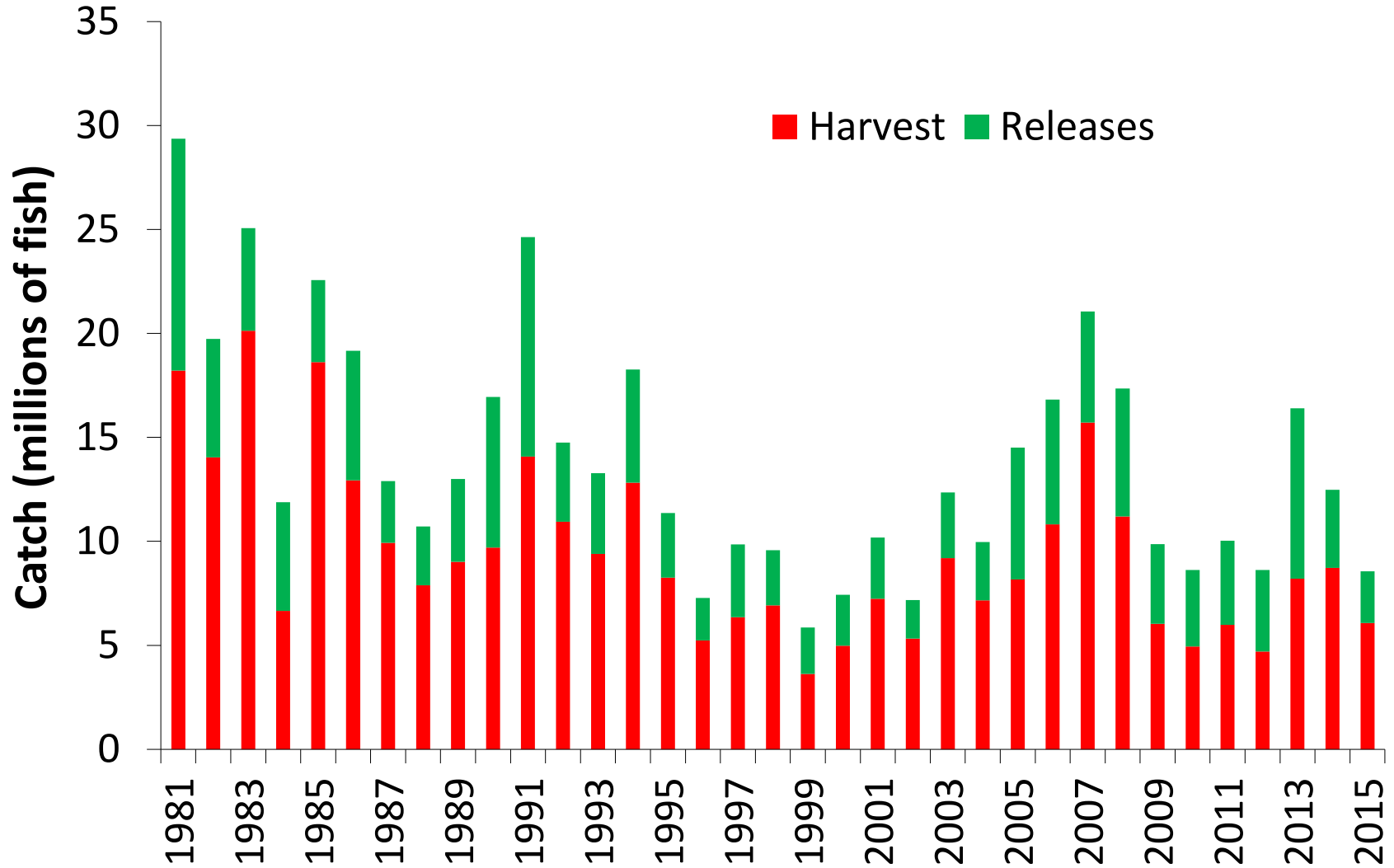


February 2017

# Status of Fishery



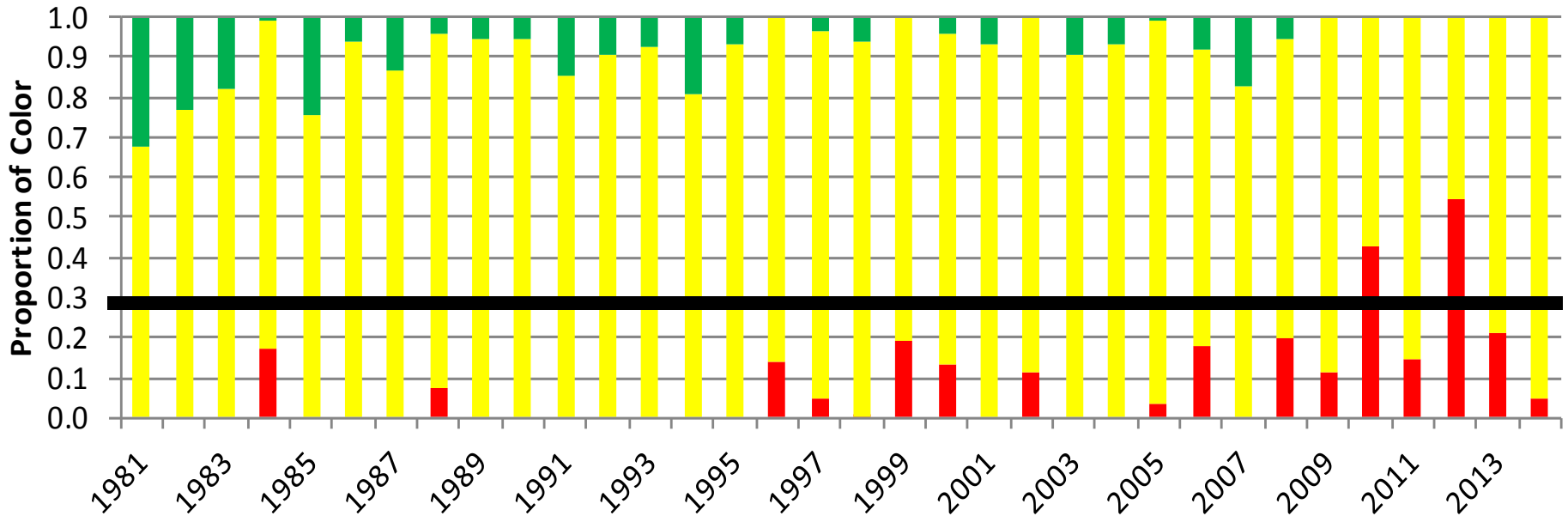
# Status of Fishery



# Status of Stock



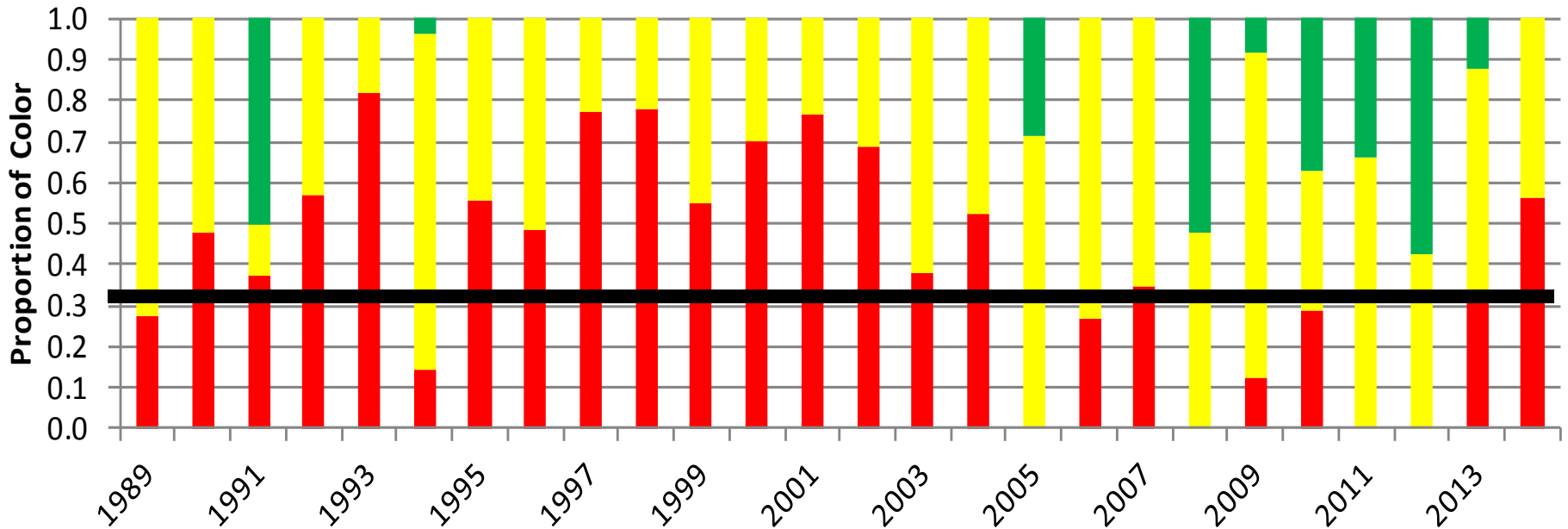
## 2014 Harvest Composite Index



# Status of Stock



## 2014 Abundance Composite Index



# Status of Management



## Management

- Omnibus Amendment (2011)
- Addendum I (2014)
  - Traffic Light Approach
- All states found to be in compliance

## De Minimis

- 3 year avg, com and rec, 1%
- GA requested and qualifies



# Recommendations



The PRT recommends the Board approve the 2016 Spot FMP Review, state compliance reports, and *de minimis* status for GA.