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Does not represent
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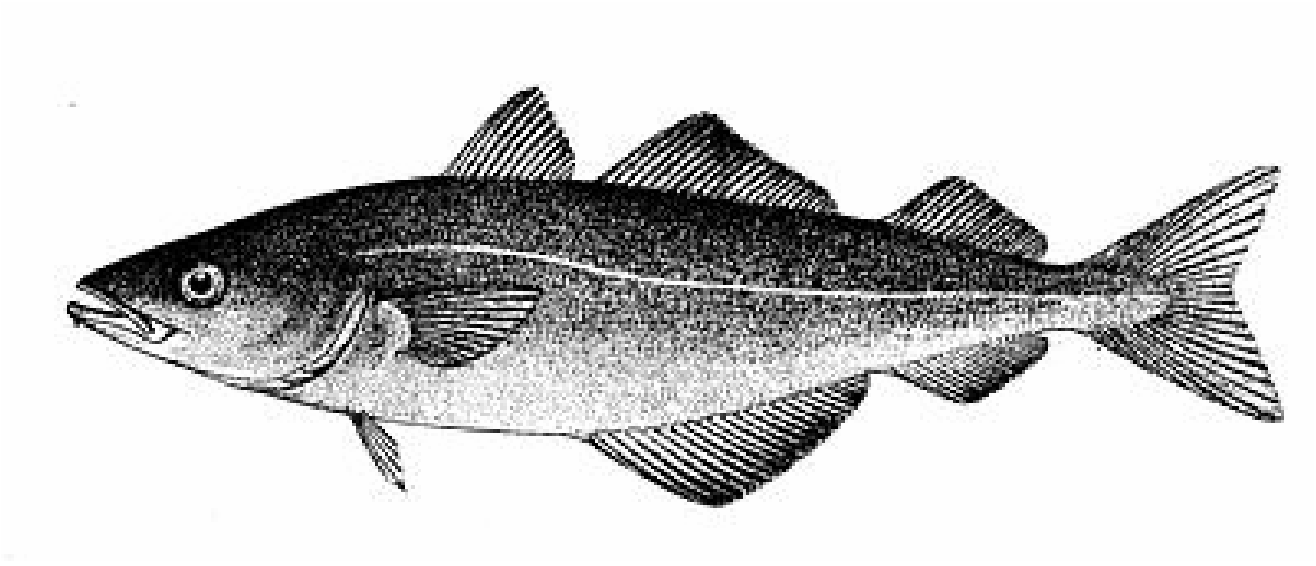
4/28/08

M. Pollock in Subareas 5 & 6



Description and history of current approach.

In 2002, index-based biological reference points were developed for a portion of the pollock stock primarily under US management jurisdiction (Subareas 5 and 6), including a portion of eastern Georges Bank (Subdivision 5Zc) that is under Canadian management jurisdiction (NEFSC 2002). These were based on An Index Model (AIM)

The most recent assessment of the resource inhabiting the area comprising this management unit was conducted in October, 2005 at the second Groundfish Assessment Update Meeting (GARM II).

At that time it was determined that the index of current biomass was greater than ½ of the Bmsy proxy reference point and that the index of current F was below the Fmsy proxy reference point (Mayo and Col 2002).

Status of Pollock in SA 5&6 from the 2005 GARM II

MSY Based Reference Points for Pollock in SA 5&6.

MSY	= 17,640 mt
B_{MSY}	= 3.00 kg/tow
F_{MSY}	= 5.88 (Relative F)

In 2004, the 3-year average biomass index for pollock was 1.99, approximately 66% of the 3.00 Bmsy proxy, an increase from the 2001 value of 1.601.

In 2004, the 3-year average relative F was 3.57, approximately 61% of the 5.88 Fmsy proxy, a slight decrease from the 2001 value of 3.55.

Thus, in 2004 the stock was not overfished and overfishing was not occurring.

Commercial Statistical Areas Used to Define the Pollock Stock in Subareas 5&6

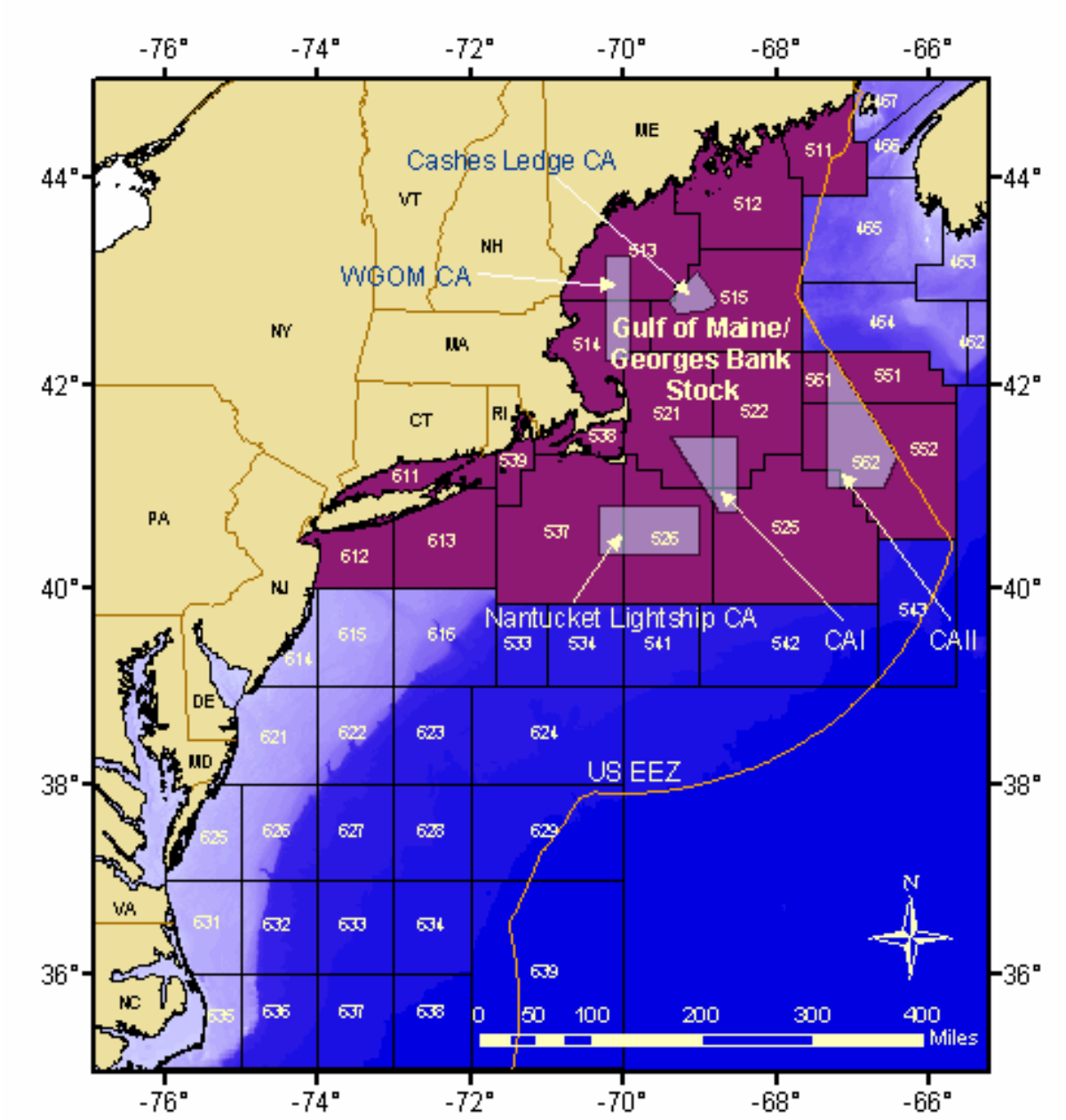
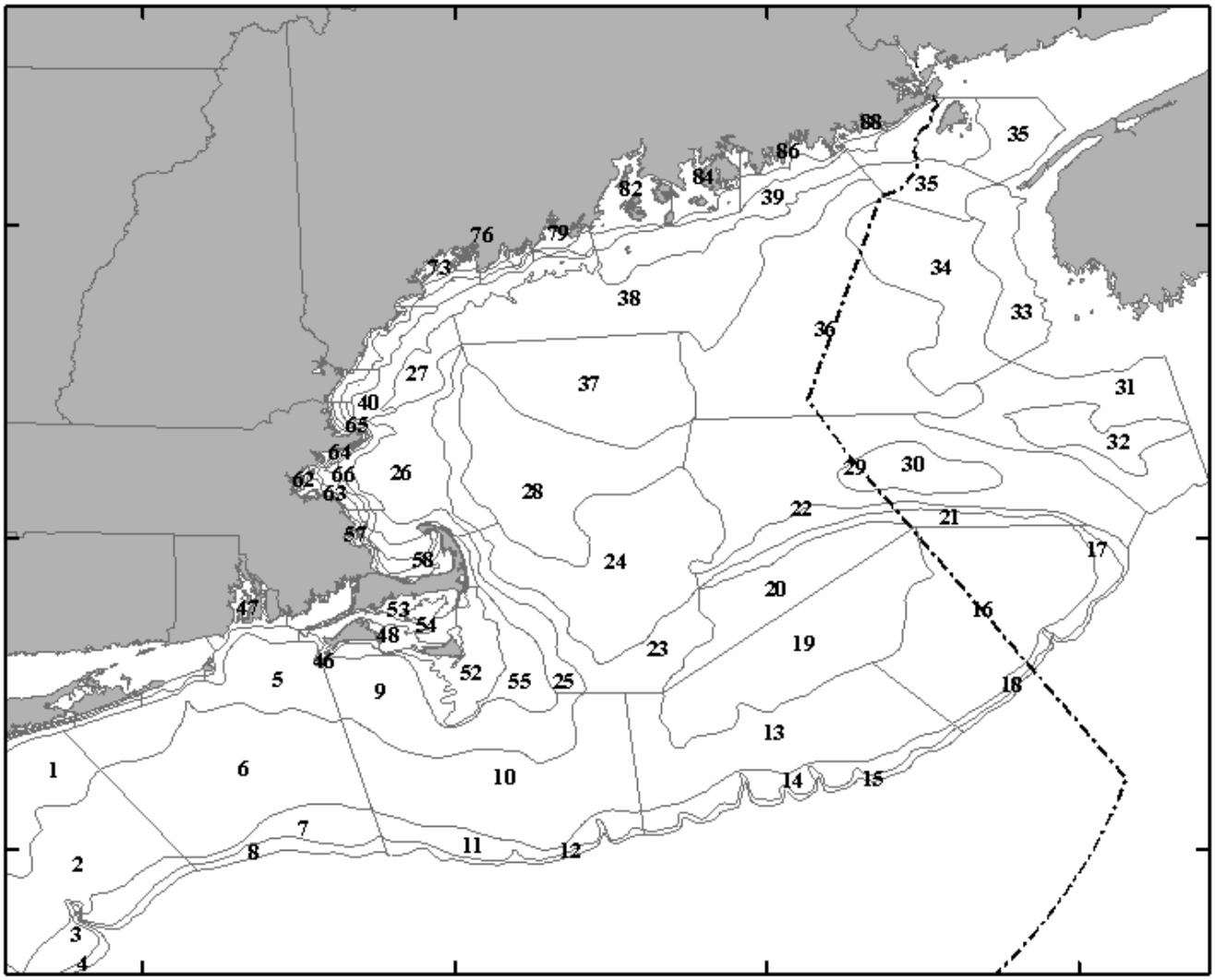


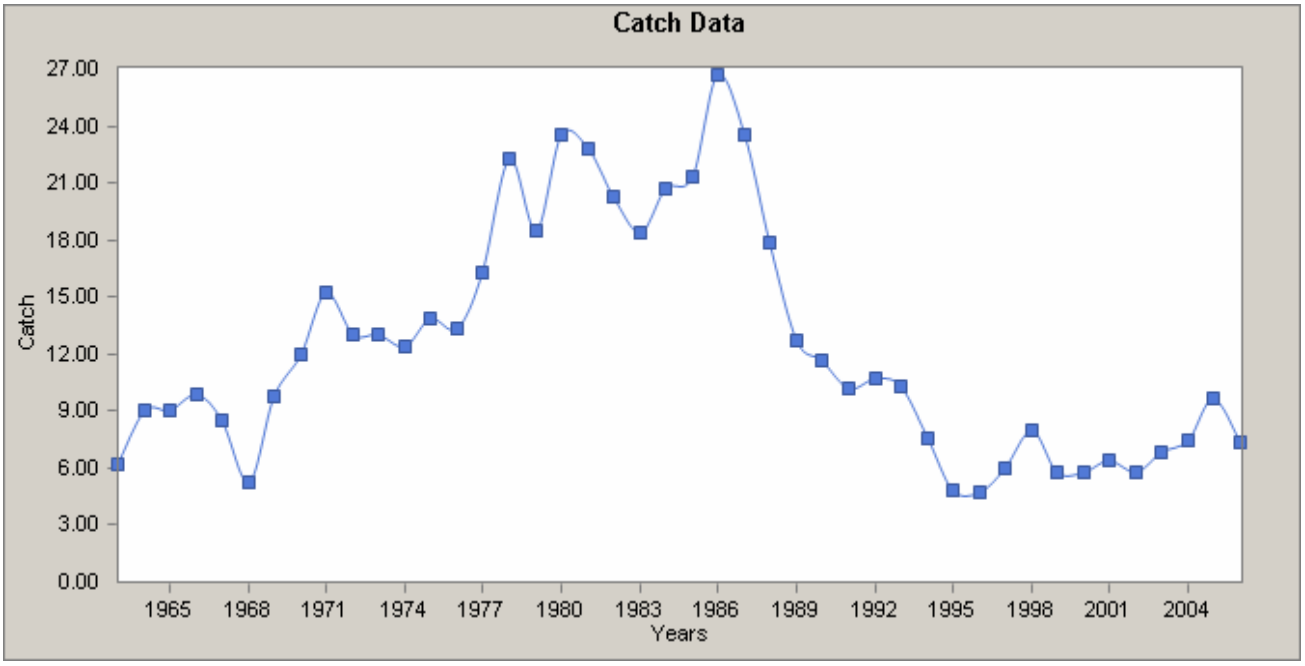
Figure 6.1. Statistical areas used to define the Gulf of Maine/Georges Bank pollock stock.

NEFSC Bottom Trawl Survey Strata:

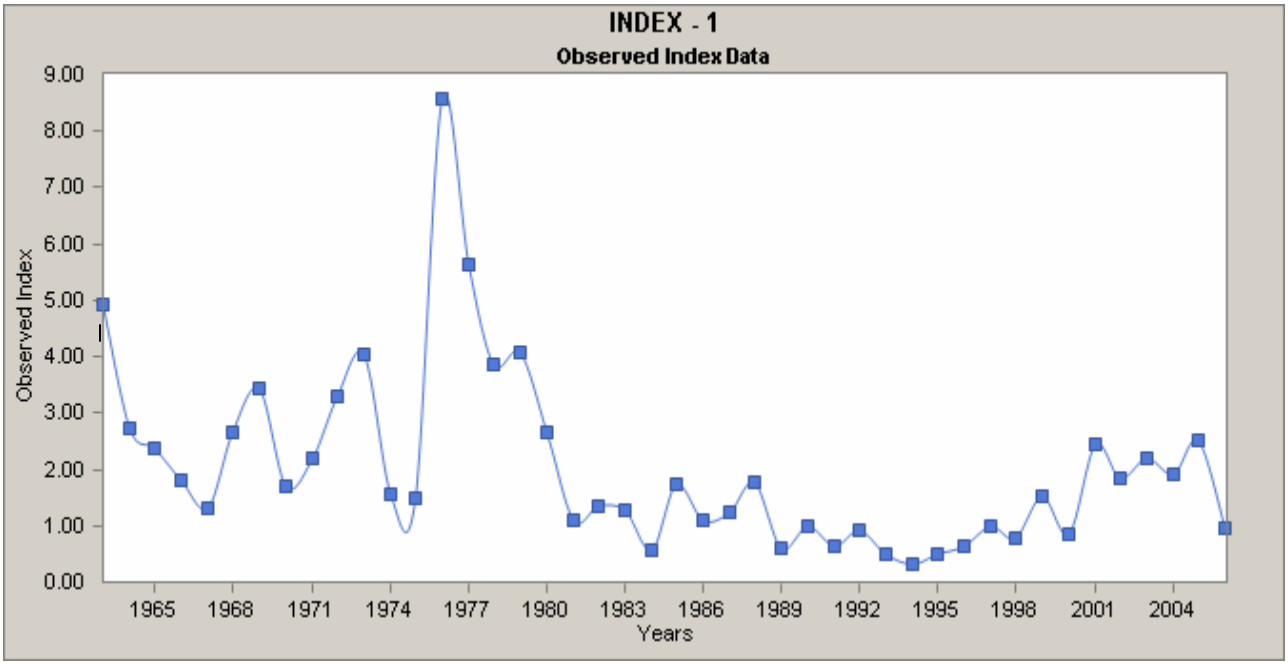
The Pollock Assessment includes strata 13-30, 33-34, and 36-40



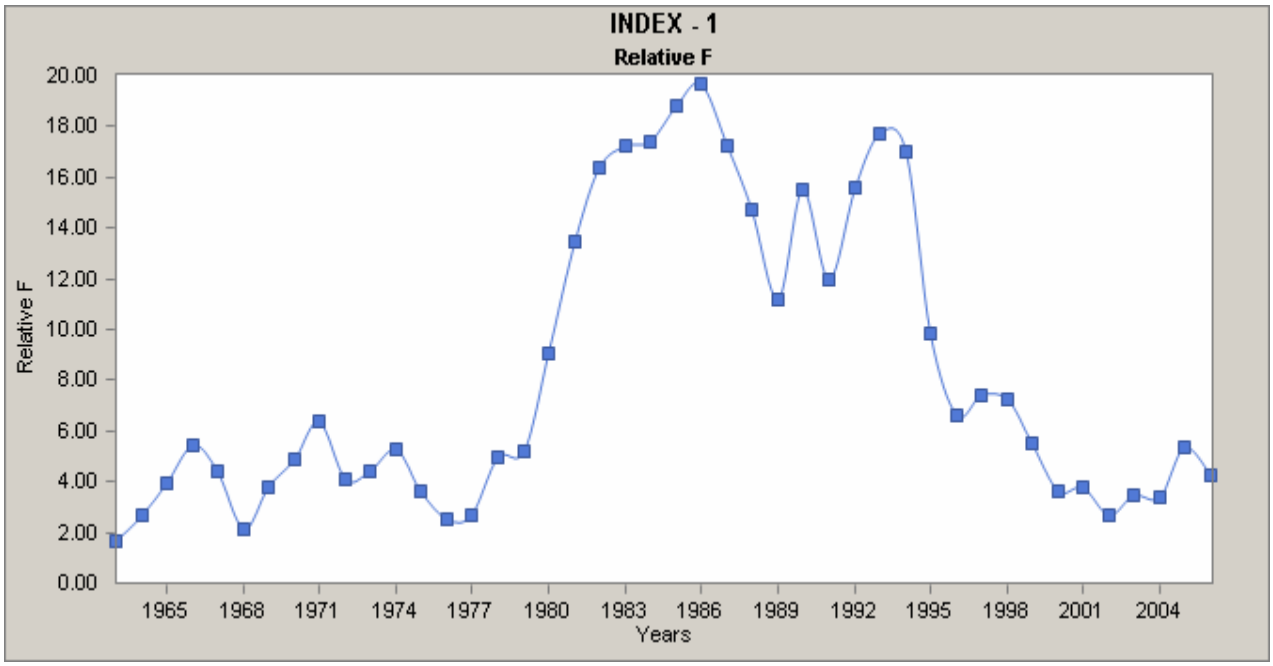
Commercial and recreational landings (000s mt)



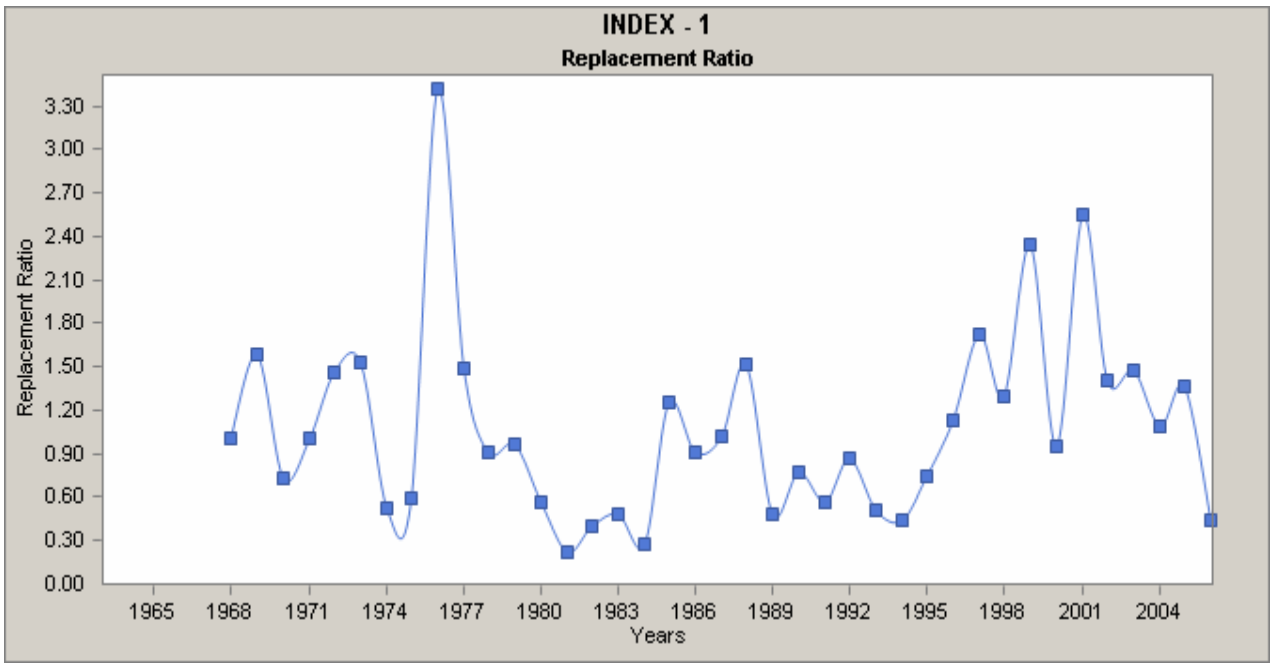
NEFSC autumn trawl survey biomass index (kg/tow)



Relative F (catch/survey biomass index)



Replacement Ratio



Reference Point Calculations

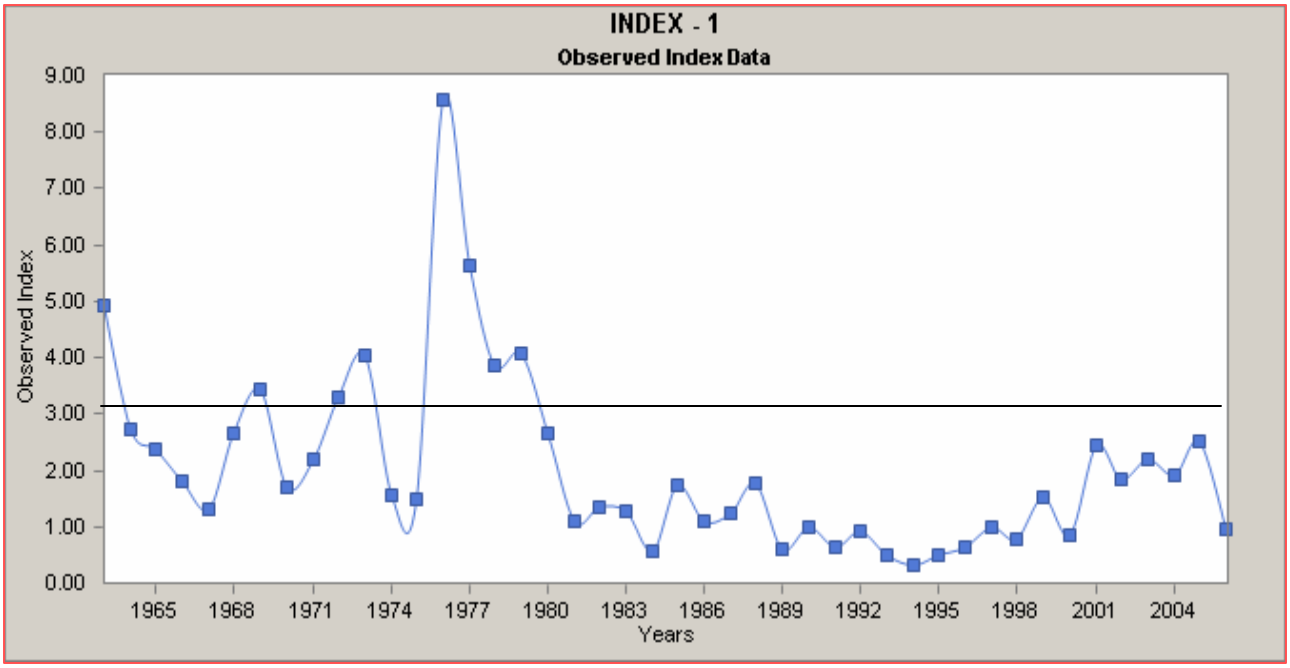
1. Estimate Bmsy by evaluating survey biomass indices against replacement ratios

2. Estimate Fmsy by regressing replacement ratios on relative F

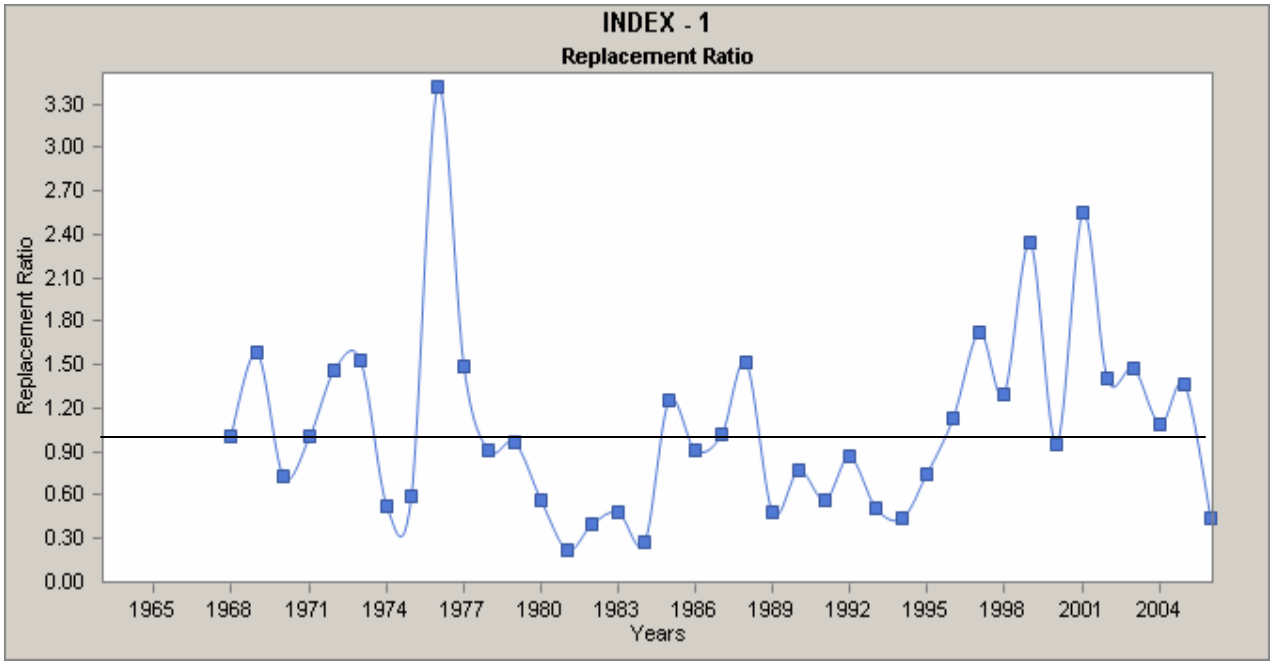
3. MSY is the product of Bmsy and Fmsy

1. Estimate Bmsy by evaluating survey biomass indices against replacement ratios

From NEFSC (2002): "… most of the replacement ratios at or above 1.0 occurred prior to the 1980s when the biomass index was greater than about 3.0"



Problem: From 1980 through 1995 when relative F was often 3-4 times the Fmsy proxy (5.88), landings slightly exceeded the MSY estimate (17,640 mt) (Table M4)



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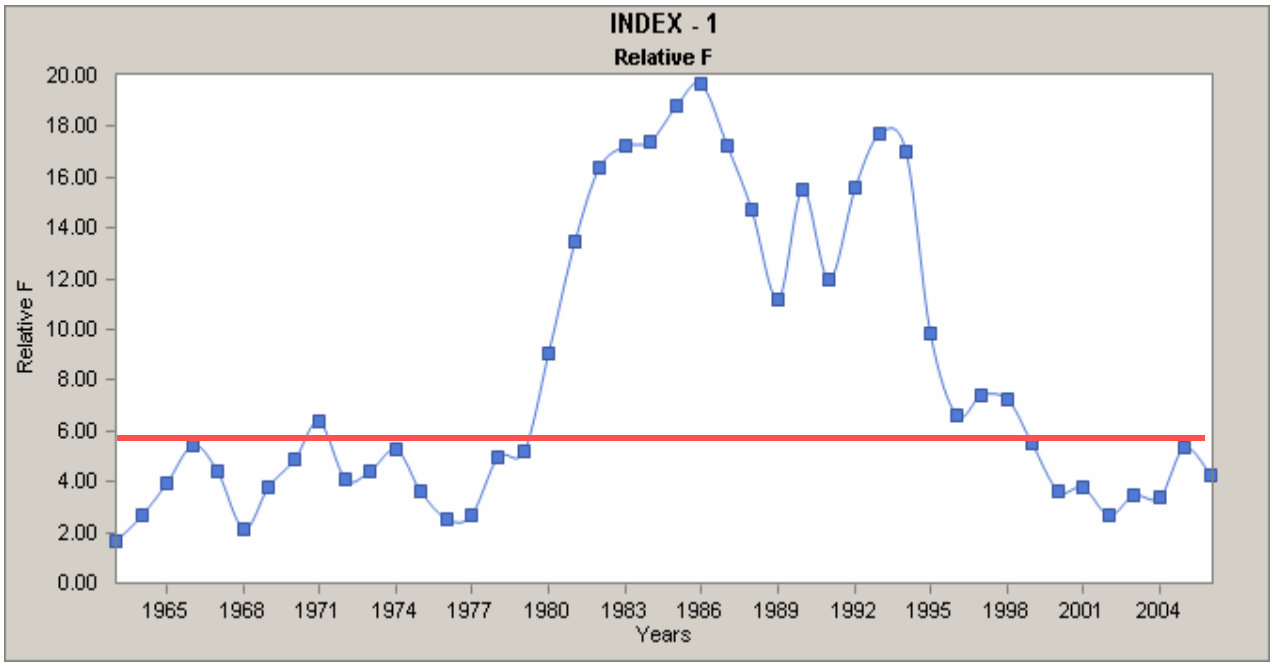
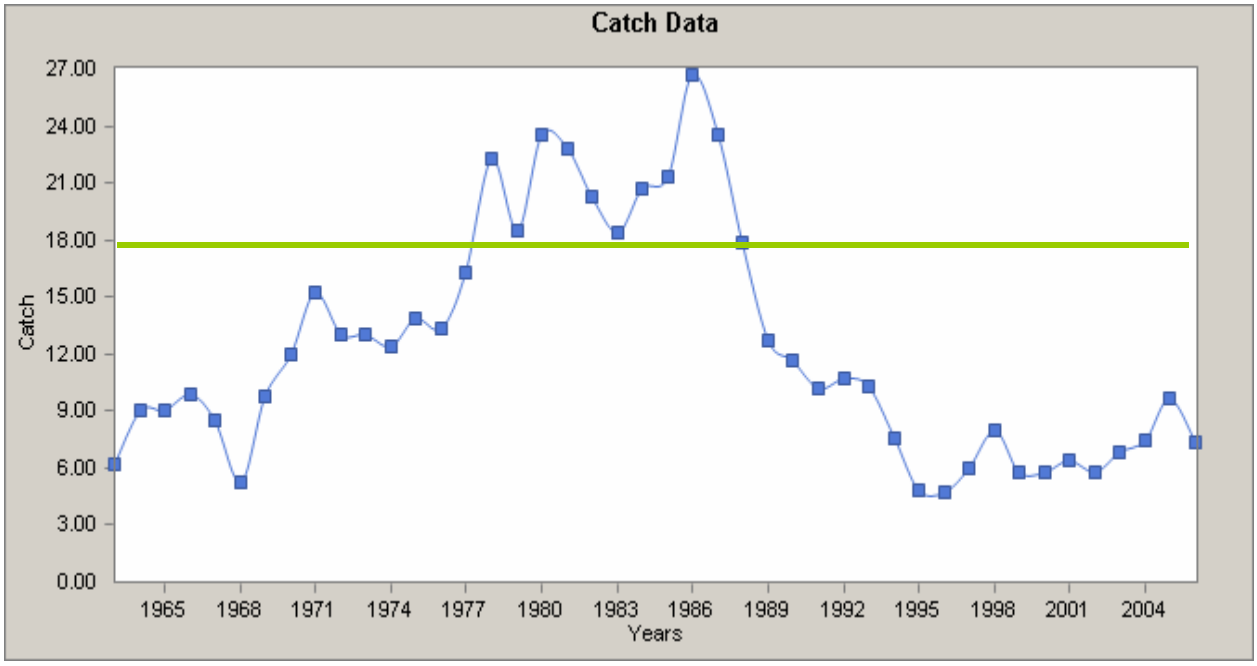
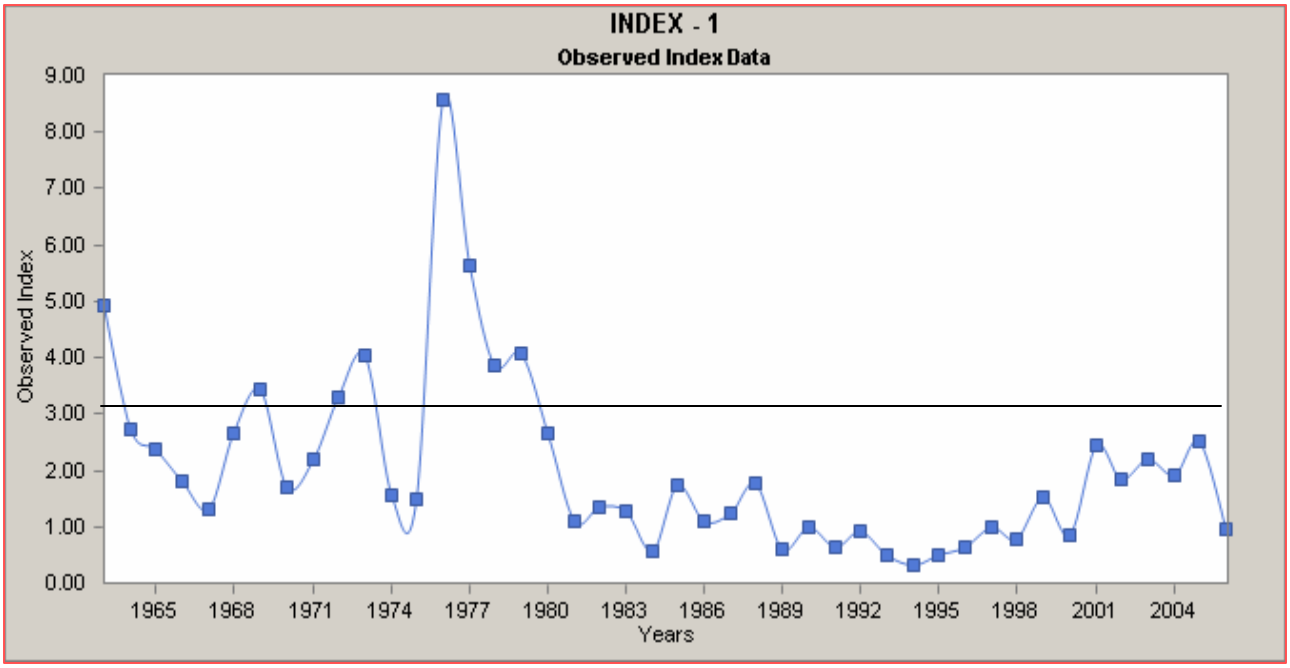
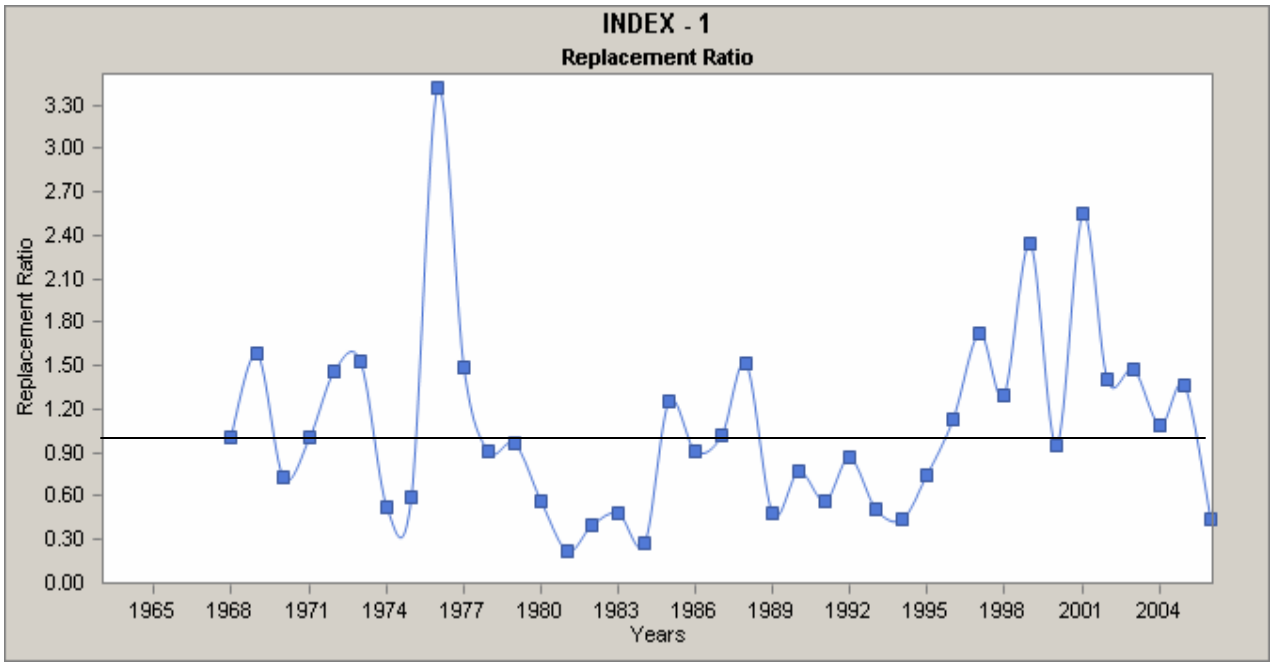


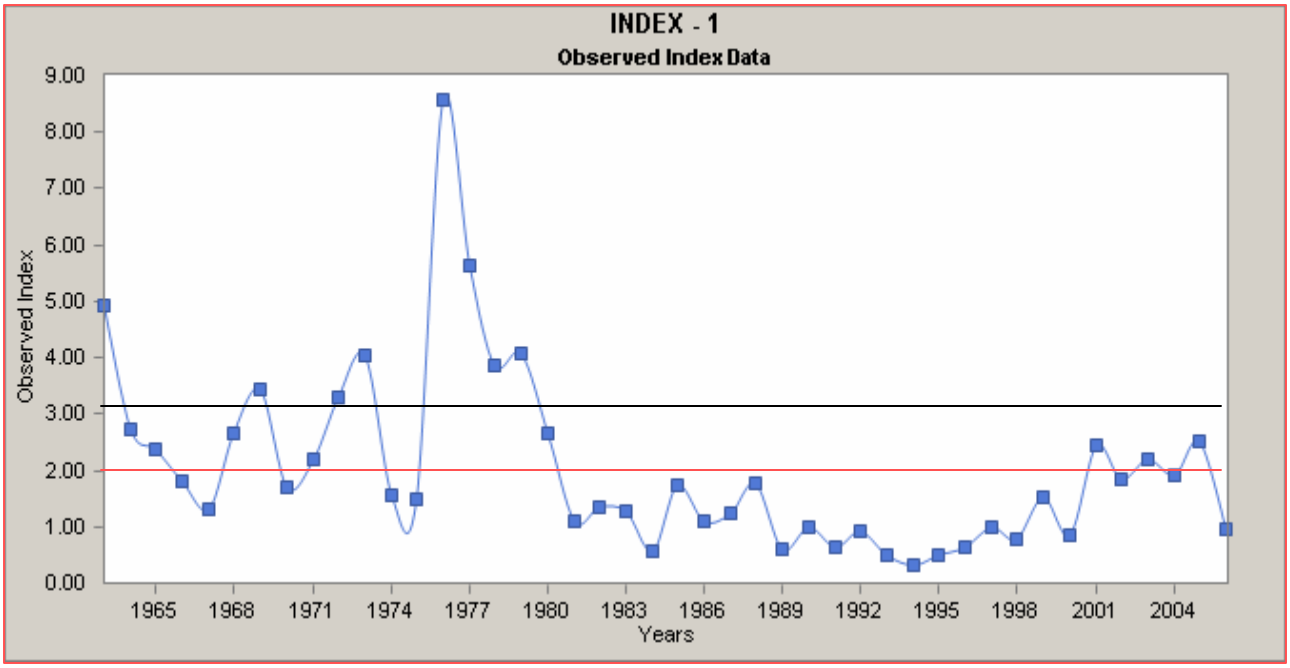


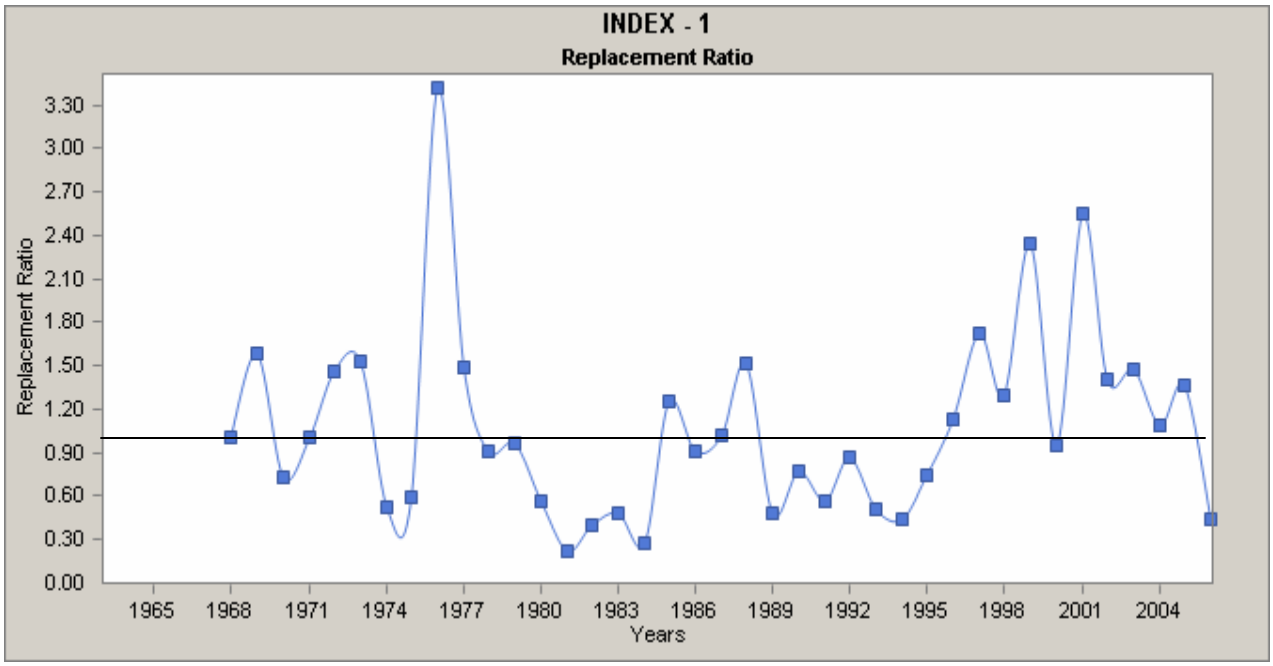
Alternative rationale: Most of the replacement ratios below 1.0 occurred during the 1980s and 1990s when the biomass index was below 3.0.



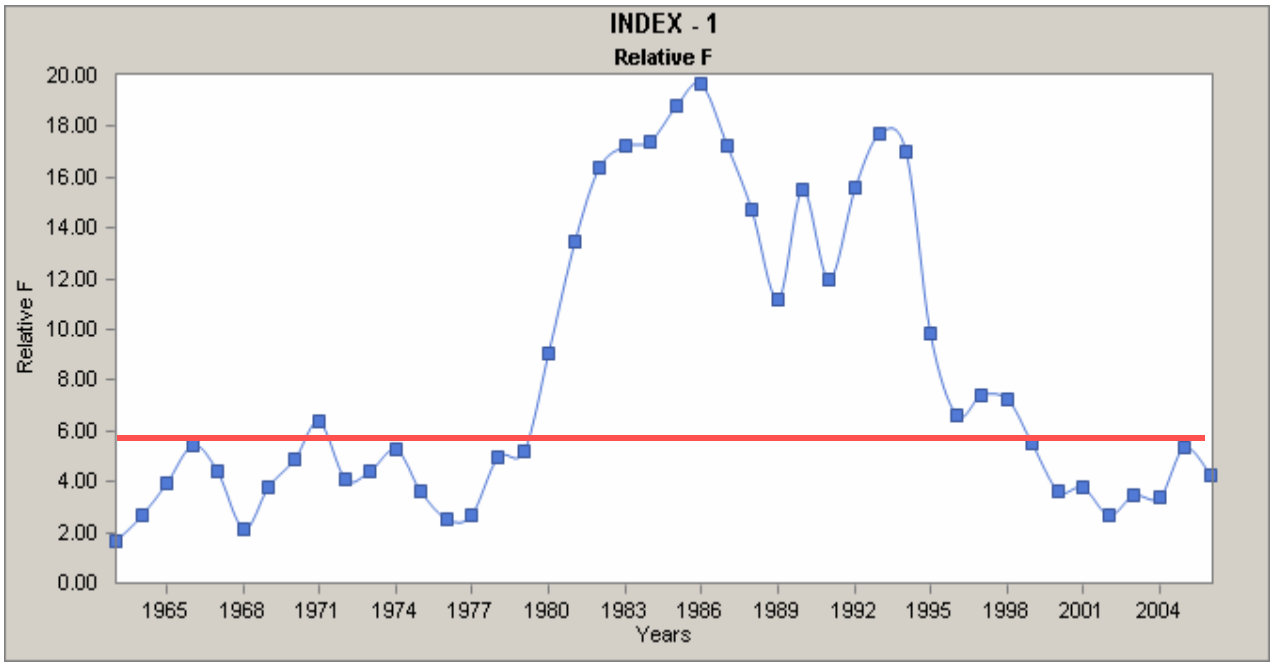


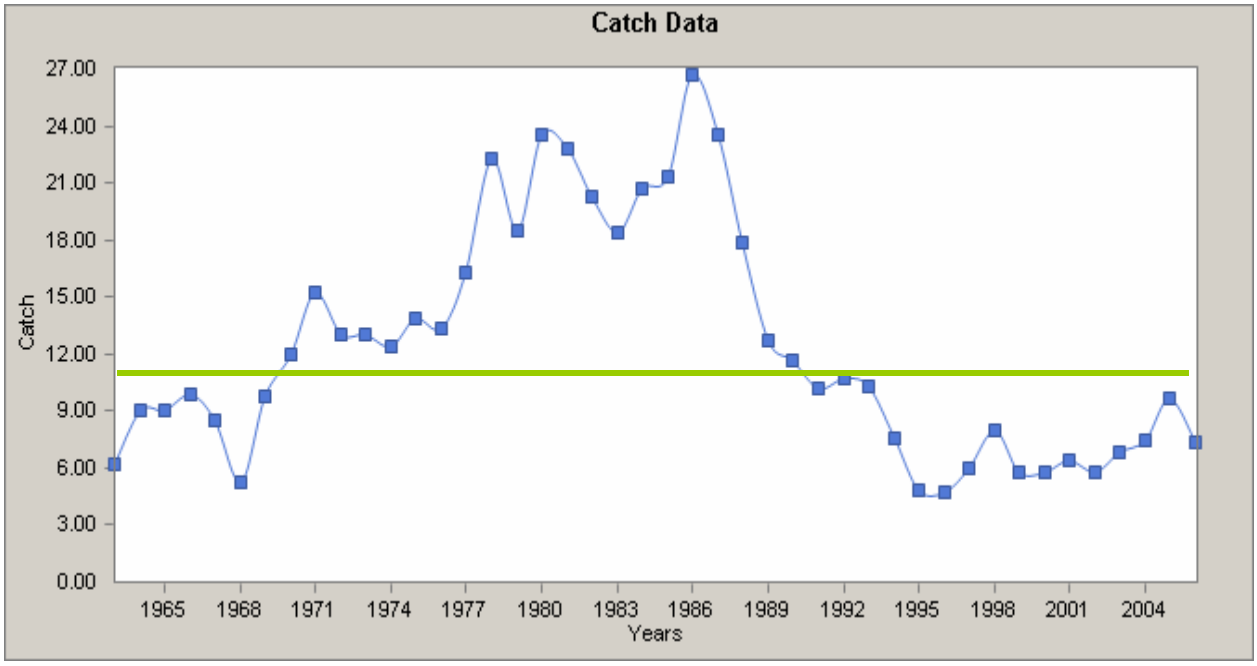
Alternative rationale: Most of the replacement ratios below 1.0 occurred during the 1980s and 1990s when the biomass index was below 3.0. (but also below 2.0)





A Bmsy value of 2.0 results in a lower MSY value (11,516 mt) and “fixes” the mis-match between landings and relative F





2. Estimate Fmsy by regressing replacement ratios on relative F

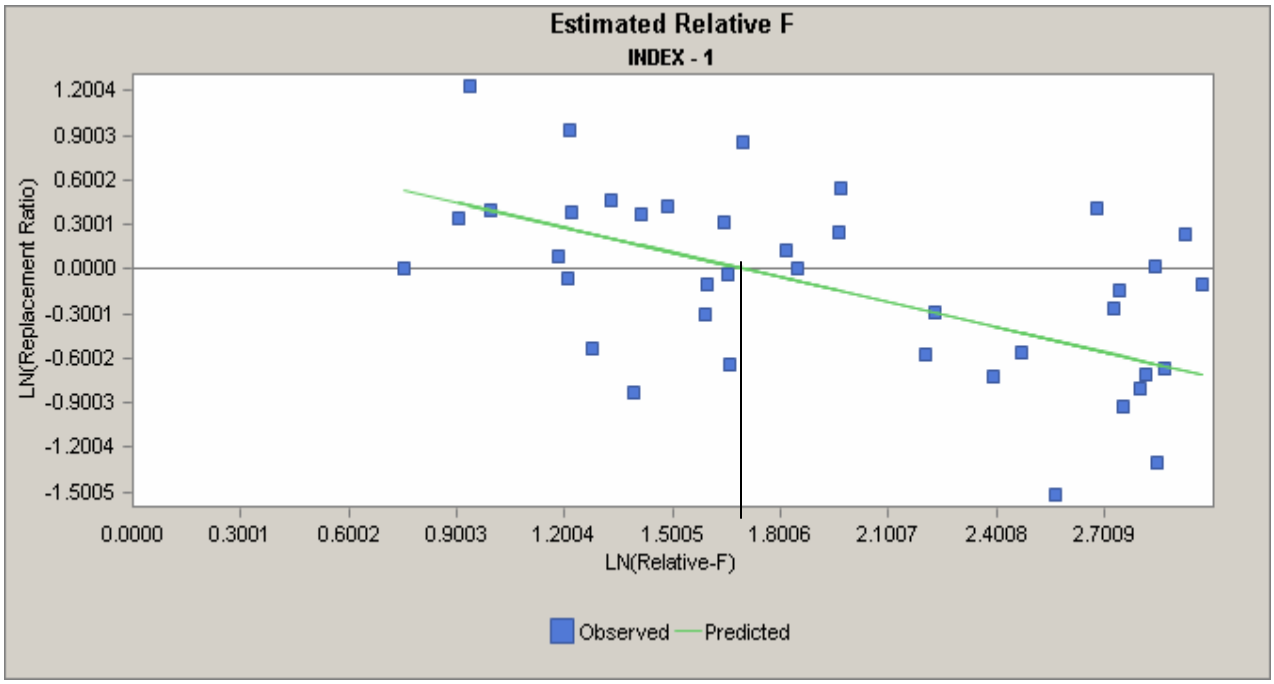
   2 Fits

   Commercial landings alone (as per NEFSC 2002)

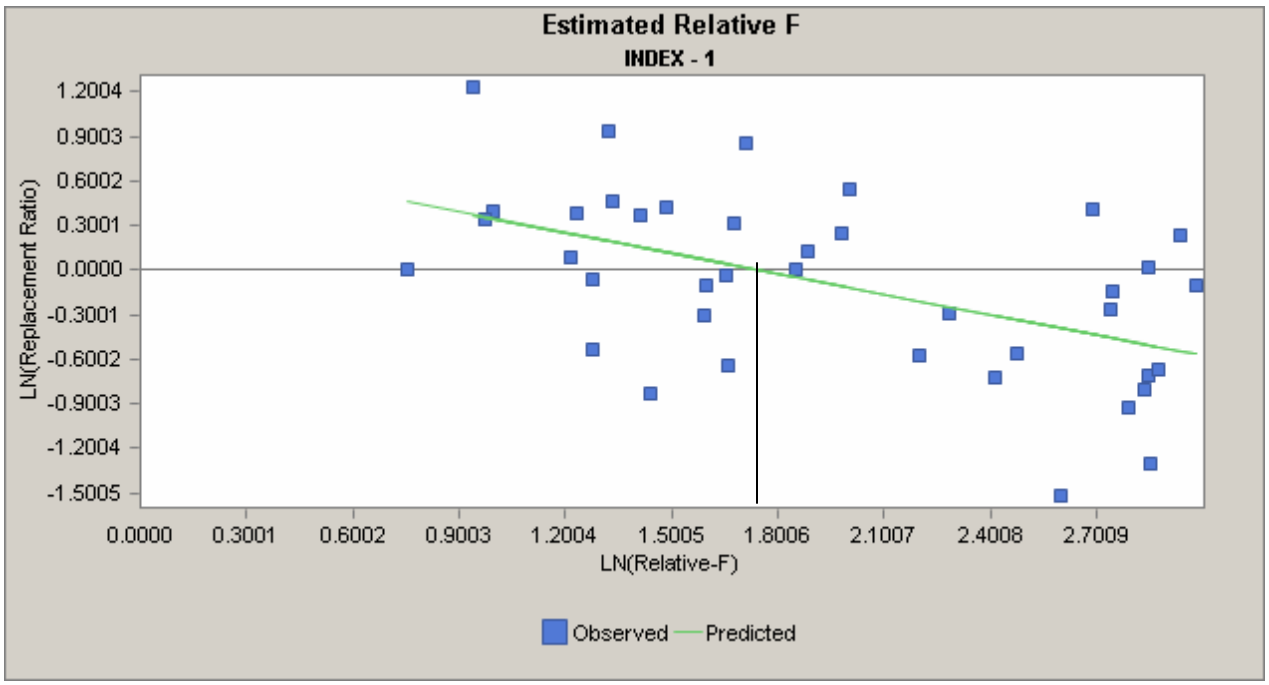
   Commercial and recreational landings

Estimates of Fmsy proxy values (relative F)

Commercial Landings Alone: Fmsy = 5.637

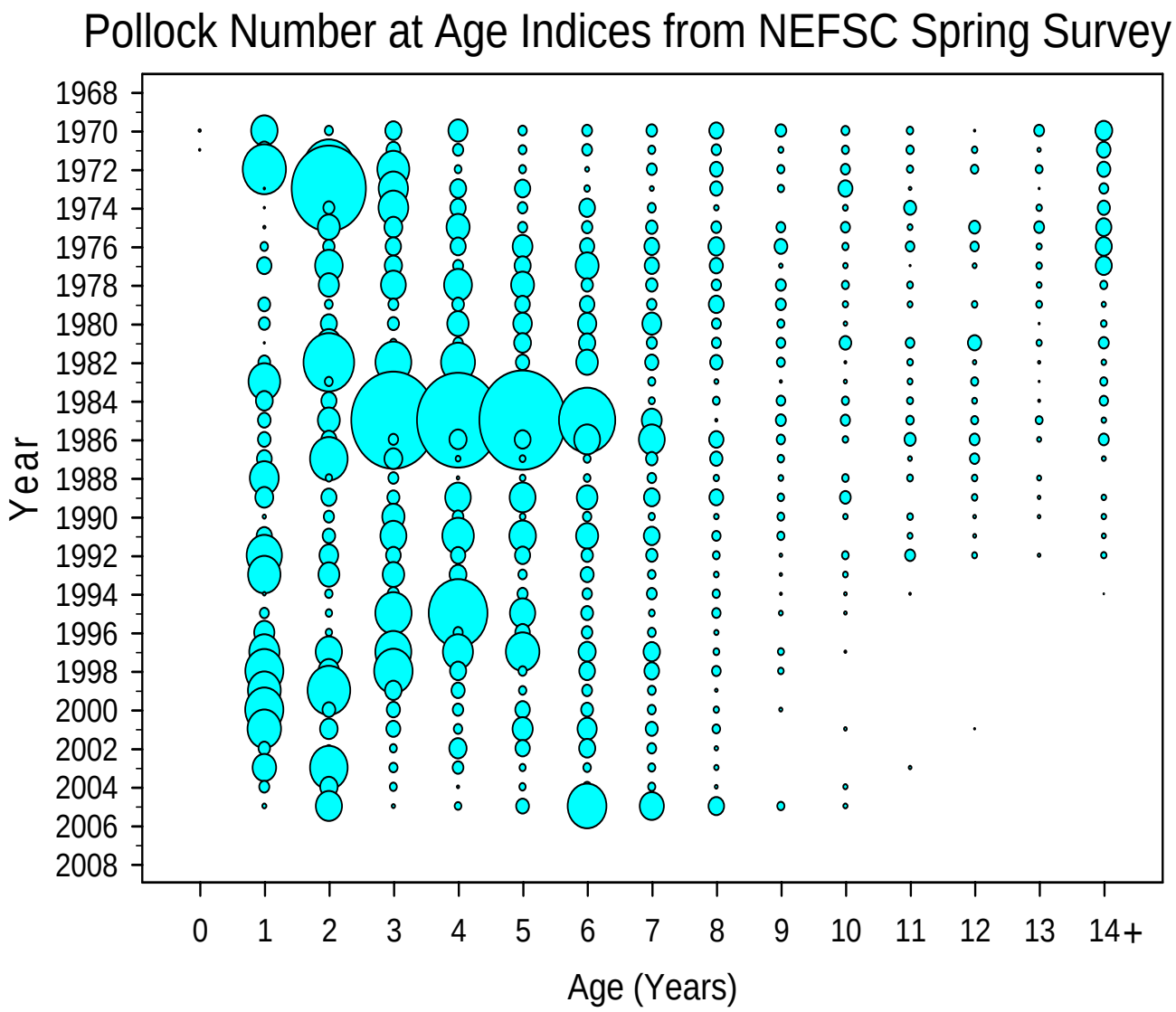


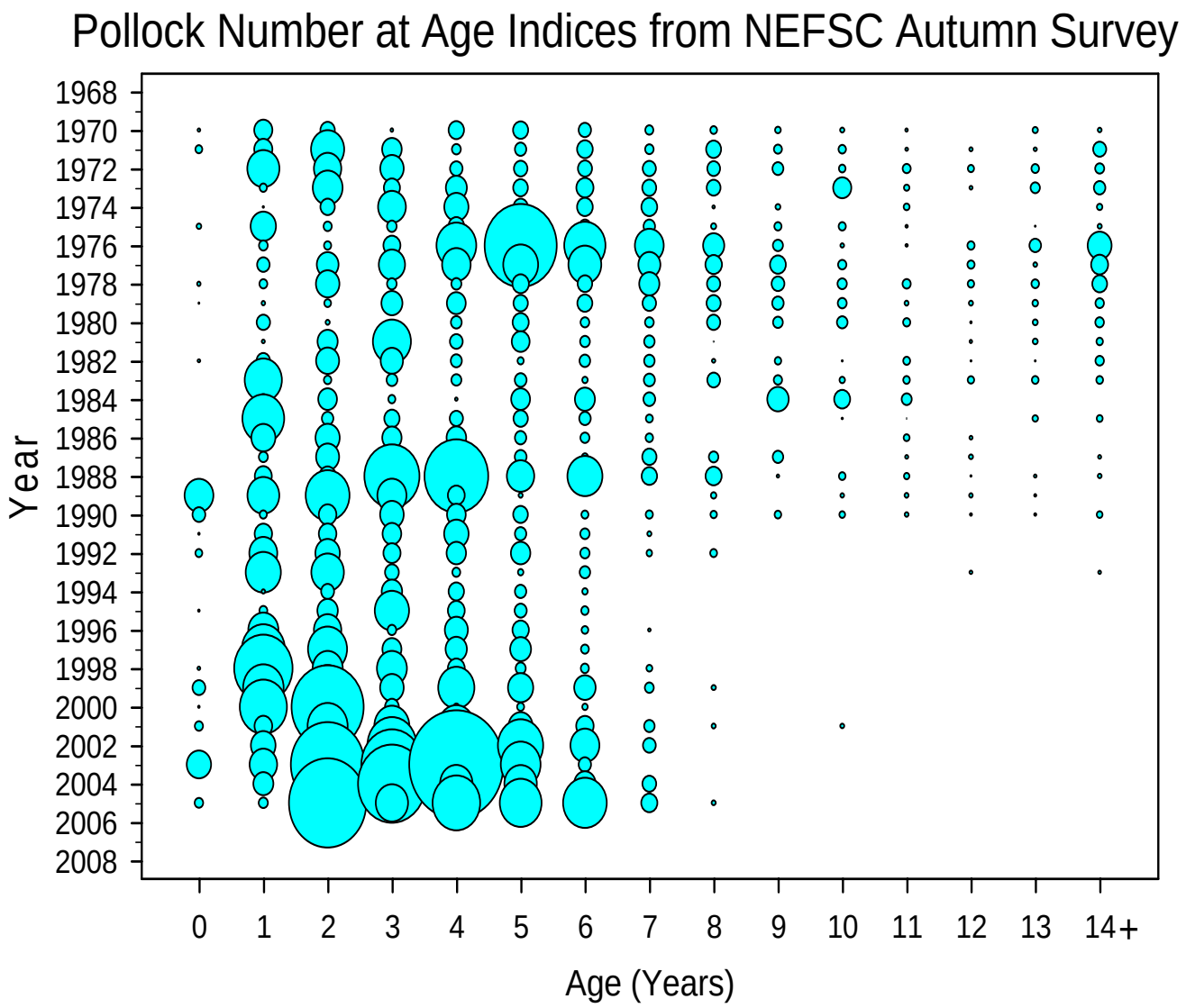
Commercial and Recreational Landings: Fmsy = 5.758



Panel comments addressed next

How well can year classes be tracked in the catch at age data?


Pollock Number at Age Indices from NEFSC Spring Survey
Year
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14+
Age (Years)


Pollock Number at Age Indices from NEFSC Autumn Survey
Year
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14+
Age (Years)

Summary

Current Stock Status

Since the mid-1990s, the NEFSC autumn survey biomass had been increasing towards the current 3.0 kg/tow Bmsy proxy. However, the biomass index declined substantially in 2006 and 2007 below 1.0 kg/tow. Since 1999, the relative F has remained below the Fmsy proxy and the replacement ratio has remained at or above 1.0

Reference Points

Commercial landings alone

Existing Bmsy	Revised Bmsy
Bmsy 3.00 kg/tow	Bmsy 2.00 kg/tow
Fmsy 5.637 (rel. F)	Fmsy 5.637 (rel. F)
MSY 16,911 mt	MSY 11,274 mt

Commercial and recreational landings

Existing Bmsy	Revised Bmsy
Bmsy 3.00 kg/tow	Bmsy 2.00 kg/tow
Fmsy 5.758 (rel. F)	Fmsy 5.758 (rel. F)
MSY 17,274 mt	MSY 11,516 mt