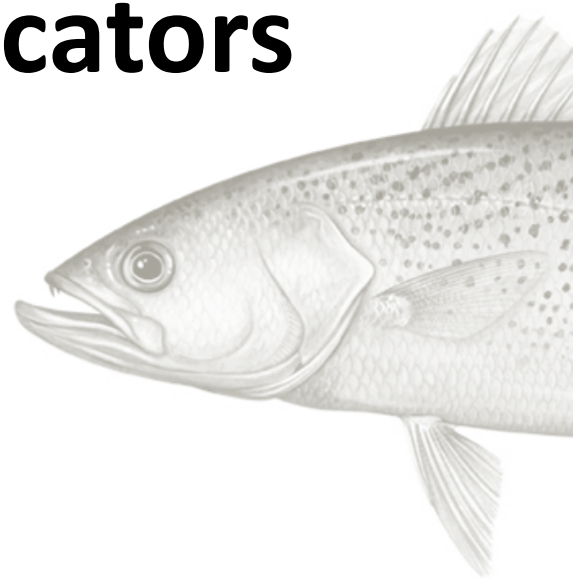
2013 Stock Status Indicators

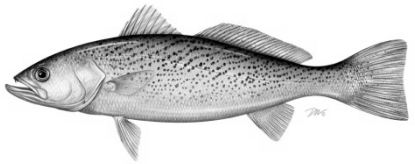


Presented to Weakfish Management Board

February 6, 2014

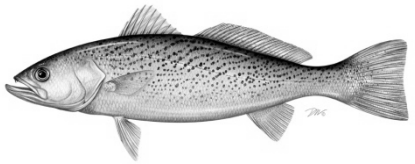
Stock Indicators

- Provide indicators for stock recovery with potential to aid in adjusting harvest limits
- Potential stock indicators
  - Relative biomass indices
  - Proportional stock densities
  - Relative F
  - Juvenile indices

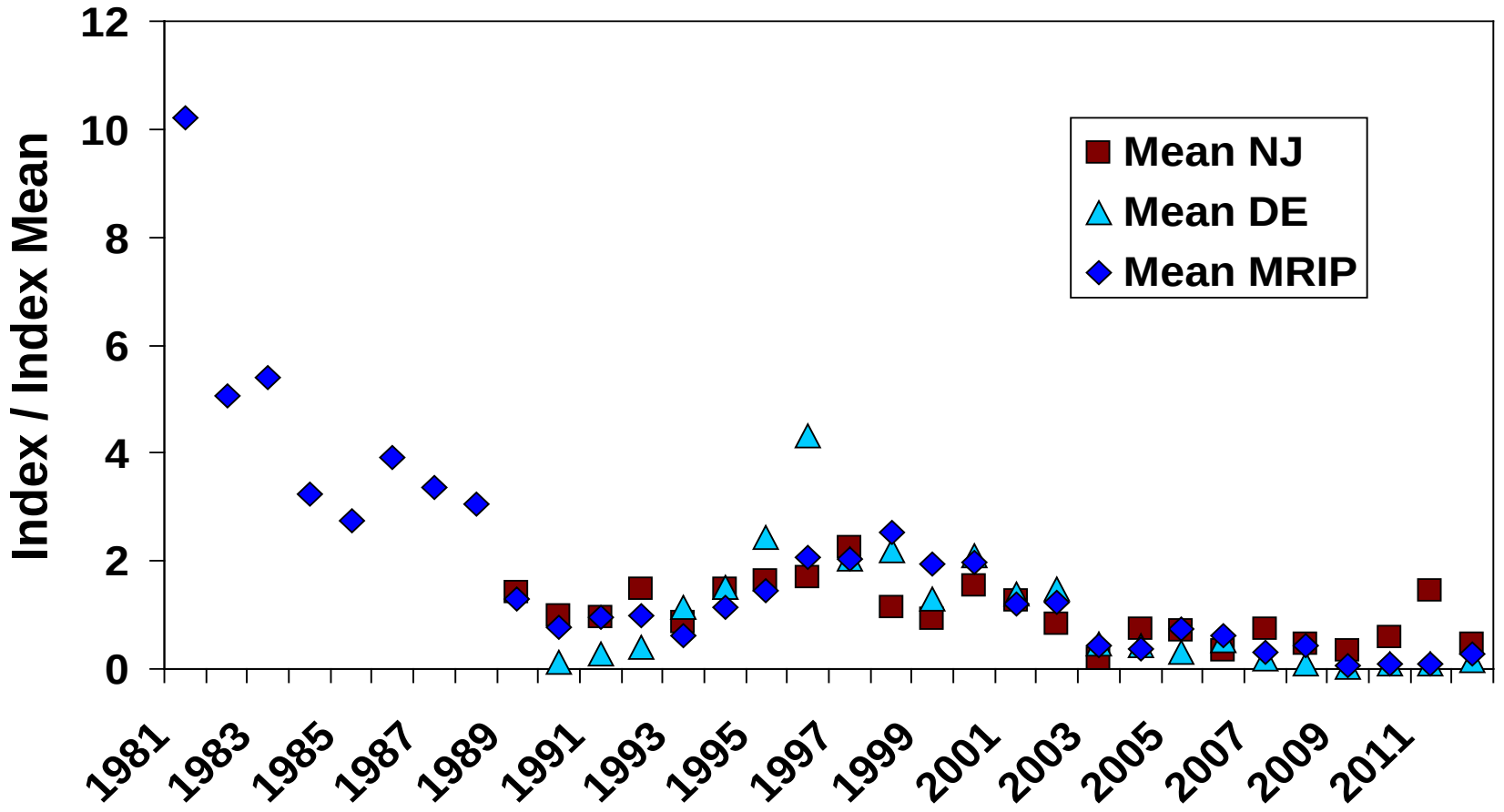


Stock Indicators

- **Relative biomass indices**
  - **'Adult' indices used in peer reviewed assessment**
    - **Recreational CPUE**
    - **Delaware trawl survey CPUE**
    - **NJ trawl survey positive tows**

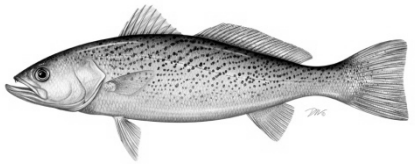


Biomass Indices



Stock Indicators

- **Proportional stock densities**
  - **Standardize index of size structure – easily calculated**
  - **Calculated using DE or NJ trawl**
  - **Quantifies length frequency**
  - **Reflection of population dynamics and fishery performance**

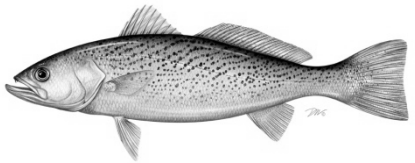


Proportional Stock Density Example

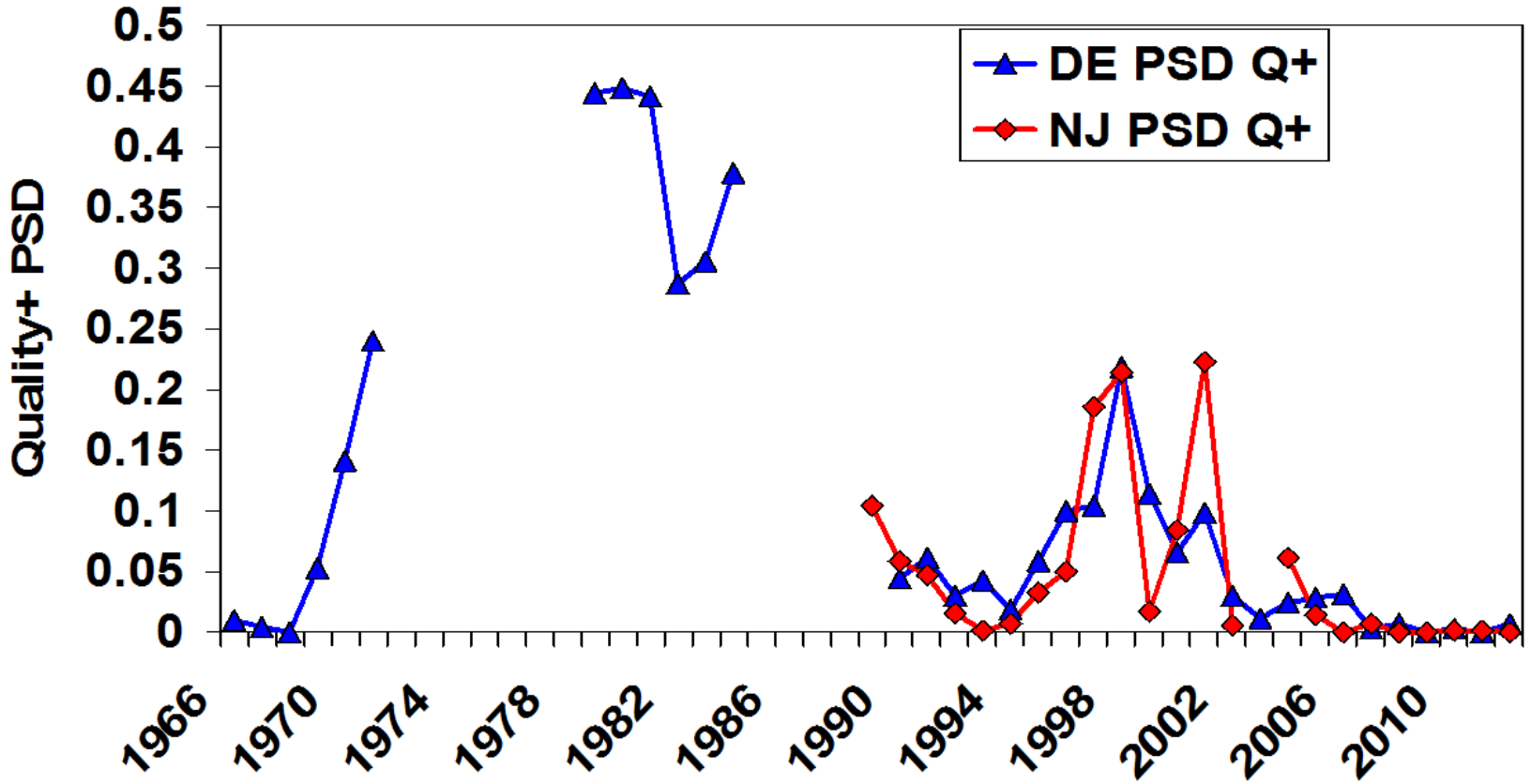
- **Calculated as proportions of numbers of various sized fishes in a sample (length frequency analysis)**

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 and larger weakfish**



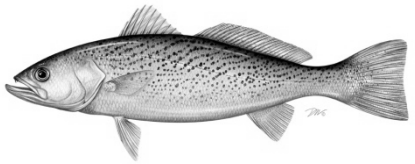
Proportional Stock Density



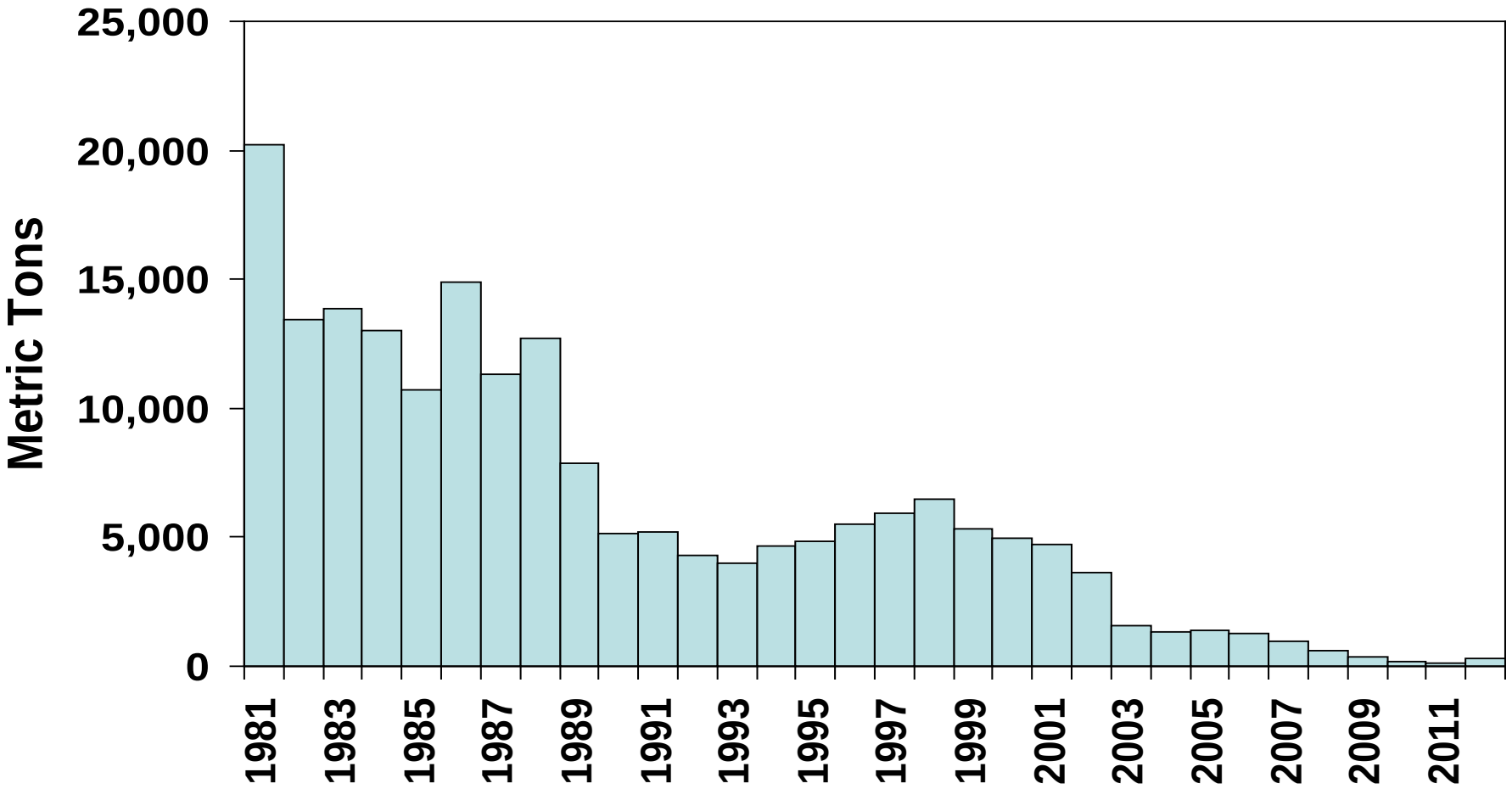
Stock Indicators

Relative F

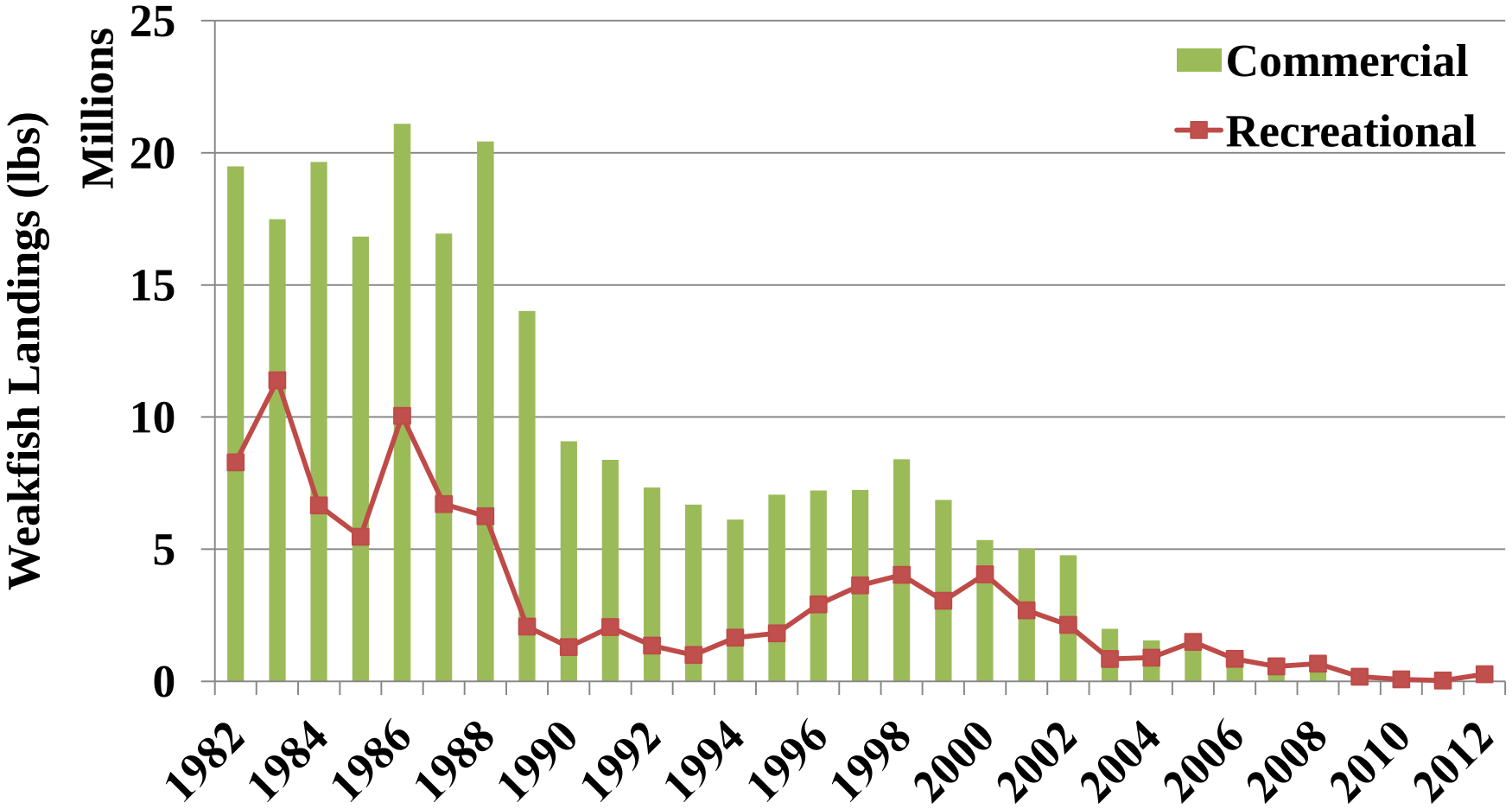
- **Easily calculated – based on index of abundance (MRFSS) and total annual removals**
- **Primary determinant for stock status in peer reviewed document**

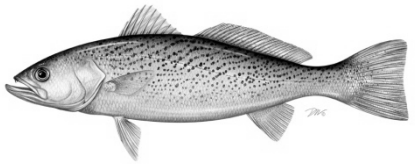


Total Fishing Losses (landings and discards)

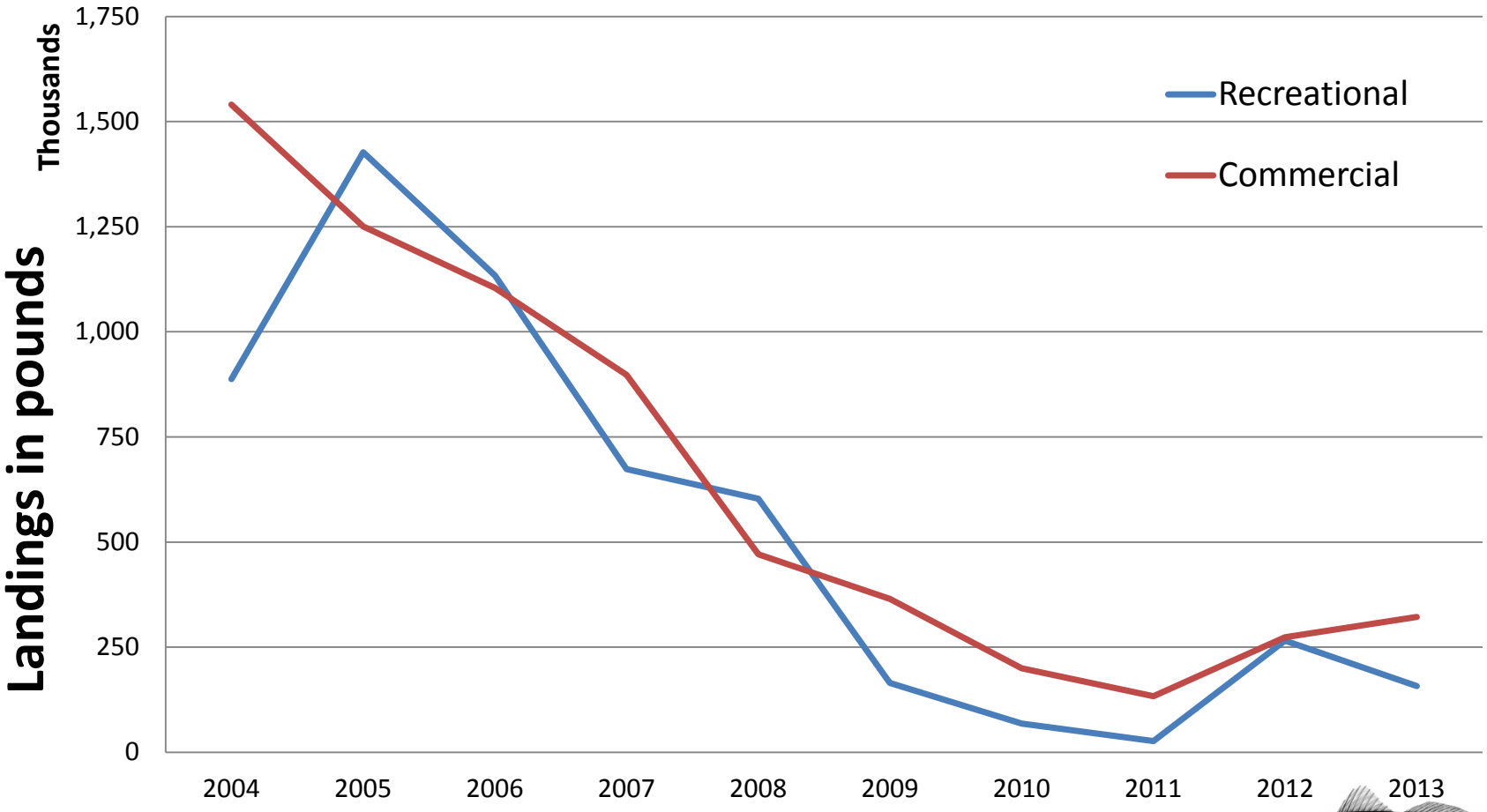


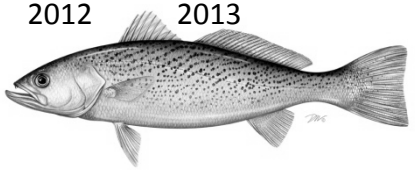
Weakfish Total Landings



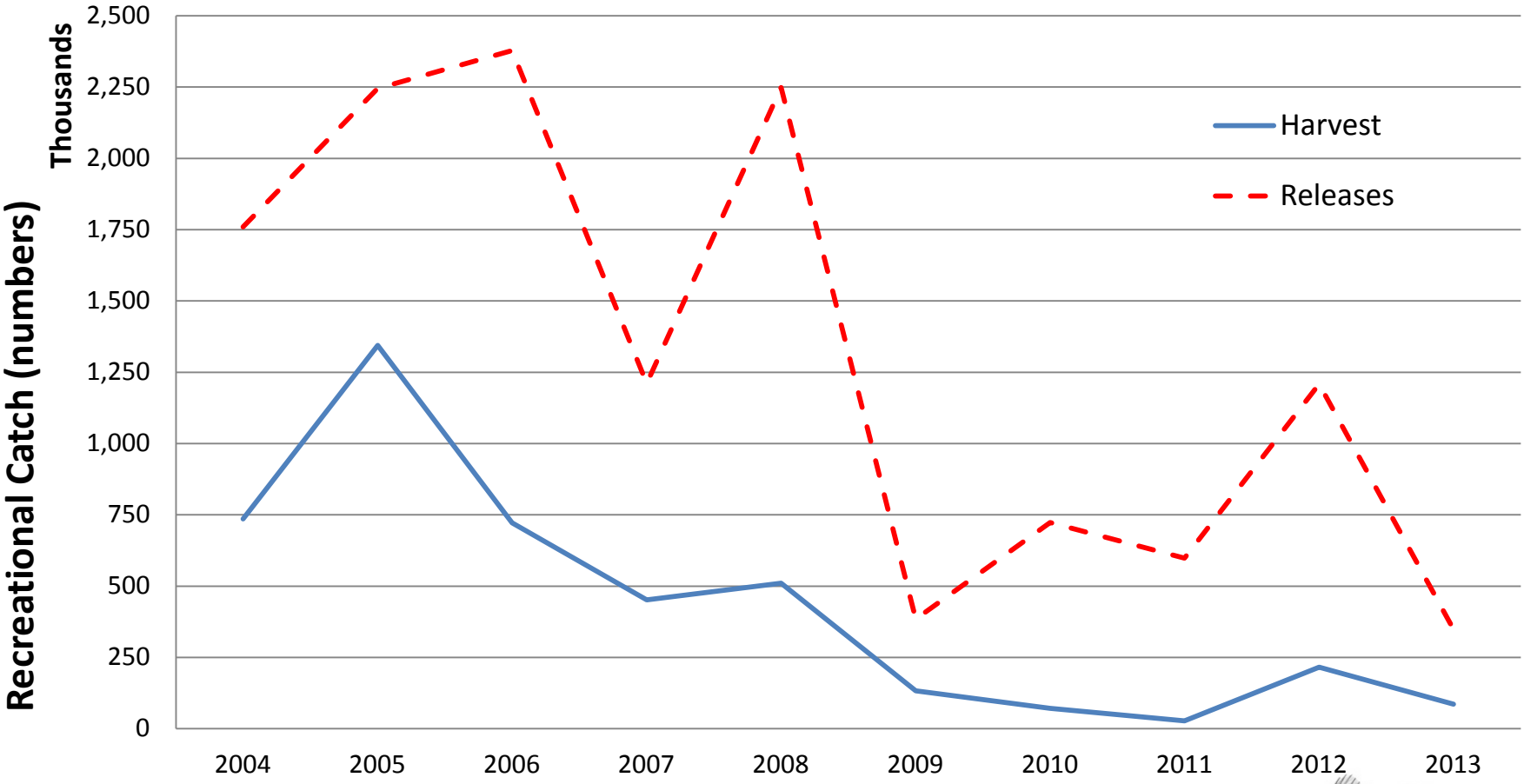


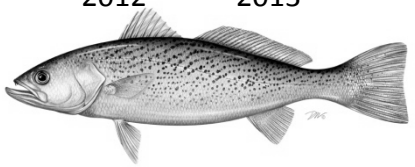
Weakfish Commercial & Recreational Landings



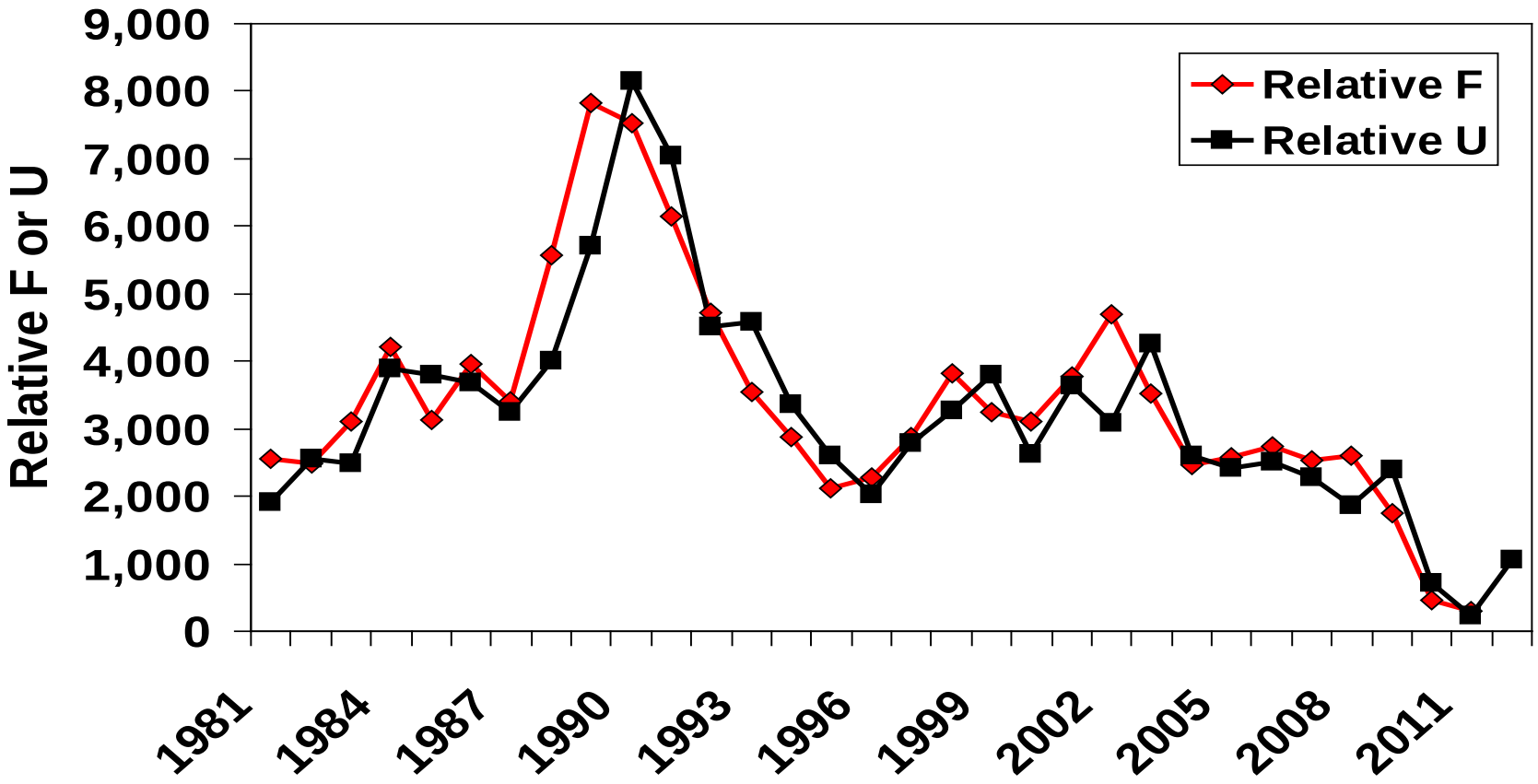


Weakfish Recreational Harvest and Releases

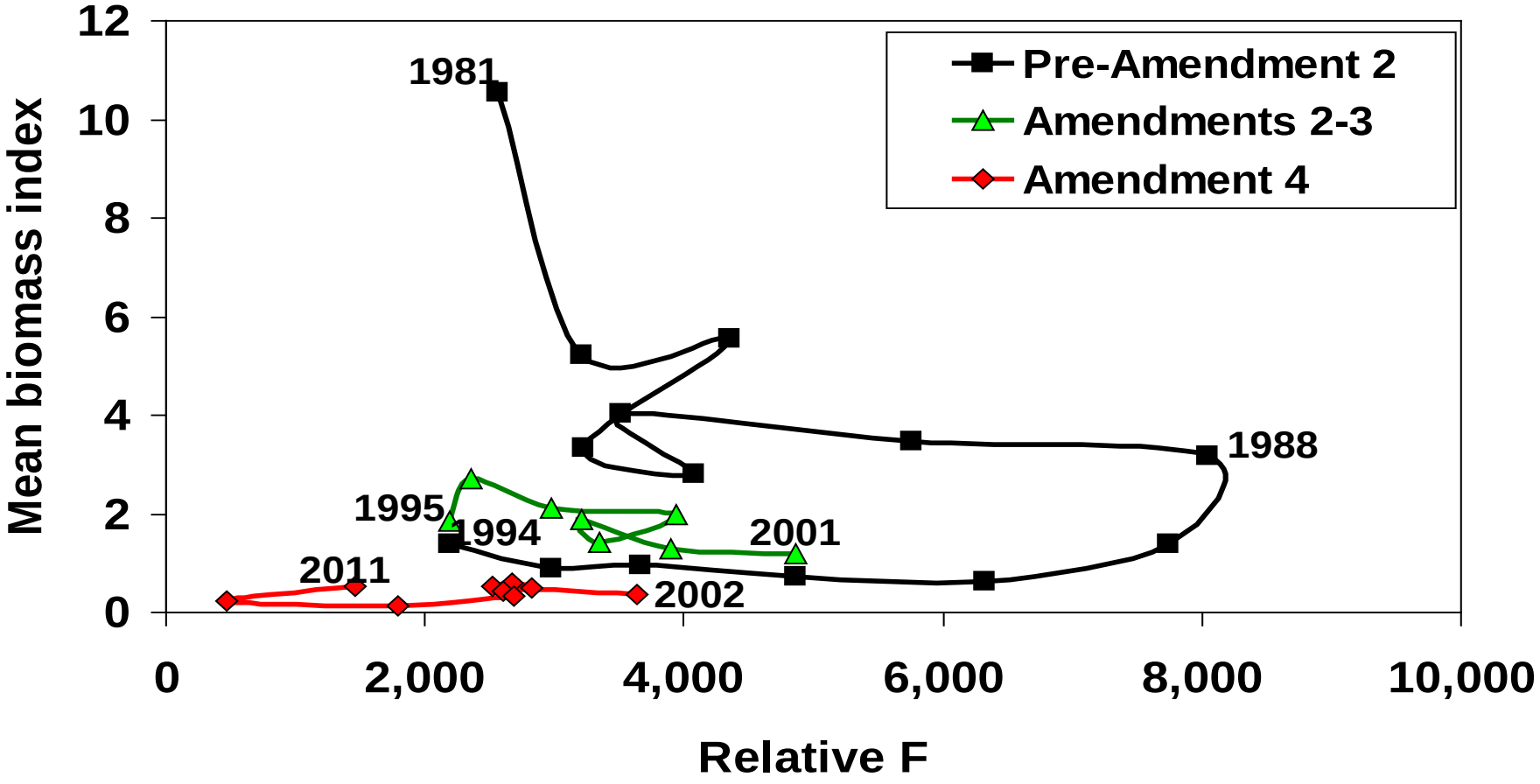




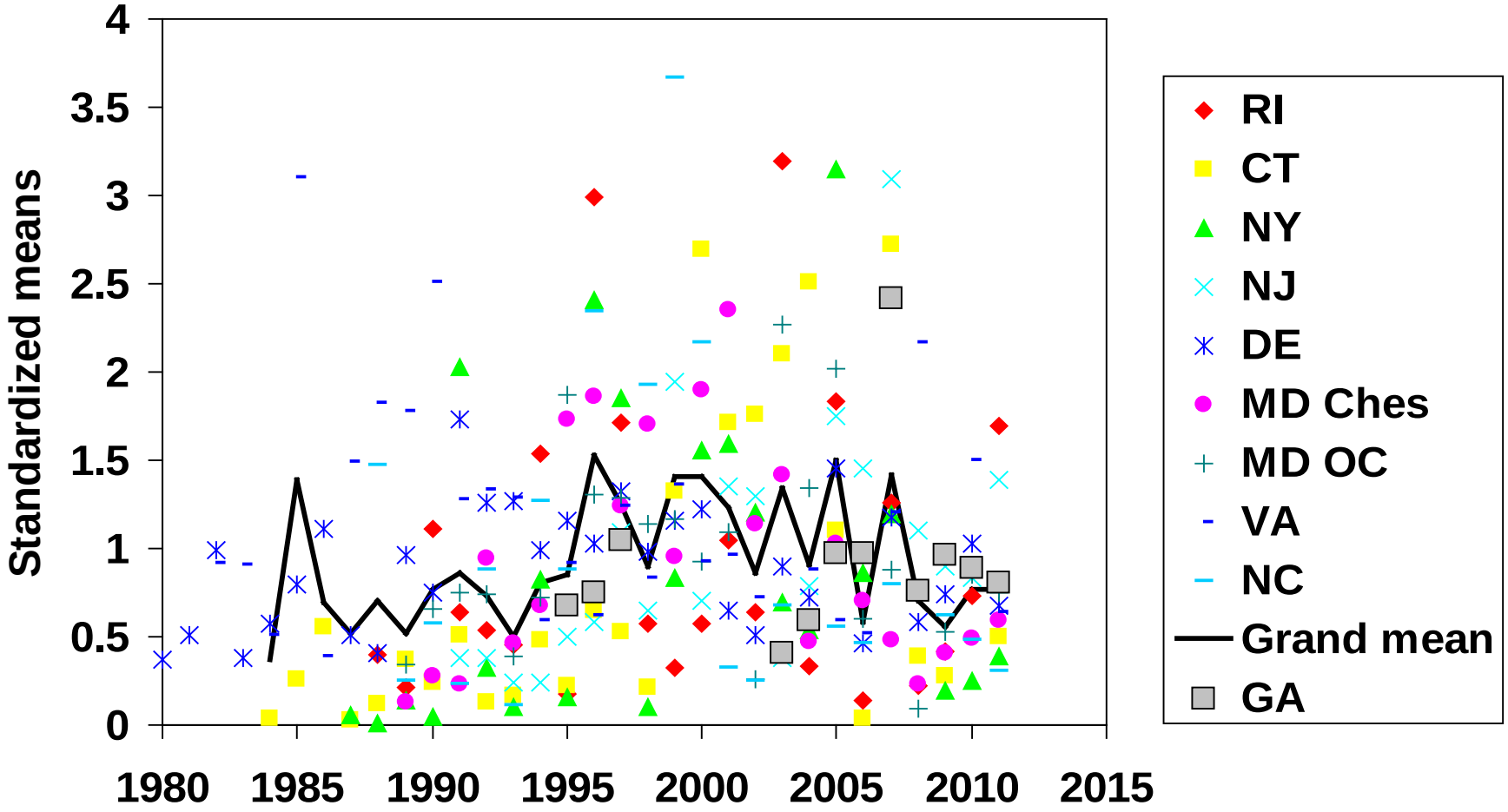
Relative F
(fishing losses/ 2 year mean of indices)



Mean Biomass Index v. Relative F

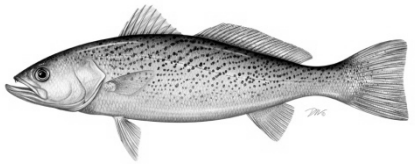


Juvenile Indices



Summary

- Stock indicators are easily calculated and updated
- All indicators continue to show the stock is exhibiting little response to substantial reductions in F
- Targets for indicators – attain levels experienced in mid-1990s



Commercial Trip Analysis

2012 Compliance with 100 pound trip limit (*NC November and December only)

	Total trips	Trips >100lbs	Trips = 100lbs	% trips > 100lbs	% trips = 100lbs
CT	180	4	7	2%	4%
DE	603	26	20	4%	3%
MA	16	2		13%	0%
MD	121	2	4	2%	3%
NJ	588	7	65	1%	11%
NY	1,744	112	84	6%	5%
RI	1,069	3	28	0%	3%
VA	2,232	24	113	1%	5%
NC*	959	6	16	1%	2%
FL	334			0%	0%
MD	64		4	0%	6%

Questions?

TC Report on Delaware Conservation Equivalency Request

Presented to Weakfish Management Board

February 6, 2014

Amendment 3 Language

- **Amendment 3 required that states implement management measures which theoretically reduce the exploitation rate by 17% per fishing season.**
- **DE has presented an option, based on reference period, intended to achieve a target exploitation rate of 34% as well as the reference point, F = 0.5**

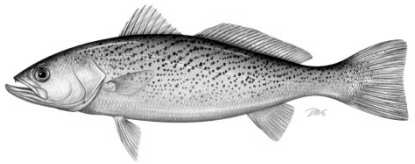
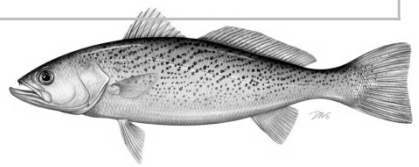


Table 1 from DE's Proposal

Closure Start	Closure End	Days	Pct(LCP)	% F Reduction
1-May	30-Jun	60	91.2%	70.9%
1-May	31-May	31	52.1%	29.6%
1-May	1-Jun	32	53.4%	31.1%
1-May	2-Jun	33	54.5%	32.5%
1-May	3-Jun	34	55.8%	33.9%
1-May	4-Jun	35	56.8%	35.1%



NEW MANAGEMENT, SAME COMPLIANCE: DELAWARE AND THE WEAKFISH FMP

CLOSURE DAYS TO CLOSED SEASON FOR GILL NET FISHERY

DELAWARE DIVISION FISH & WILDLIFE

WHY DELAWARE CHOSE NET CLOSURE DAYS

- **Huge recreational and commercial weakfish fisheries in Delaware Bay during 1970s and 1980s.**
- **Weakfish population decline by the early 1990s instigates management action.**
- **Net closure days keep nets out of water on weekends during peak recreational weakfish period and still allow netters to catch a lot of weakfish.**
- **Delaware already had a law banning gill netting on weekends during peak weakfish season.**

NET CLOSURE DAYS FOR WEAKFISH FMP COMPLIANCE

- **Since 1997, Delaware has required nets be out of the water for a week in May, a week in June and all weekends in May and June to meet the compliance requirements of Amendment 3 to the ASMFC Weakfish FMP.**
- **Weekends are defined in Delaware regulations as Friday through Sunday.**
- **Net closure days in 2013: May 1-6, May 10-12, May 17-19, May 24-27, May 31- June 2, June 7-9, June 14-16, and June 21-30.**

NET CLOSURE DAYS IN STATE CODE

- **7 Delaware Code § 923. Gill nets; restrictions on use; seasons.**

(c) Unless otherwise authorized by a scientific permit issued by the Division, no person shall fish any drifting gill net in the tidal waters of this State during the period 12:01 a.m. Saturday through to 4:00 p.m. Sunday or on a legal state holiday during a period beginning at midnight May 10 and ending at midnight on September 30 next ensuing during any calendar year.

- **Weakfish plan added 17 closure days in 2013 to the state-mandated closure days.**

CLOSURE DAYS EFFECT ON GILL NETTING OTHER SPECIES

- **Black drum are in Delaware Bay in May and June.**
  - Closure days limit ability of netters to pursue black drum.
- **Fresh Atlantic menhaden is in high demand during May as bait for striped bass, particularly on weekends.**
  - Menhaden caught on Thursday can not be sold as fresh on Sunday.

MODIFICATIONS TO NET CLOSURE DAYS

- **The Tidal Finfish Advisory Council endorsed DDFW pursuing the following change at the 9/18/13 meeting:**
  - Ask ASMFC to allow Delaware to use an “Alternative State Management Regime”, as per Amendment 3; switch from closure days to closed season.
  - Estimate the length of a closed weakfish season that would be the equivalent of the current closure days.

WEAKFISH CLOSED SEASON

- **DDFW must follow ASMFC guidelines in estimating the necessary closed season:**
  - Closed season must occur during the months of maximum weakfish landings during 1989 – 1991.
  - Most weakfish were landed during April through June.
  - Peak landings month was May.
  - A closed season from May 1 to June 2 would give the required 32% reduction in fishing mortality.