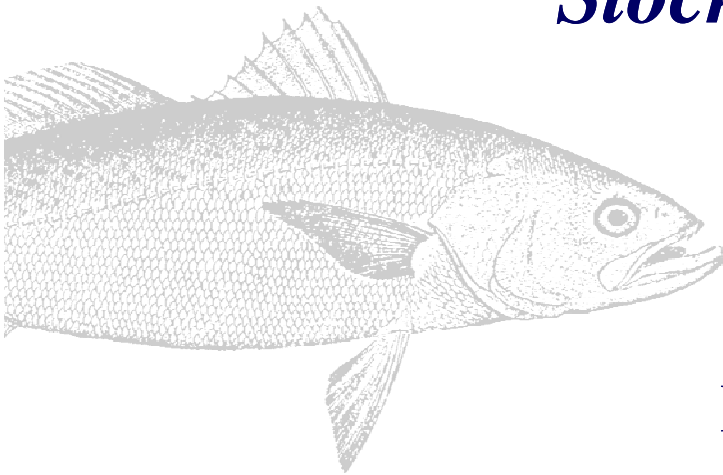




*Working towards healthy, self-sustaining populations
for all Atlantic coast fish species or successful
restoration well in progress by 2015*

***Weakfish Technical Committee Report
Stock Status Indicators
October 2012***



Potential Stock Indicators
Five Year Landings Trends

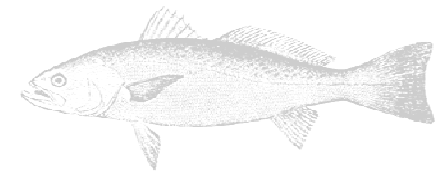


Stock Indicators

- Provide indicators for stock recovery with potential to aid in adjusting harvest limits

Potential Stock Indicators

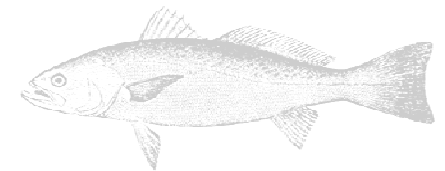
- % of trips that maximize harvest limit
- Relative Biomass Indices
- Proportional Stock Densities
- Relative F
- Juvenile Indices





Stock Indicators

- **Monitoring trips that max out harvest limit**
 - Limited to states with trip ticket data
 - Could be monitored annually or seasonally
 - Need baseline data to evaluate any trends
 - Difficult to distinguish whether changes are due to fishing behavior or stock

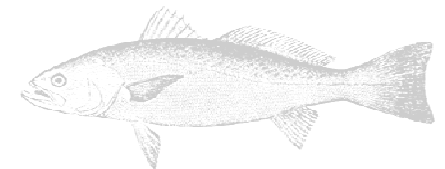




2011 Trip Analysis

State	total trips with weakfish	# trips over trip limit	% overage trips	total lbs weakfish	overage lbs (lbs over trip limit)	% pounds over trip limit
NC	3,986	252	6.3	65,896	6,828	10.4
RI	602			5,766		
NJ	309	30	9.7	13,324	4,941	37.1
DE	195	0	0.0	1,100	0	0.0
MD	108	4	3.7	2,751	744	27.0
PRFC	13	0	0	45	0	0
VA	1,581	8	0.5	26,104	2,631	10.1
FL	105	0	0.0	608	0	0.0

 confidential data



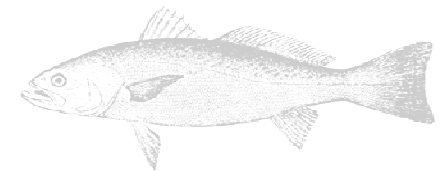


Stock Indicators

➤ Relative Biomass Indices

‘Adult’ indices used in peer reviewed assessment

- Recreational CPUE
- Delaware Trawl Survey CPUE
- NJ Trawl Survey Positive Tows



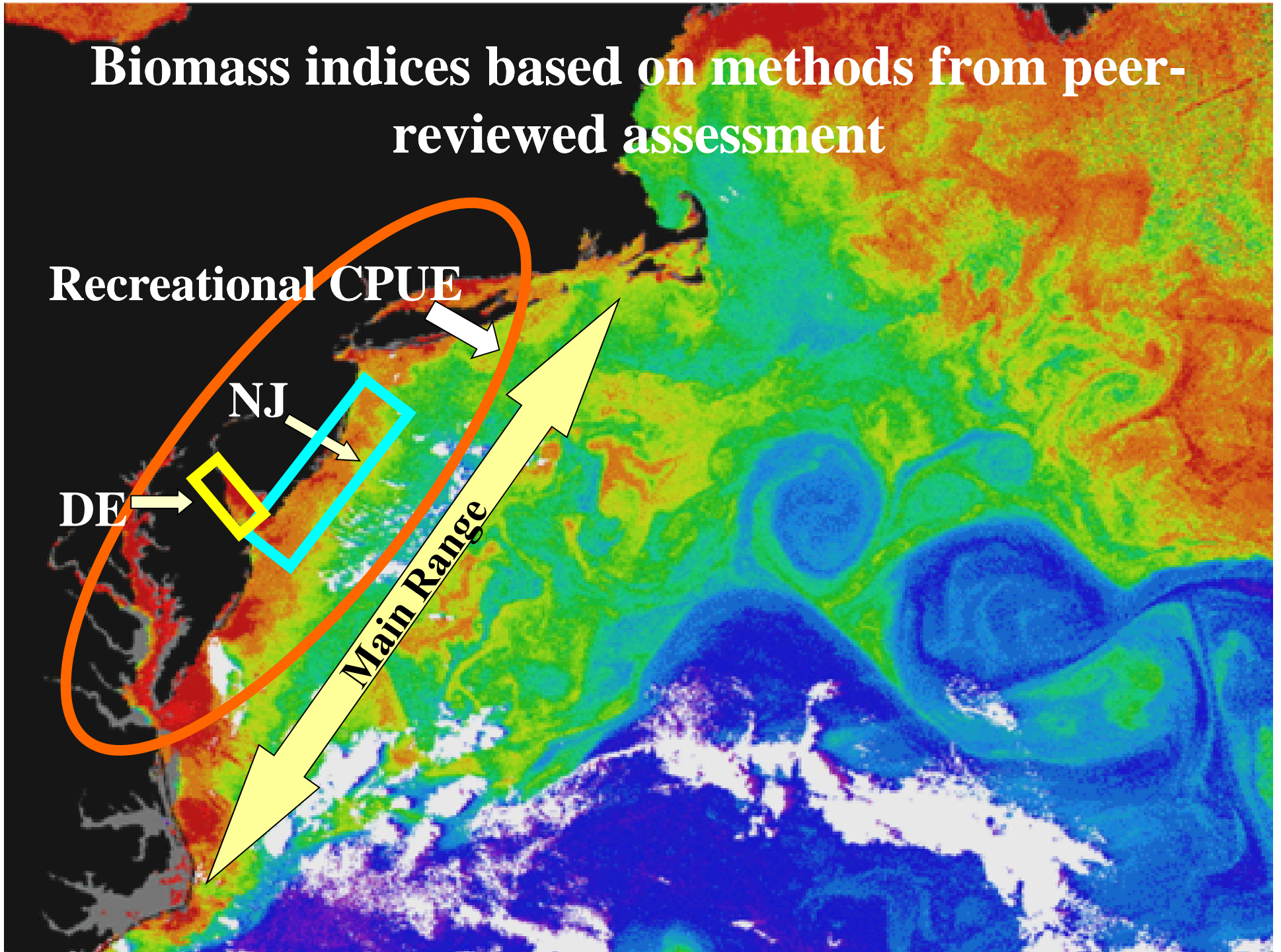
Biomass indices based on methods from peer-reviewed assessment

Recreational CPUE

NJ

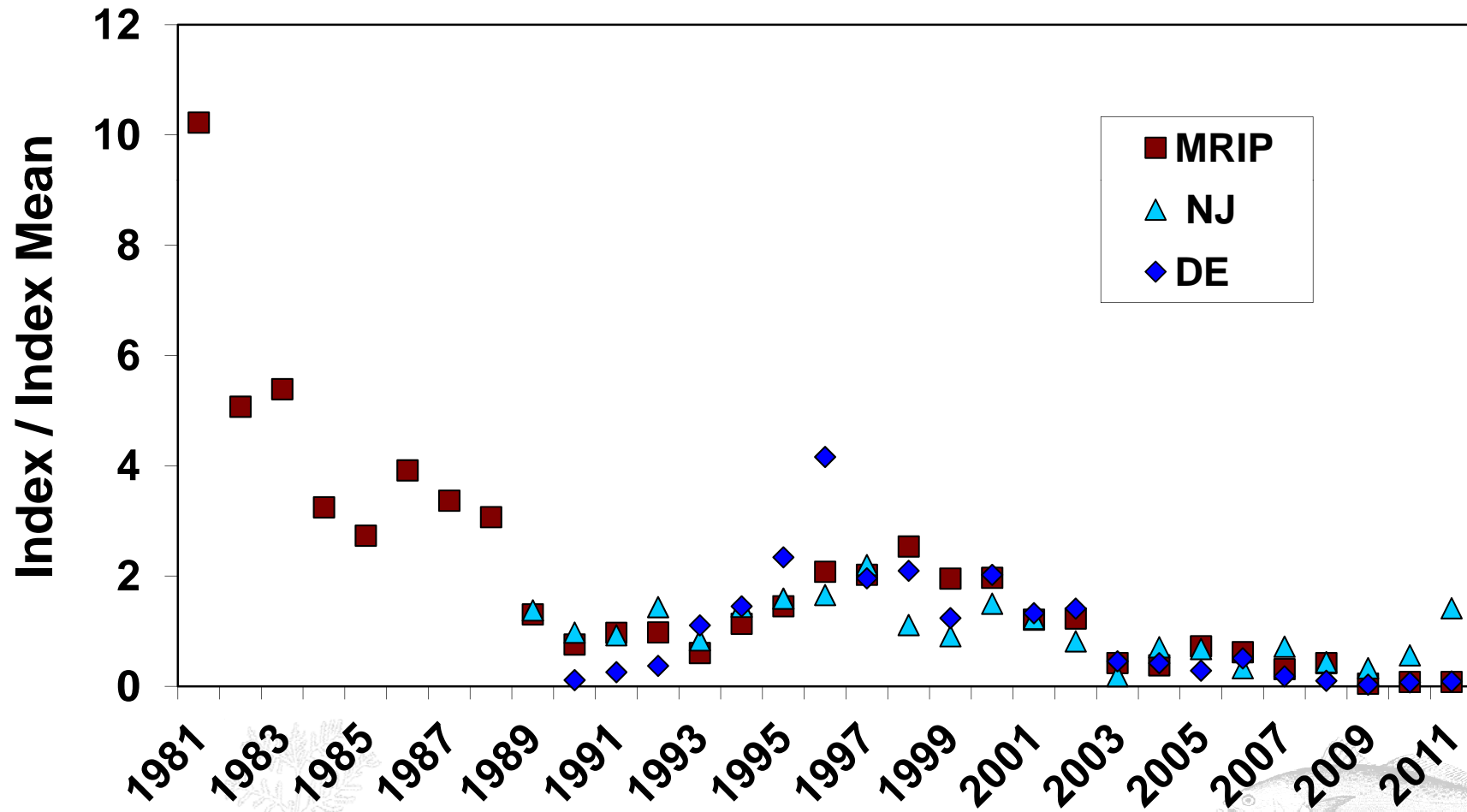
DE

Main Range





Biomass Indices

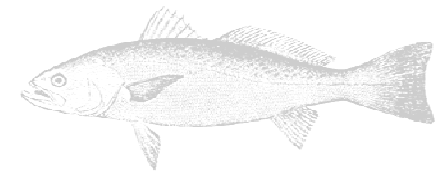




Stock Indicators

➤ Proportional Stock Densities

- Standardized index of size structure – easily calculated
- Calculated using DE or NJ Trawl
- Quantifies length frequency
- Reflection of population dynamics and fishery performance





Proportional Stock Density Example

- Calculated as proportions of numbers of various sized fishes in a sample (length frequency analysis)

Weakfish “Quality + PSD”

- **Stock length = 205 mm (8.1 inch)**
- **Quality length = 340 mm (13.4 inch)**
- **Quality+ PSD =**

Number 340 mm and larger weakfish

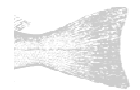
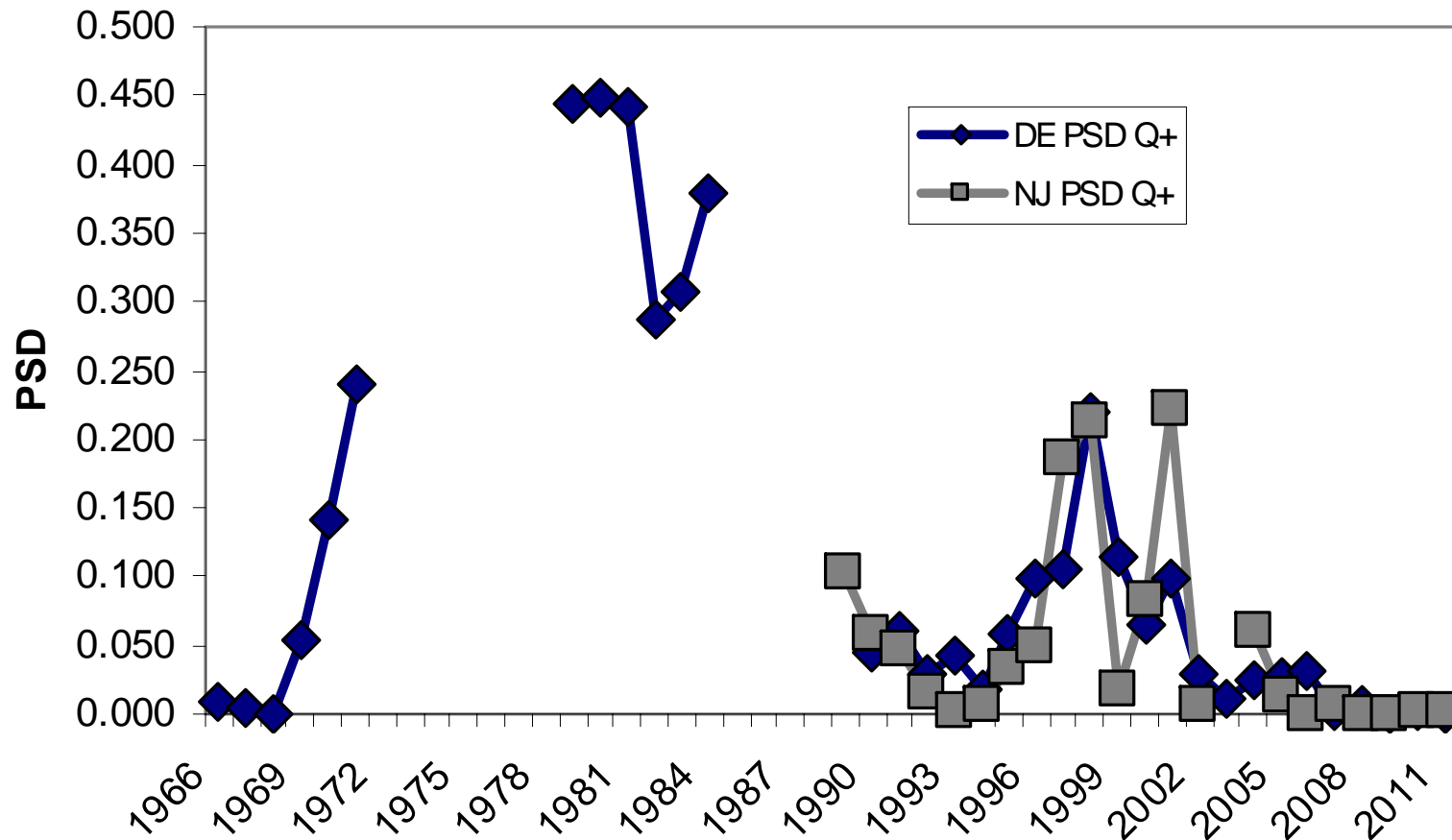
Number 205 mm and larger weakfish





Proportional Stock Density

Figure 1. Quality plus PSD for DE and NJ trawl surveys

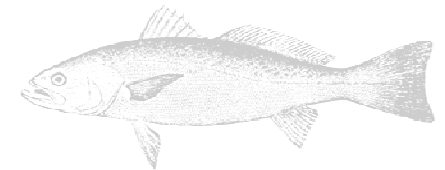




DE PSD tracks fishery performance

It is significantly correlated ($P < 0.05$,) with

1. Commercial landings ($r = 0.94$).
2. Recreational harvest ($r = 0.87$).
3. Proportion of recreational harvest inshore or offshore ($r = -0.84$ & 0.87 , respectively).
4. DE, MD, VA trophy citations (+), not NC ($r = 0.86, 0.79, 0.76$ & 0.29 , respectively).

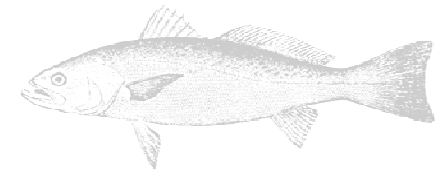




Stock Indicators

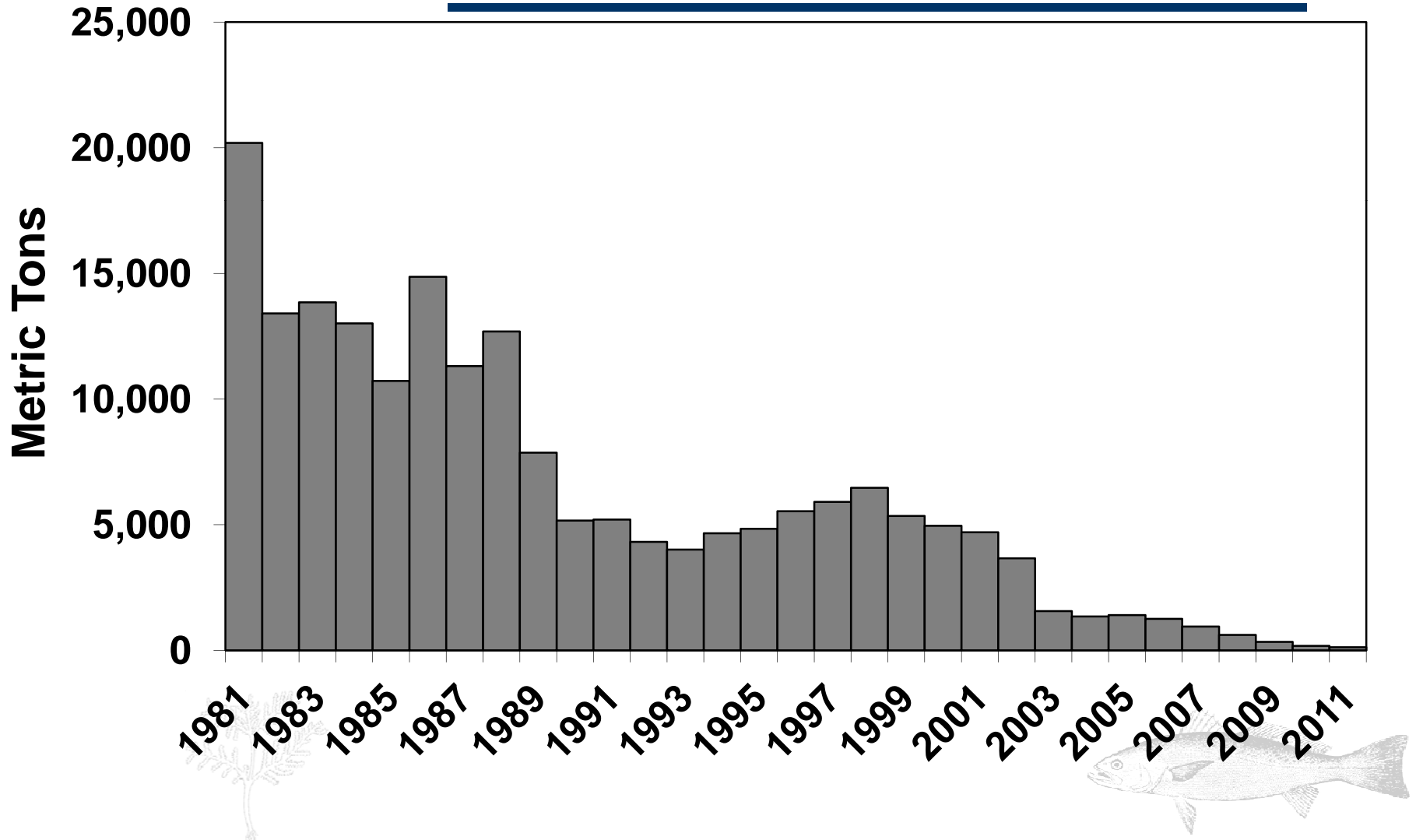
Relative F

- Easily calculated – based on index of abundance (MRFSS) and total annual removals
- Primary determinant for stock status in peer reviewed stock assessment



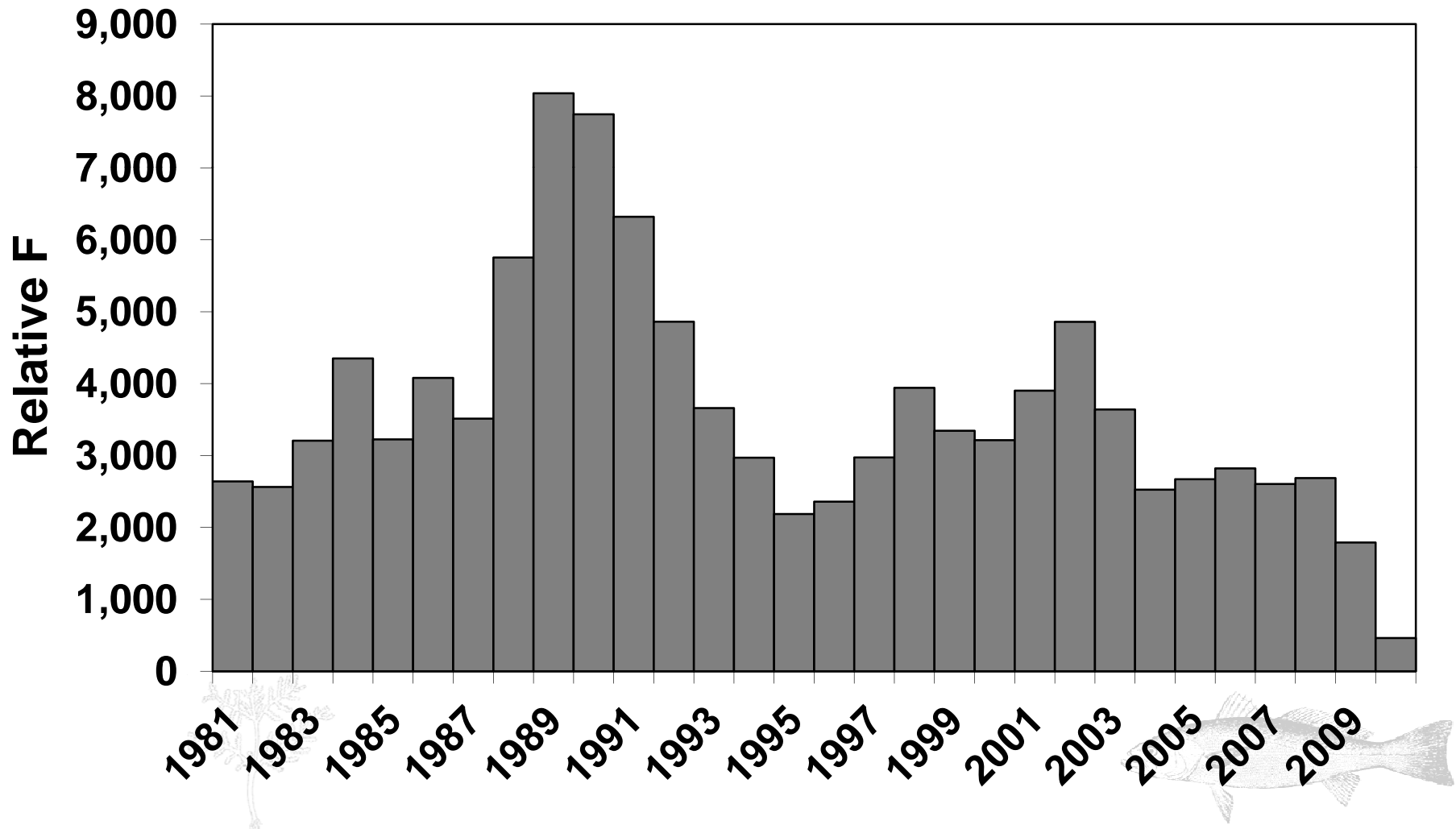


Total fishing losses (harvest and discards).



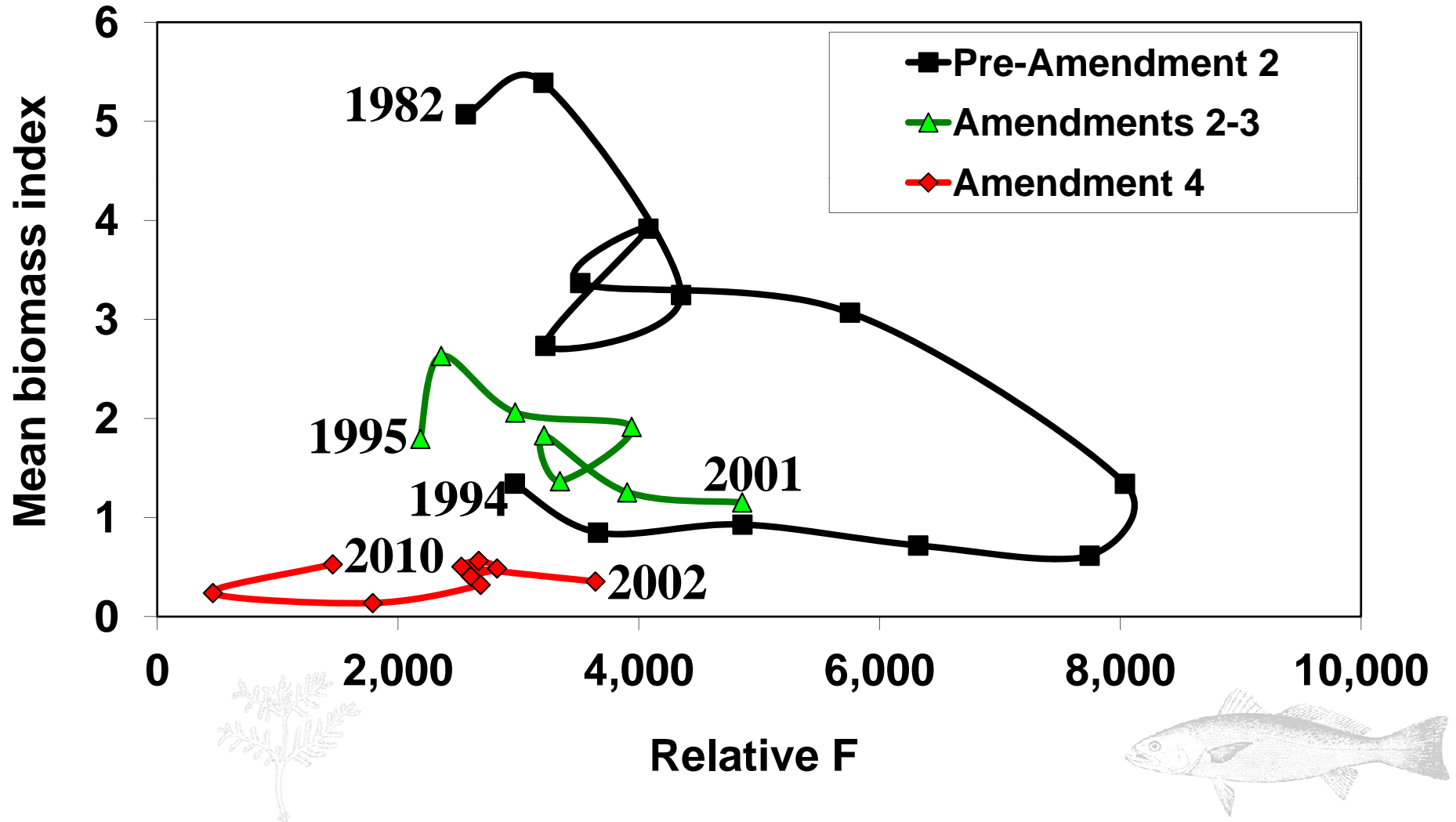


Relative F (fishing losses / 2 yr mean of indices).



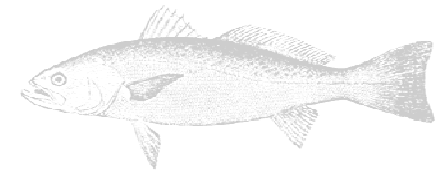
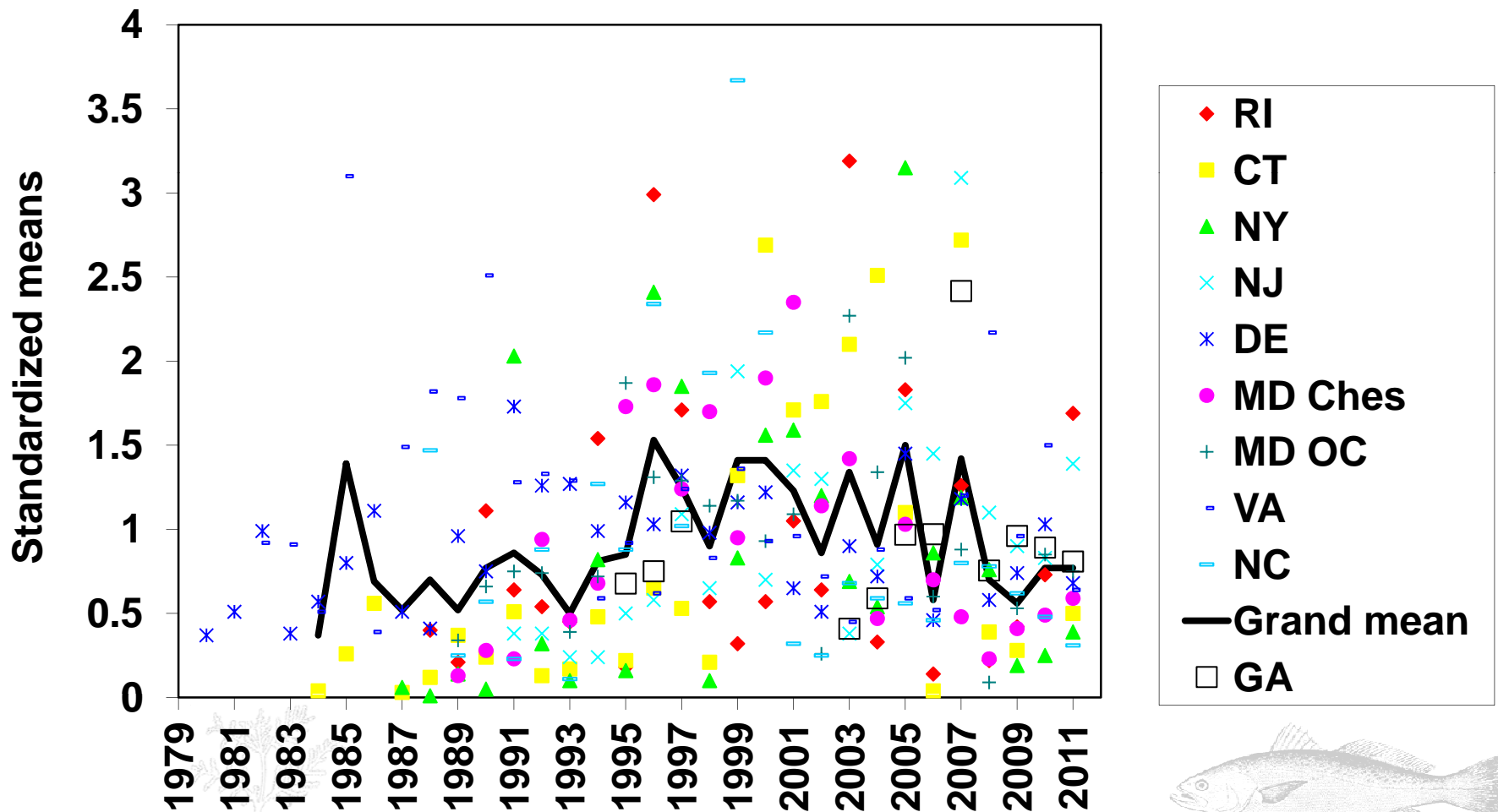


Mean Biomass Index vs. Relative F





Juvenile Indices

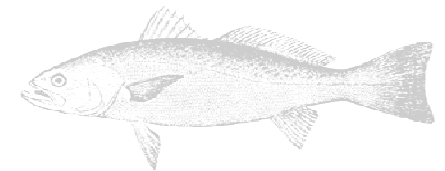




Stock Indicators

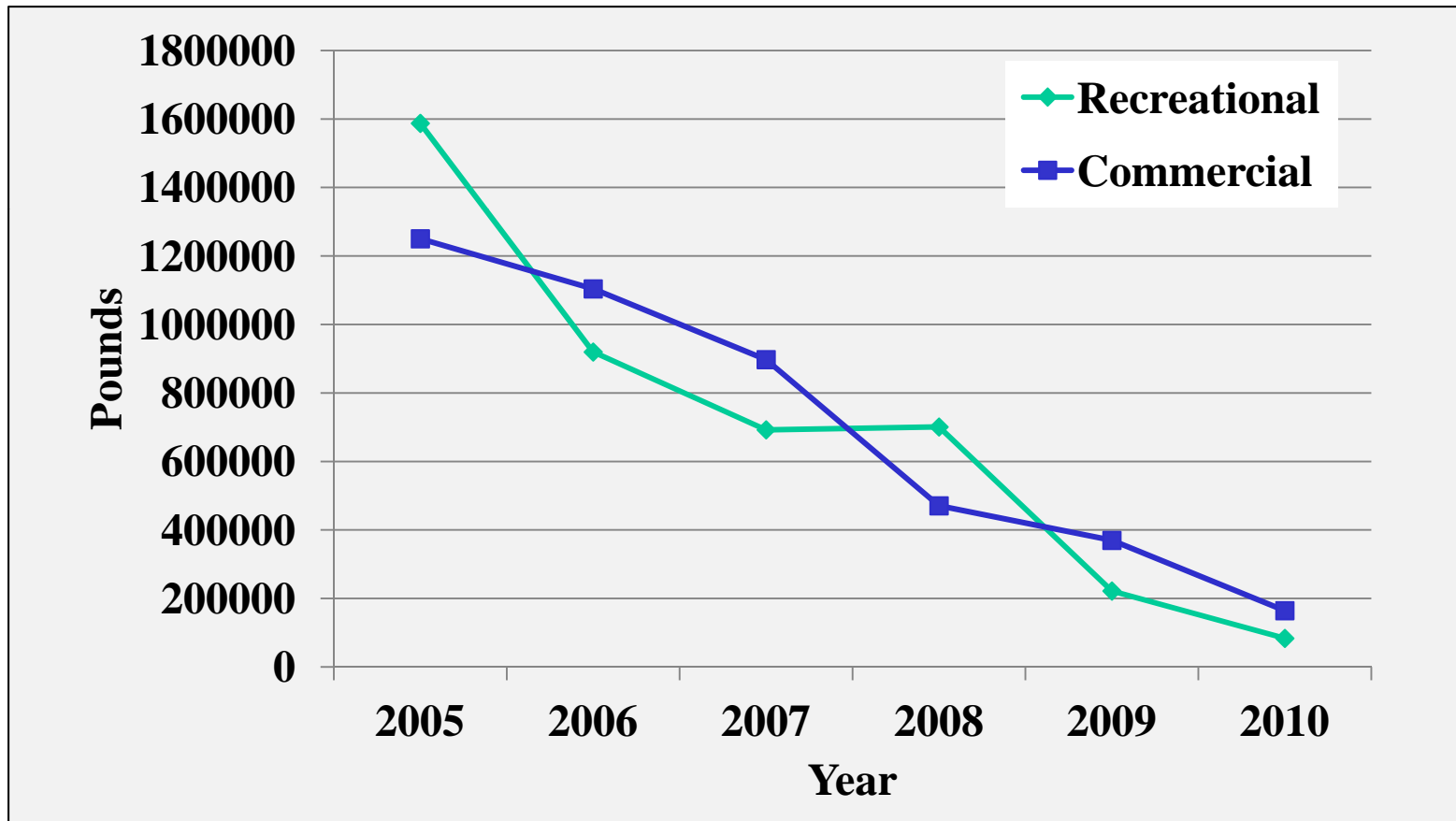
Summary

- Stock indicators are easily calculated and updated
- All indicators continue to show a decline in abundance and quality (i.e. size of weakfish)
- Targets for indicators – attain levels experienced in mid-1990's

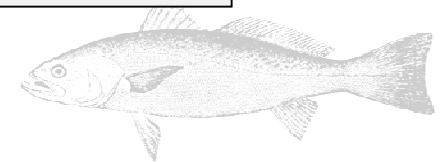




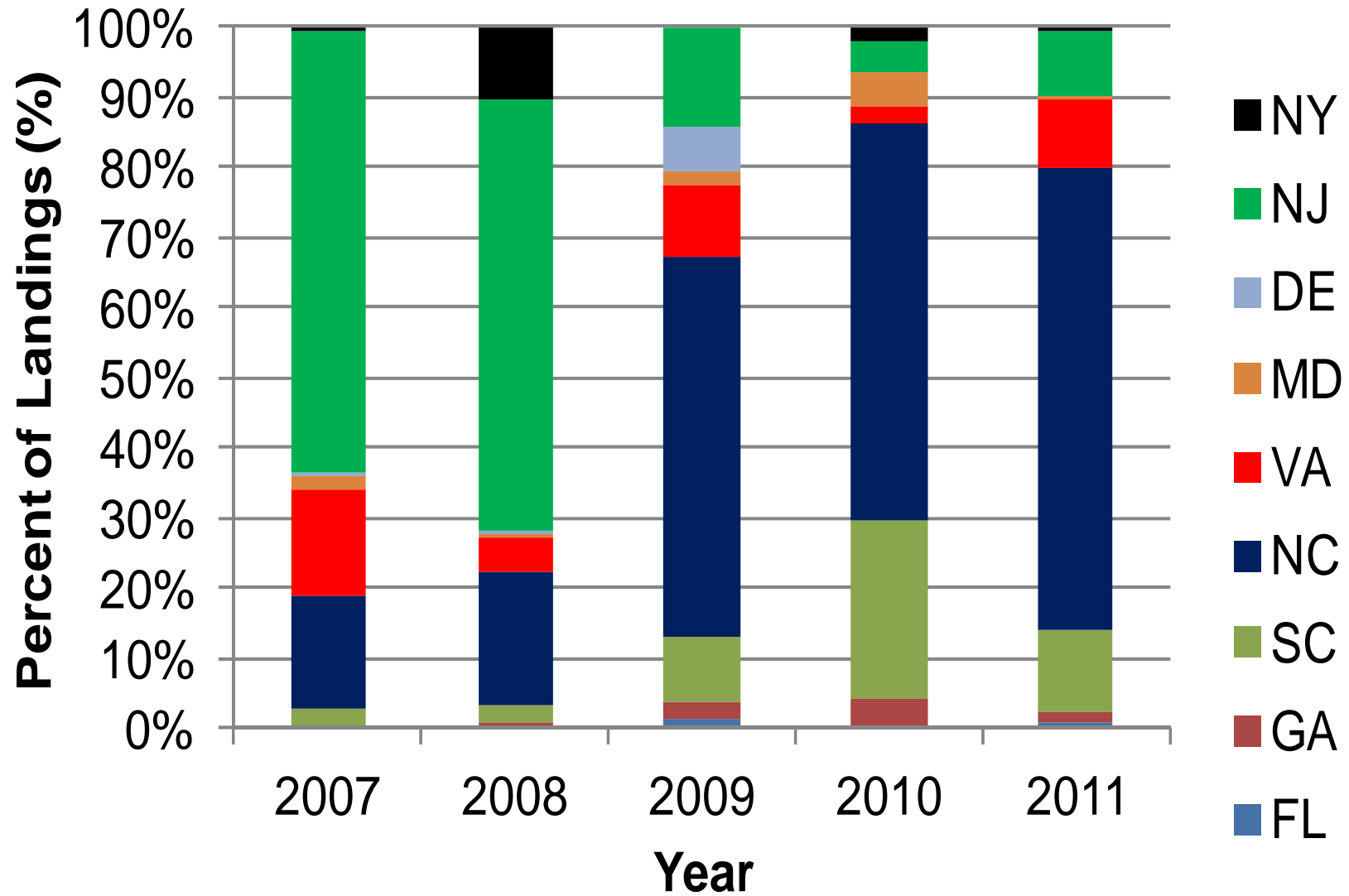
Landings Trends



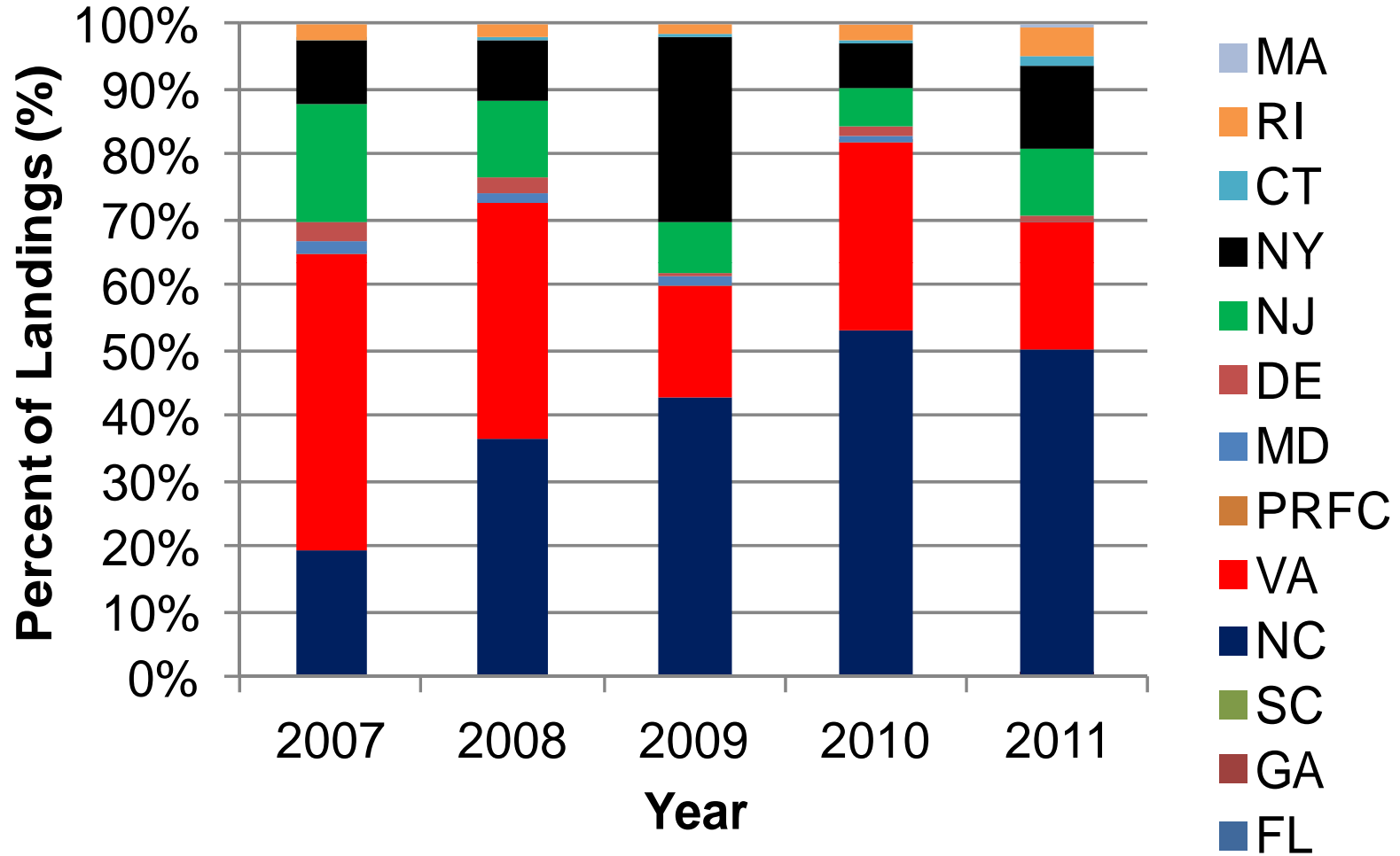
* 2010 commercial preliminary



Shifts in Recreational Harvest by State

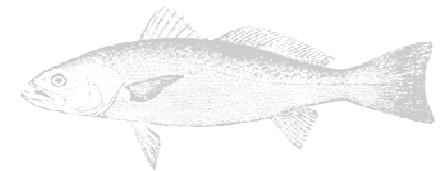


Shift in Commercial Harvest by State





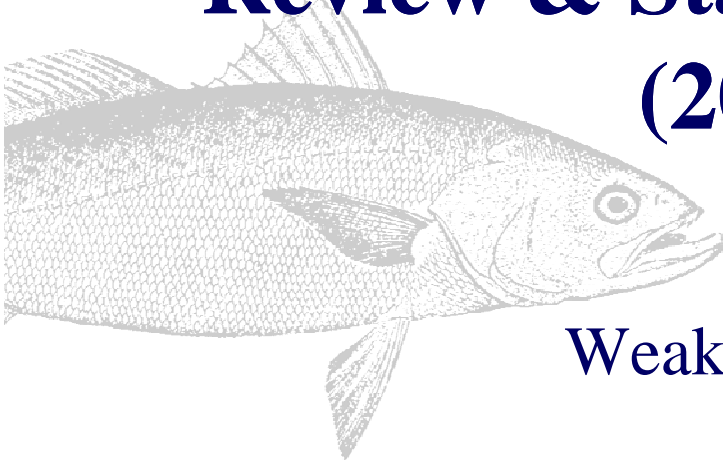
Questions





*Working towards healthy, self-sustaining populations
for all Atlantic coast fish species or successful
restoration well in progress by 2015*

Weakfish Fishery Management Plan Review & State Compliance Report (2011 Fishery)



**Weakfish Management Board
October 23, 2012**



Status of the FMP

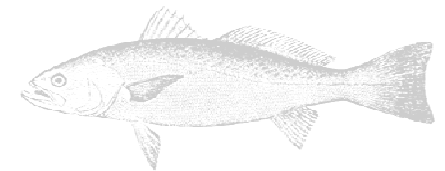
- Amendment 4 (2002)
 - ❖ Addendum I (2005) – revise biological monitoring program
 - ❖ Addendum II (2007) – reduce creel and bycatch limit, implement triggers
 - ❖ Addendum III (2007) – BRD certification language
 - ❖ Addendum IV (2009) – revise BRPs, reduce creel, implement trip limit, reduce bycatch limit and finfish trawl undersized fish allowance





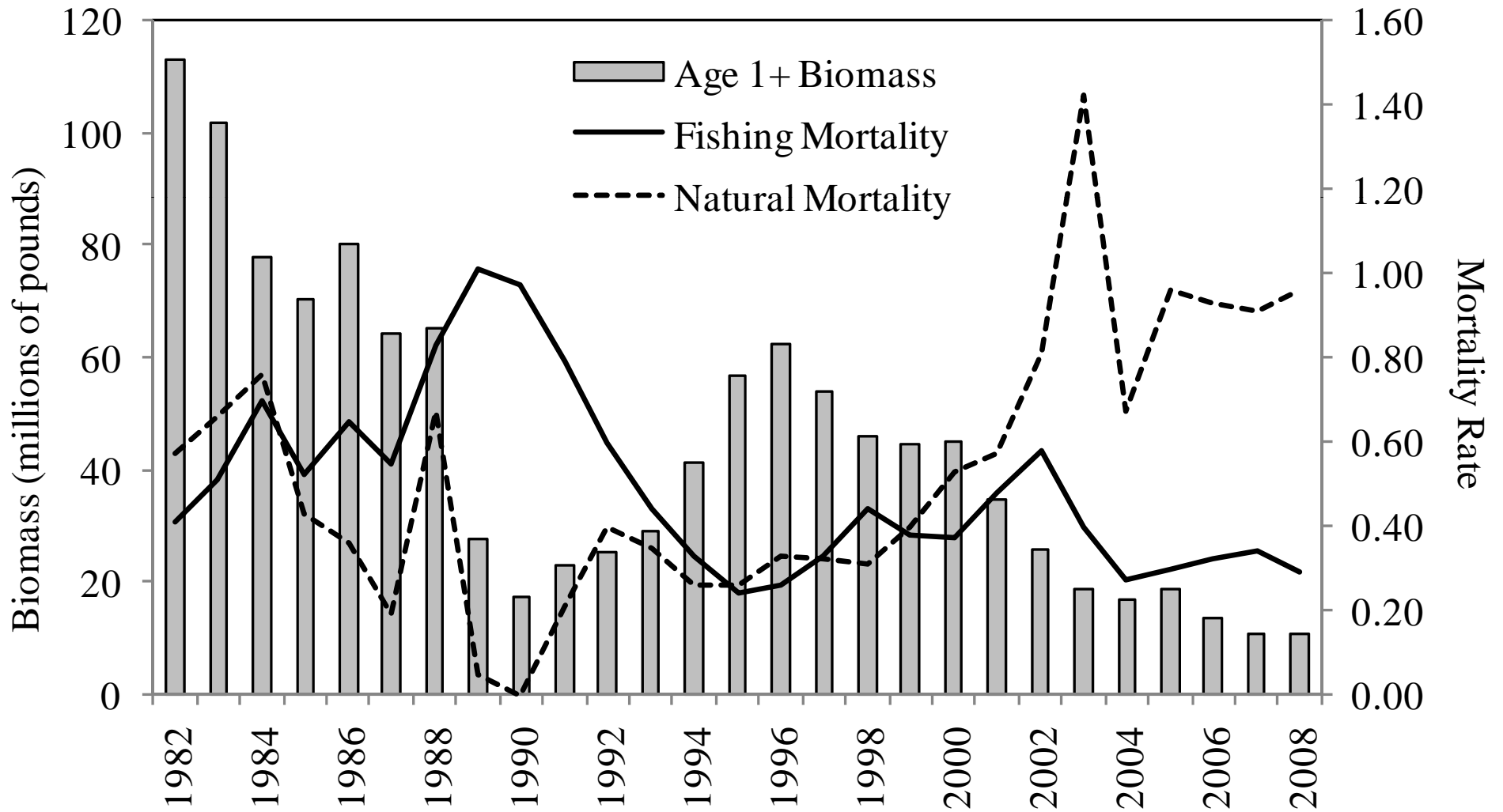
Status of Assessment & Advice

- Depleted, overfishing not occurring
- Biomass at all time low
- F modest and stable but M recently increased and driving stock dynamics
- SAW/SARC process in 2009
 - ❖ Interim model
 - ❖ Current level of fishery removals exacerbate stock decline



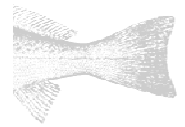
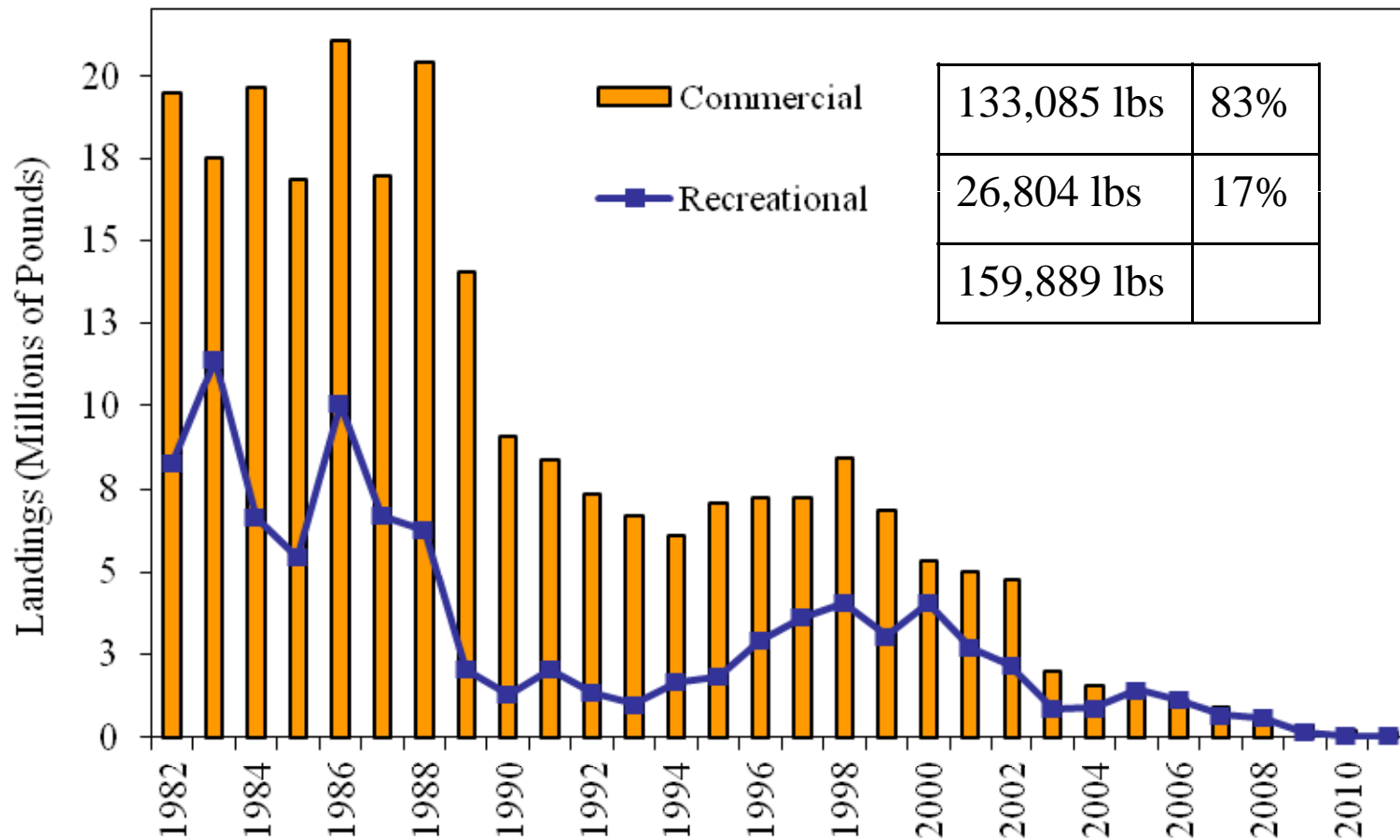


Stock Status



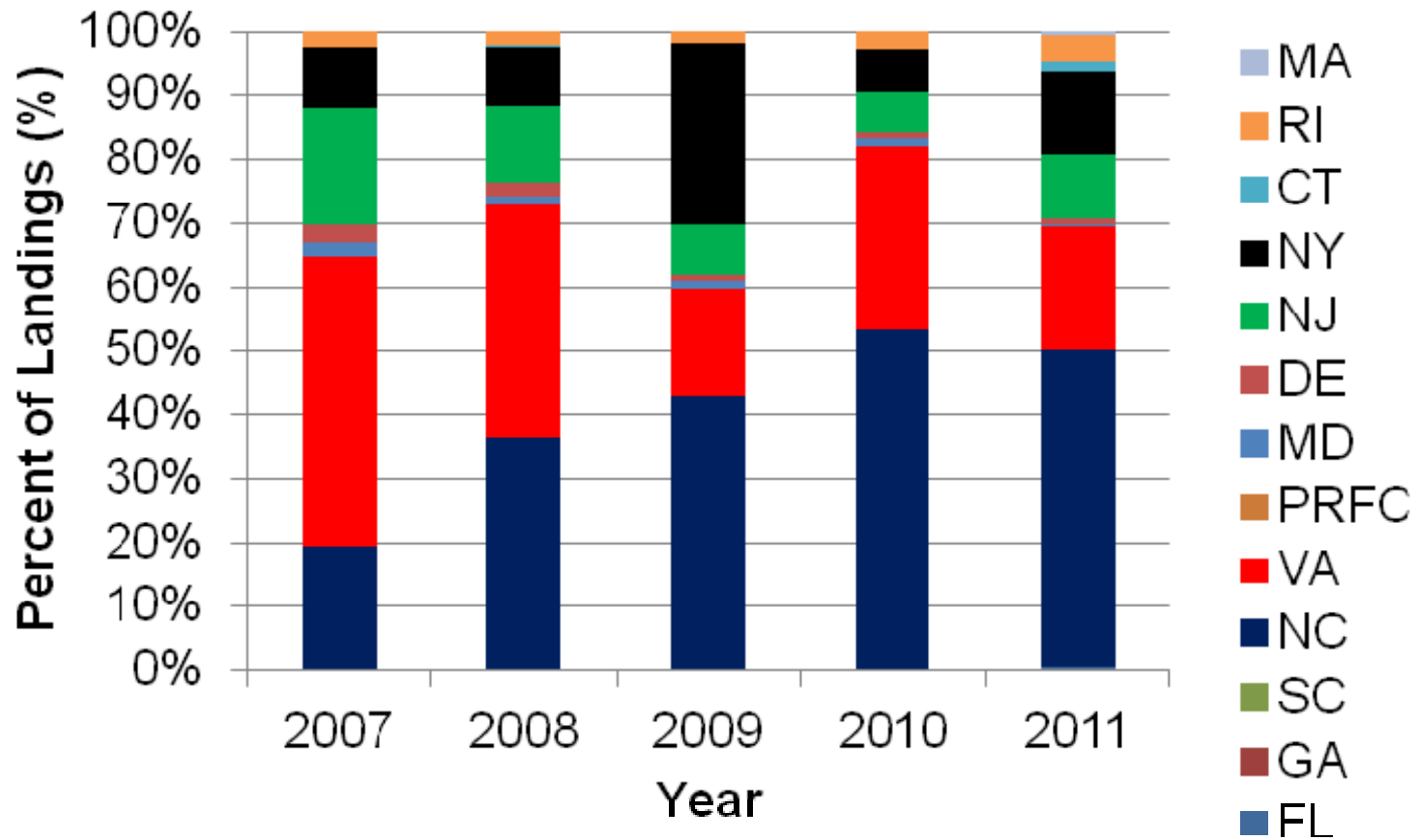


Status of the Fisheries





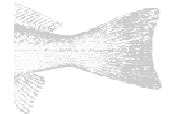
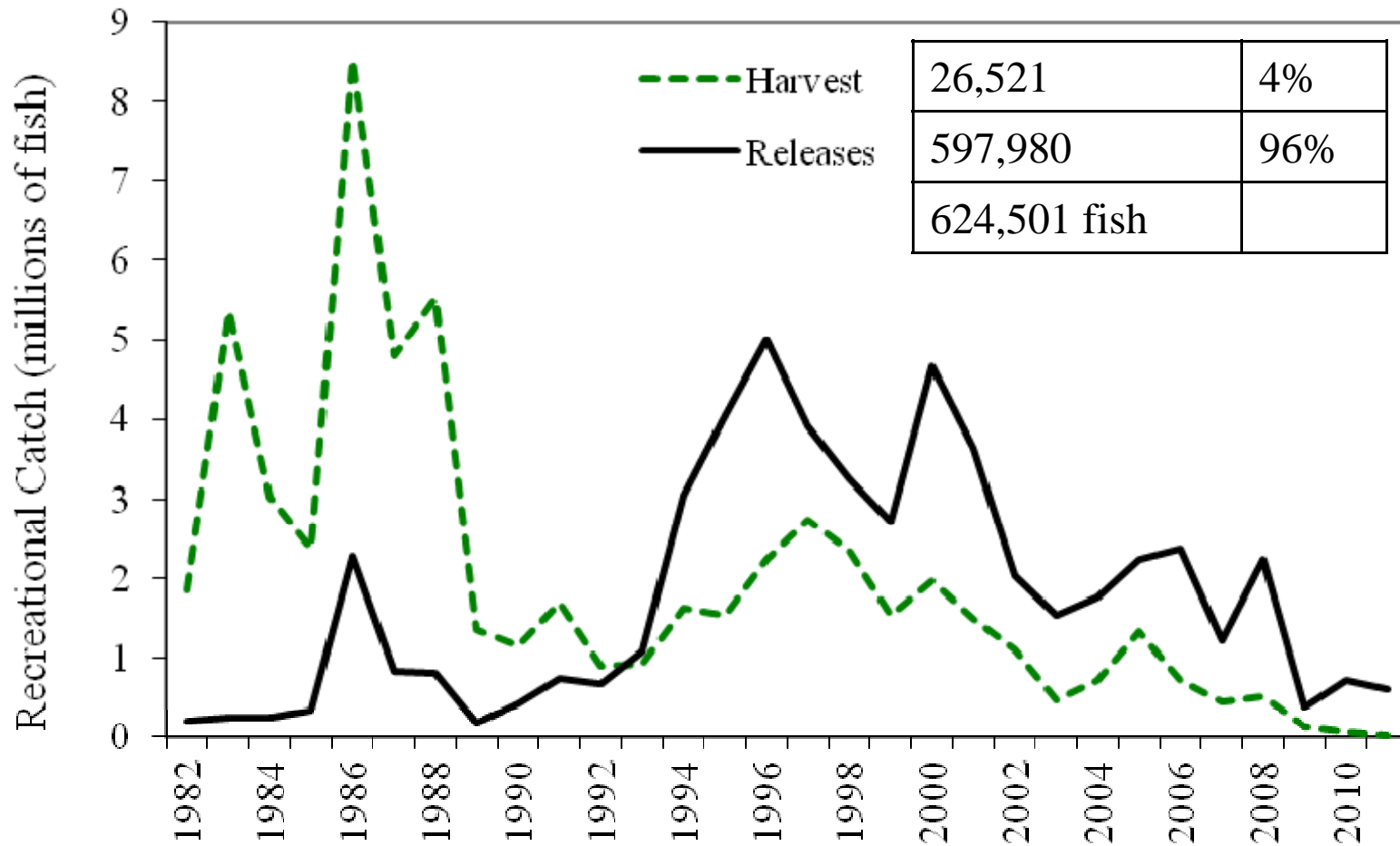
Commercial Fishery



52% gill net, 14% haul seine, 9% trawl net

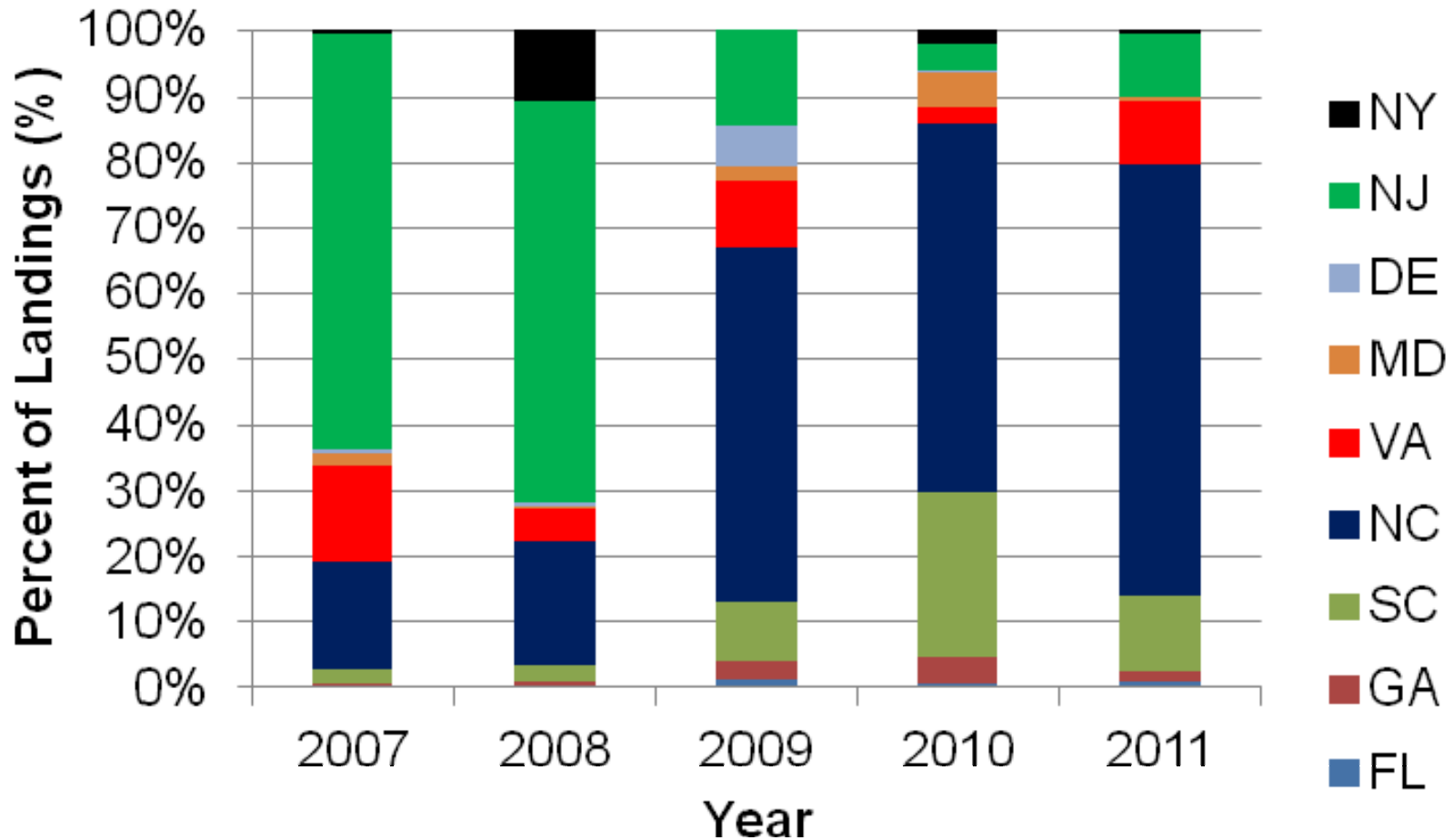


Recreational Fishery





Recreational Fishery



50% from private/rental boat, 41% in wave 2.

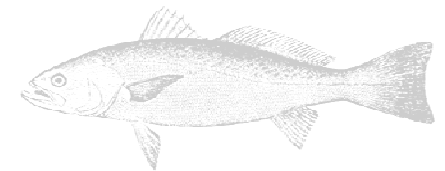


Management Issues

De Minimis

- Two-year landings average < 1% coastwide
 - ❖ 2,140 pounds (2010-2011 landings)

- Requests from MA, CT, GA, FL; all qualify
 - ❖ MA (0.16%), CT (0.70%), GA (0.73%), FL (0.31%)

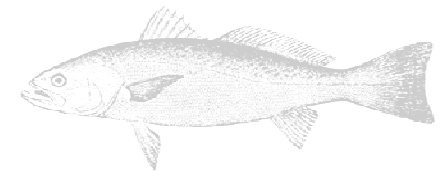




Management Issues

Addendum II Triggers

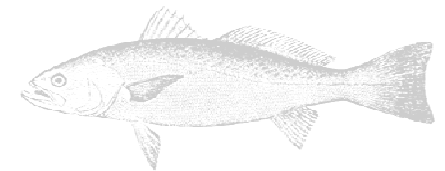
- Trigger 1: coastal commercial landings
 - ❖ If $> 80\%$ 2000-2004 average (2.99 million lbs)
 - ❖ 2011 landings = 159,889 lbs
- Trigger 2: state-specific total landings
 - ❖ If $> 25\%$ above five-year mean
 - ❖ All states landings (except MA) decreased from five-year mean
- Addendum IV replaces Addendum II, but PRT will continue to report on triggers.





Compliance with Regulatory Requirements

- Compliance with Amend. 4, Add. I-IV
 - ❖ All states in compliance
 - ❖ NC has approved conservation equivalency measures in lieu of Addendum IV





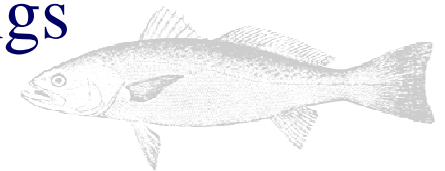
Compliance with Monitoring Requirements

➤ Addendum I Requirements

- ❖ 6 lengths/MT commercial landings
- ❖ 3 otoliths/MT total landings, 1000 maximum

	Samples Required		Samples Collected	
	Otoliths	Length	Otoliths	Lengths
RI	8	16	10	10
NY	24	47	6	63

- ❖ Causes: funding/personnel/limited landings





PRT Recommendations

- Consider *de minimis* requests:
 - ❖ MA, CT, GA, FL all qualify
- Consider compliance with monitoring requirements:
 - ❖ RI, NY, below requirements; funding/staff/limited landings as causes
- TC and SAS to explore alternative assessment techniques for next benchmark and continue to compile input data for interim model should an update be requested.

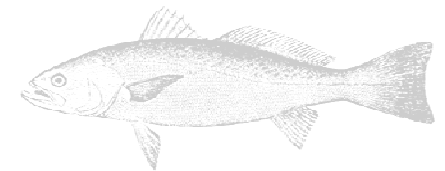




Management Issues

FL Management Area & Landings

- 11/09 Board approved FL proposal
 - ① Restricted weakfish management area to St. Mary's River only in state with pure weakfish
 - ① Address seatrout-weakfish hybridization, misidentification, and enforcement
 - ① Commercial and recreational landings adjusted accordingly (by area, and % pure weakfish)





Lengths

Year	Samples	SC	NC	VA	PR	MD	DE	NJ	NY	RI	Total
2006	Required	na	988	712	0	88	94	562	416	123	2,983
	Collected	na	8,712	6,762	0	496	4,296	2,025	182	43	22,516
2007	Required	na	478	1106	0	49	67	443	236	57	2,435
	Collected	na	6,343	2,827	0	242	409	1046	213	14	11,094
2008	Required	na	464	466	0	16	30	152	120	13	1,262
	Collected	na	3,275	1,944	0	135	409	938	486	0	7,187
2009	Required*	na	444	166	0	13	8	79	276	17	1003
	Collected	na	2501	1359	0	64	0	130	155	0	4209

* projected sampling requirements based on previous year's preliminary landings; actual requirements will be based on current year landings





Otoliths

Year	Samples	SC	NC	VA	PR	MD	DE	NJ	NY	RI	Total
2006	Required	na	684	426	0	45	73	1000	227	114	2,569
	Collected	na	756	614	0	181	833	774	182	43	3,383
2007	Required	na	410	629	0	51	39	626	129	28	1,911
	Collected	na	560	847	0	181	159	543	49	14	2,353
2008	Required	na	422	286	0	11	21	537	215	13	1,506
	Collected	na	483	366	0	94	159	430	119	0	1,651
2009	Required*	na	362	112	0	9	17	64	138	9	712
	Collected	na	270	412	0	41	0	159	66	0	948

* projected sampling requirements based on previous year's preliminary landings; actual requirements will be based on current year landings

