

# Groundfish ABC's FY 2013 - 2015

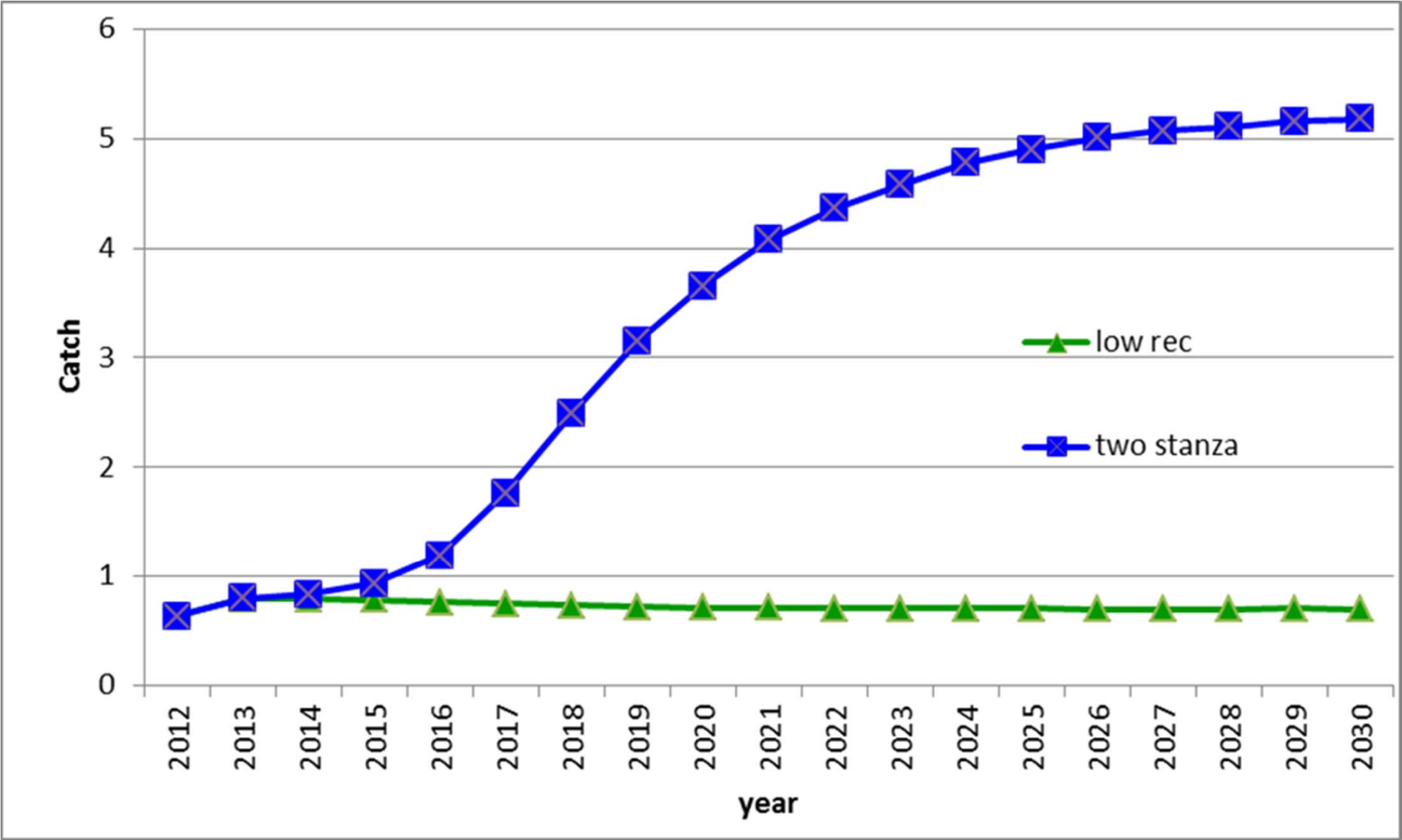
New England Fishery Management  
Council

Science and Statistical Committee  
September 13, 2012

# GB Yellowtail Flounder

- Retrospective pattern increasing
- Have not achieved  $F_{ref}/F_{MSY}$  with catches below projection output
- Recruitment assumption may be optimistic
- Range of 200-500 mt seems necessary
- Higher end of range less likely to end overfishing

# SNEMA YTF Catches



# SNEMA YTF Recommendation

- 700 – 770 mt
  - Differs from default control rule
  - Similar to long-term catch under recent recruitment
  - Consistent with MSY if recent recruitment is likely
  - Should allow stock increases if two-stanza recruitment is more likely

# SNE/MA YTF Projections

- Two possible recruitment scenarios
  - Recent
  - Two stanza
  - Affect catches after 2013
- 75 pct of FMSY

# Overview

- Short recap of last meeting
- OFLs/ABCs for four stocks
  - GOM haddock, plaice, witch flounder, white hake
- FY 2013 – FY 2015
- ABCs for seven stocks addressed in March;  
three stocks address in August
- GOM and GB cod, white hake addressed after  
benchmarks this winter

# General Comments

- Past work showed projections unreliable, particularly in out-years
- Two alternatives considered, but not successful:
  - Time series
  - Best stock size/best fishing mortality
- Back to using projections to inform catch advice

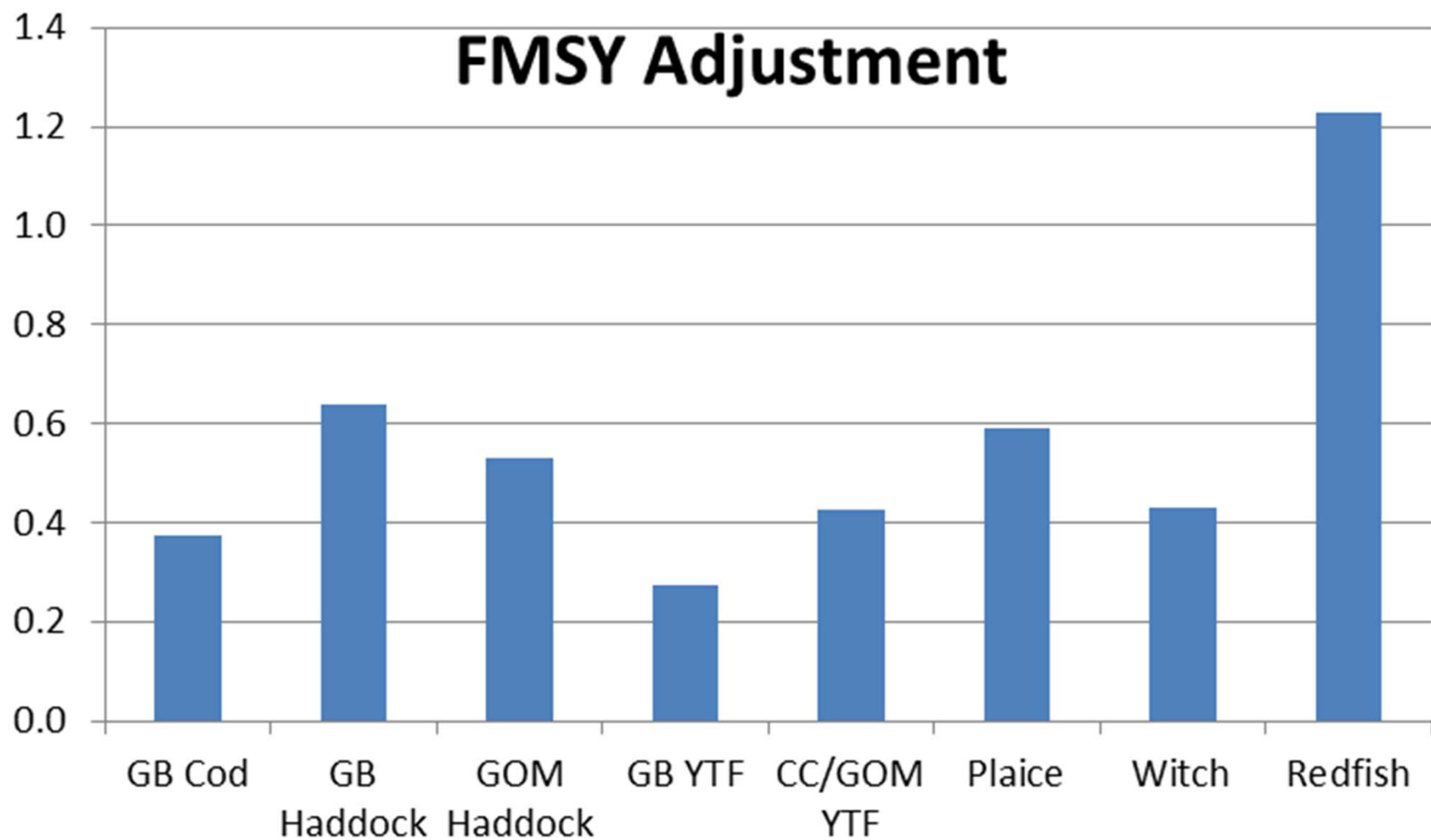
# How Far Off Were the OFLs/ABCs?

- American Plaice: in 2010, catching 57 percent of the ABC resulted in ~75 pct of FMSY
- PDT examined other stocks in report
- OFL/ABC should have been set well below median projection output (exception: redfish)



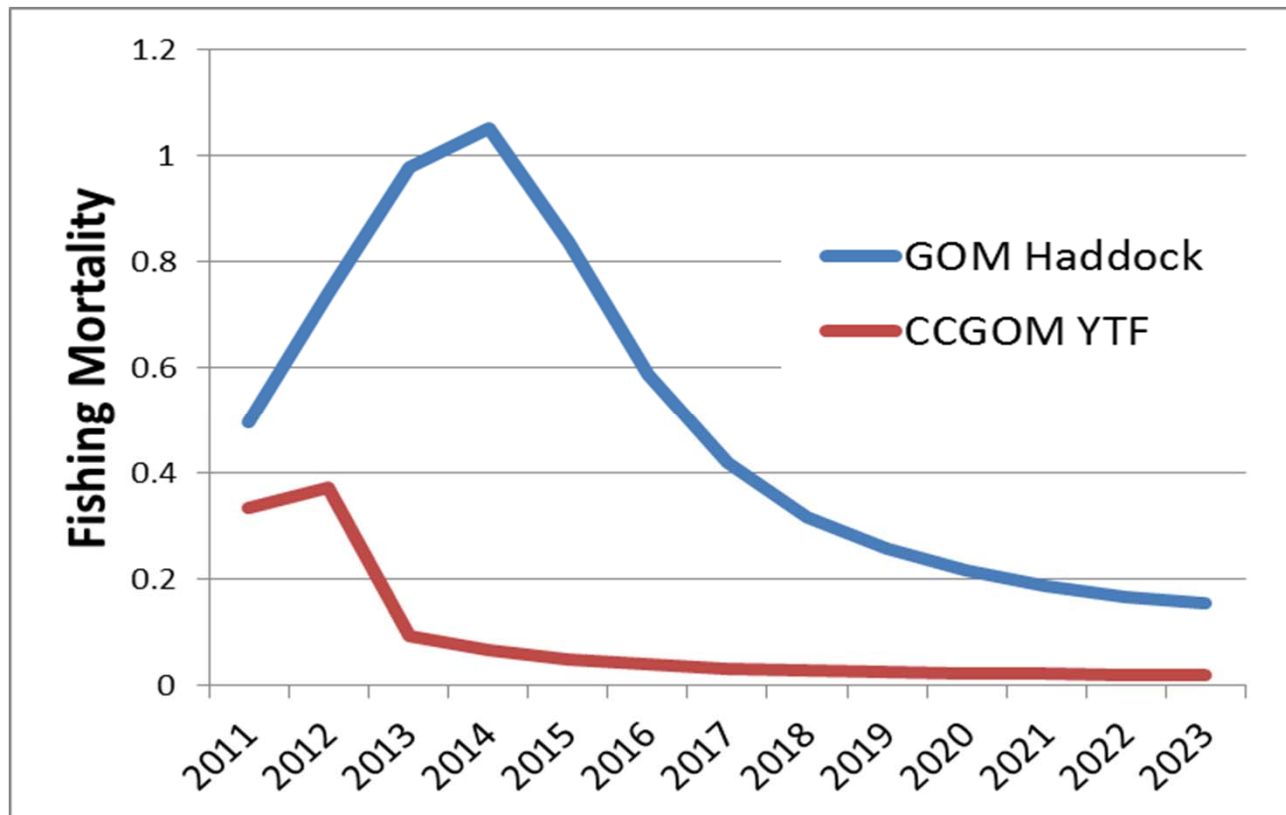
- $F_{\text{term}}/F_{\text{reference}}$ : how far off the realized  $F$  was from the projection input  $F$  at the realized catch
- $\text{Catch}/(F_{\text{term}}/F_{\text{reference}})$ : approximate what the catch should have been to get the  $F_{\text{reference}}$
- $\text{Catch}(\text{should have been})/\text{Catch}(\text{target})$ : An adjustment to get the right catch

## FMSY Adjustment



# Best Stock Size Estimate

- Does not account for expected changes in stock size



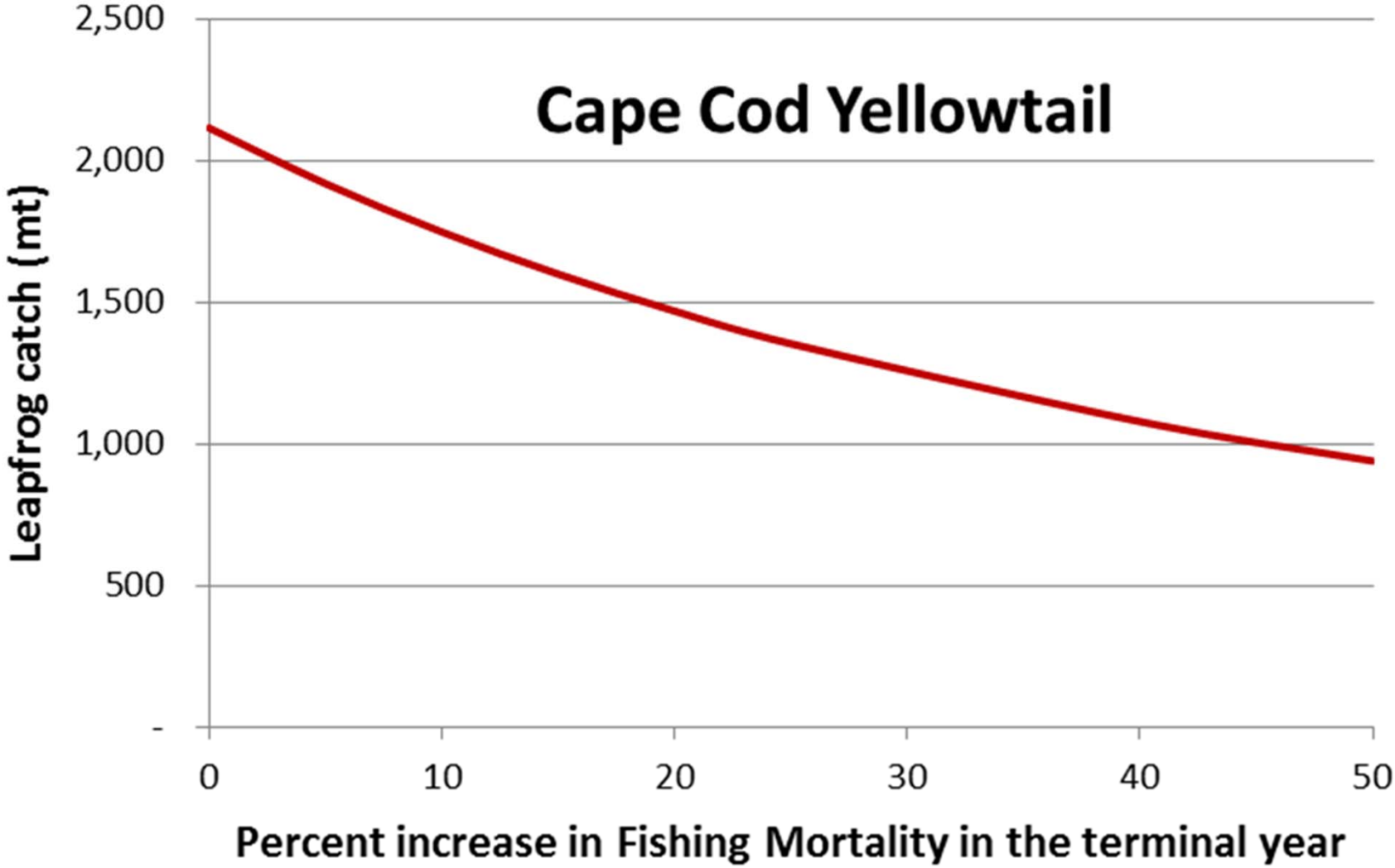
# Leapfrog TACs (Pope 1983)

- Approximation of a projection model.
- TAC estimate in year  $T+1$  at the status quo  $F$ .

## Data Inputs

- 2 years of catch at age
- Weight at age data.
- Recruitment in year  $t$  and  $t+1$ .
- 2 years of effort data ( $F$  as a proxy for effort).

# Cape Cod Yellowtail



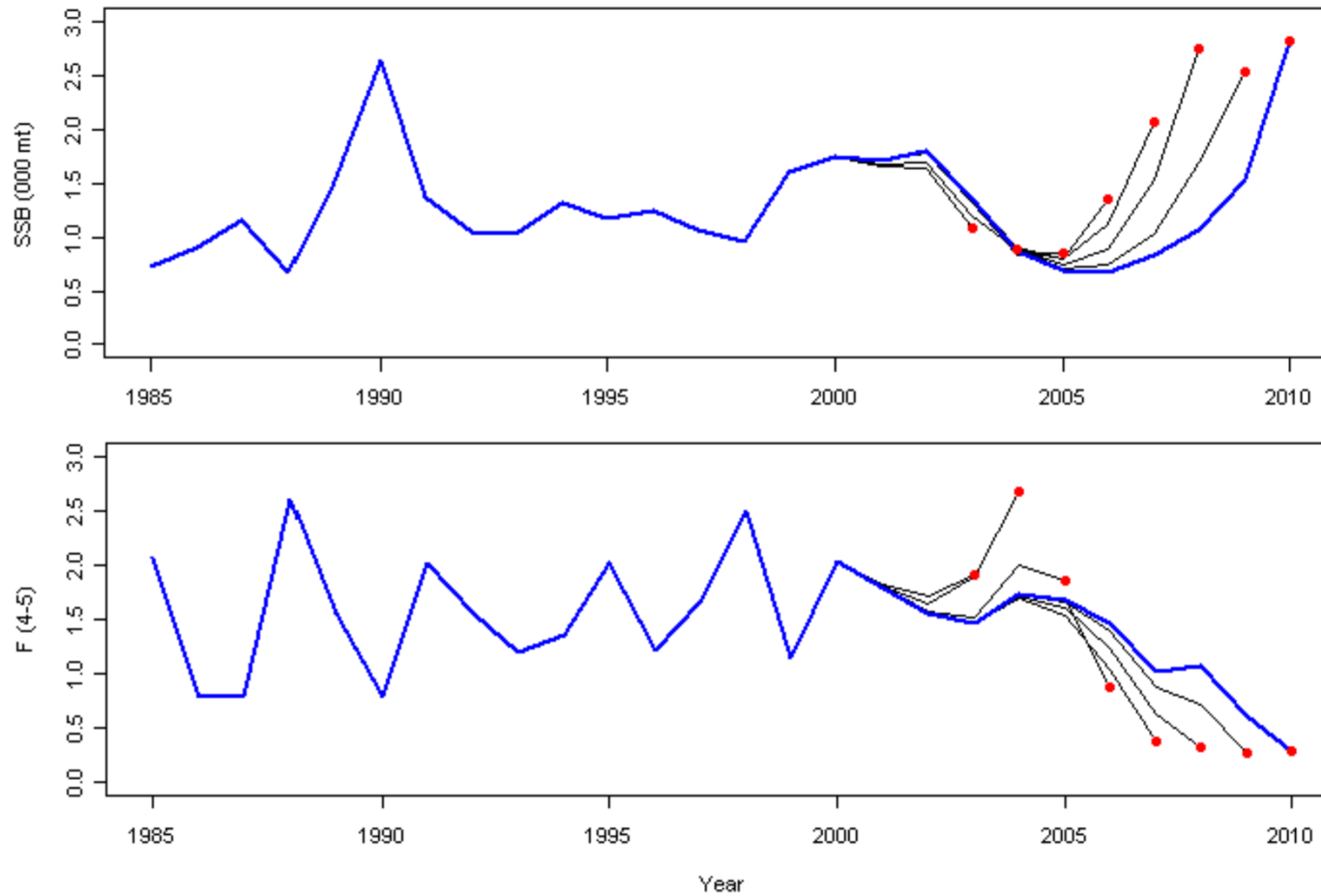
# Summary

- Time series analysis not completed
- No recommendation which approach would work best
- In most cases the standard projections have not worked well and the median catch from those projections would not be expected to achieve mortality targets

# CC/GOM Yellowtail Flounder

- VPA
- Two inshore survey strata dropped
- Residuals show patterning with blocks
- Mohn's rho values: SSB 0.68, F -0.19, R 0.34
- Retro adjusted (not necessary at GARM III)
- Updated reference points:
  - FMSY proxy: **0.26** (*0.239*)
  - SSBMY proxy: **7,080**mt (*7,790 mt*)
  - MSY : **1,600** mt (*1,720 mt*)

# CC/GOM YTF Results



- Overfished, SSB 1,680 mt
- Overfishing,  $F=0.36$



# CC/GOM YTF Projections

- No unusual conditions/assumptions
- NAA rho-adjusted
- Frebuild above F75%; latter used for catch projections
- **Decision made to use projected F Y2013 ABC for FY 2013-2015**
- OFL question: update or constant?

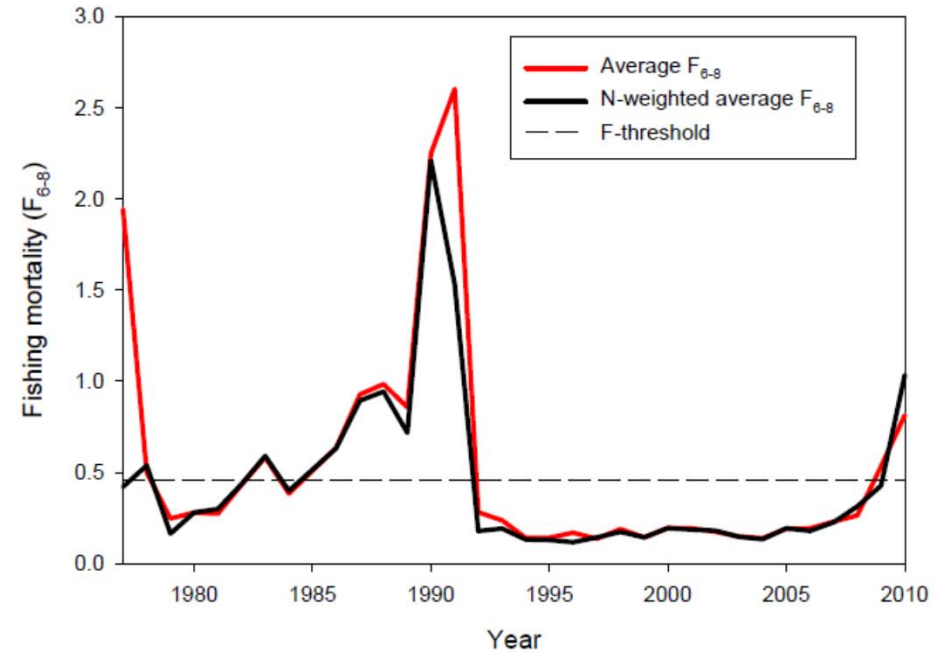
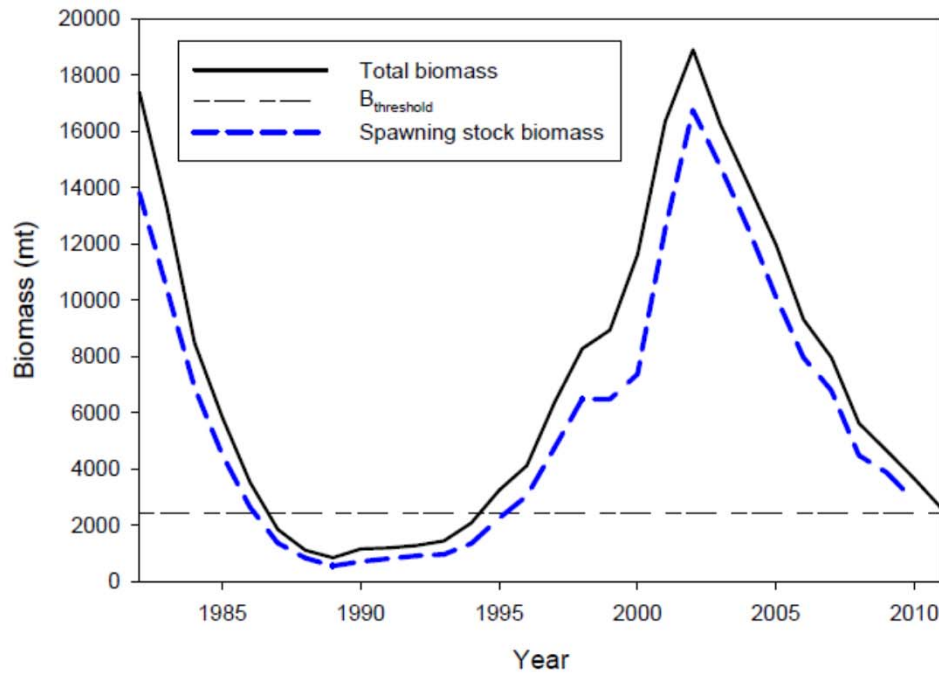
# CC/GOM YTF Projection Output

	OFL	Total ABC	U.S. ABC	Total CY Catch
<b>2011</b>	<b>2011</b>	1,355	1,041	1,032.8*
<b>2012</b>	2012	1,508	1,159	
<b>2013</b>	<b>2013</b>	713	548	
<b>2014</b>	<b>2014</b>	934	717	
<b>2015</b>	<b>2014</b>	1,153	887	

# GOM Haddock

- VPA
- Minor change to survey +group in VPA
- No residual patterning
- F based on unweighted average (change)
- Mohn's rho values: SSB -0.218, F 0.95, R 4.62
- Updated reference points:
  - FMSY proxy: **0.46** (*0.43*)
  - SSBMY proxy: **4,904** mt (*5,900 mt*)
  - MSY : **1,177** mt (*1,360 mt*)

# GOM Haddock Results



- Approaching Overfished, SSB 2,868 mt
- Overfishing,  $F=0.82$

# GOM Haddock Projections

- No unusual conditions/assumptions
- F75%

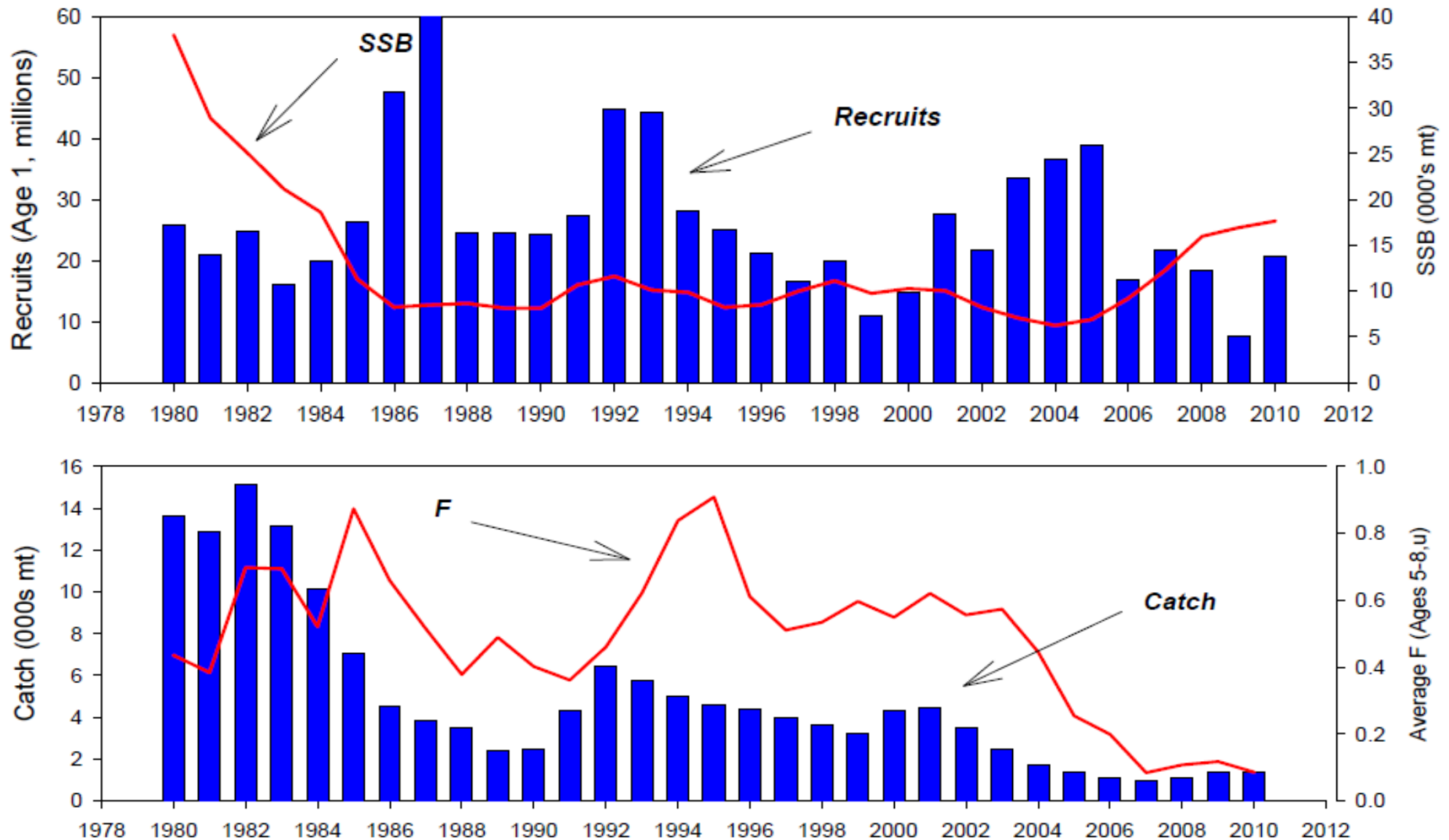
# GOM Haddock Projection Output

	OFL	Total ABC	Total CY Catch
<b>2011</b>	1,536	1,206	695.6
<b>2012</b>	1,296	1,013	
<b>2013</b>	371	290	
<b>2014</b>	440	341	
<b>2015</b>	561	435	

# American Plaice

- VPA
- Residual patterning (- early/+ late)
- Mohn's rho values: SSB 0.62, F -0.35, R 1.24
- Updated reference points:
  - FMSY proxy: **0.18** (*0.19*)
  - SSBMY proxy: 18,398 mt (*22,243 mt*)
  - MSY : **3,385** mt (*4,059 mt*)

# Plaice Results



- Not Overfished, SSB 10,805 mt (rho adjusted)
- No Overfishing,  $F=0.13$  (rho adjusted)



# Plaice Projections

- No unusual conditions/assumptions
- Retro adjusted NAA
- F75%

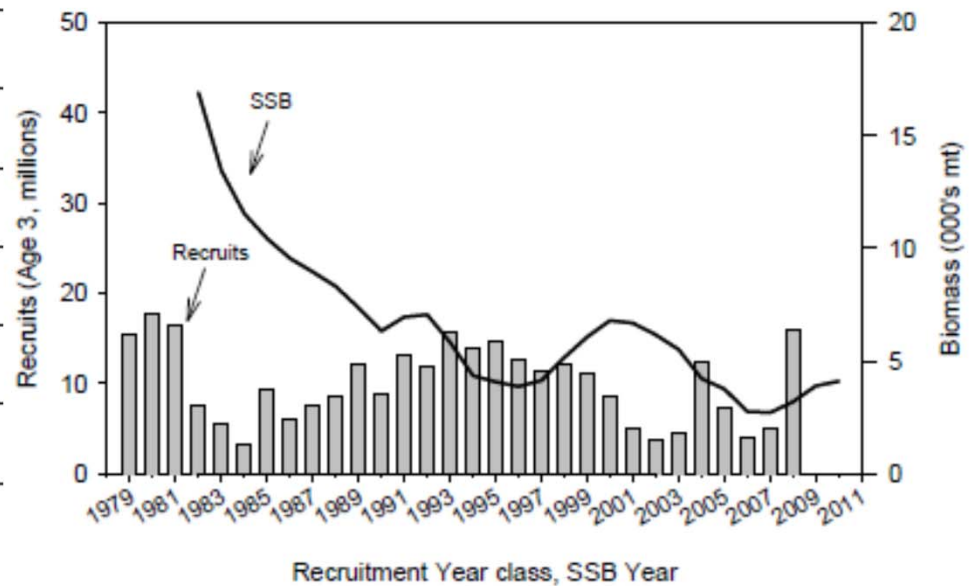
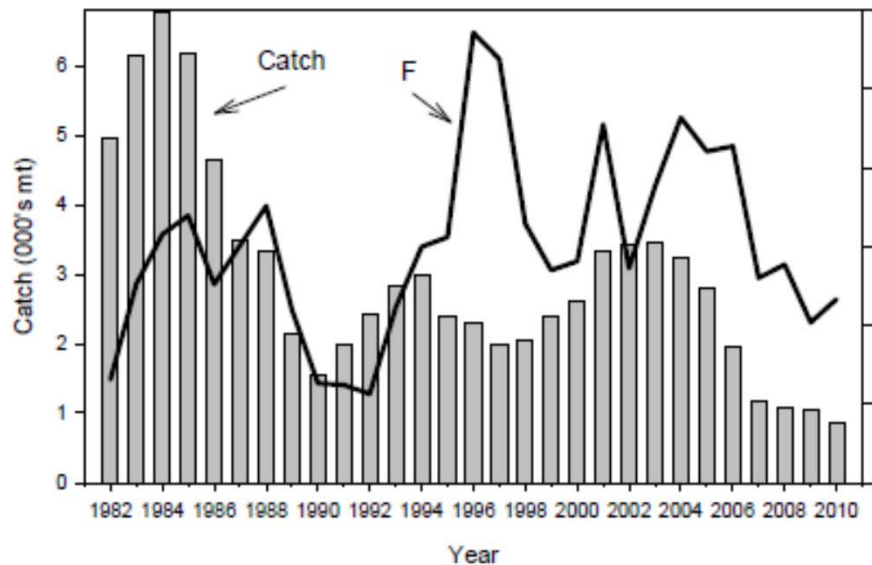
# Plaice Projection Output

	OFL	Total ABC	Total CY Catch
<b>2011</b>	4,483	3,444	1,893.1*
<b>2012</b>	4,727	3,444	
<b>2013</b>	2,035	1,557	
<b>2014</b>	1,981	1,515	
<b>2015</b>	2,021	1,544	

# Witch Flounder

- VPA, split survey
- Residual blocks for ages 7 and 10
- Mohn's rho values: SSB 0.61, F -0.33, R 0.06
- Updated reference points:
  - FMSY proxy: **0.27** (*0.20*)
  - SSBMY proxy: 10,051 mt (*11,447 mt*)
  - MSY : **2,075** mt (*2,352 mt*)

# Witch Flounder Results



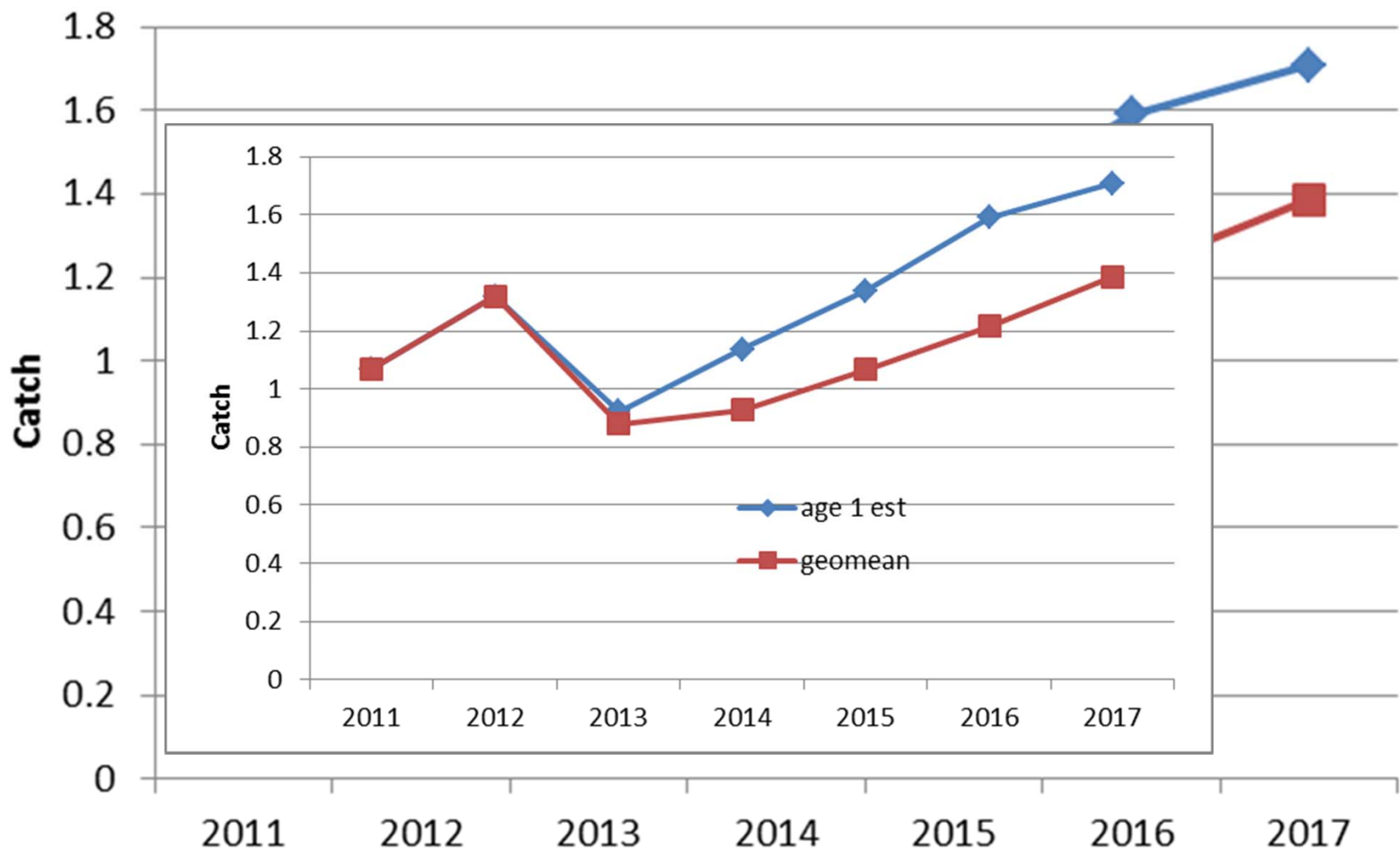
- Overfished, SSB 4,099 mt
- Overfishing,  $F=0.47$

# Witch Flounder Projections

- No unusual conditions/assumptions
- As a sensitivity run, geometric mean recruitment results in lower Frebuild and catch advice;
- Frebuild

# Witch Flounder Projection Output

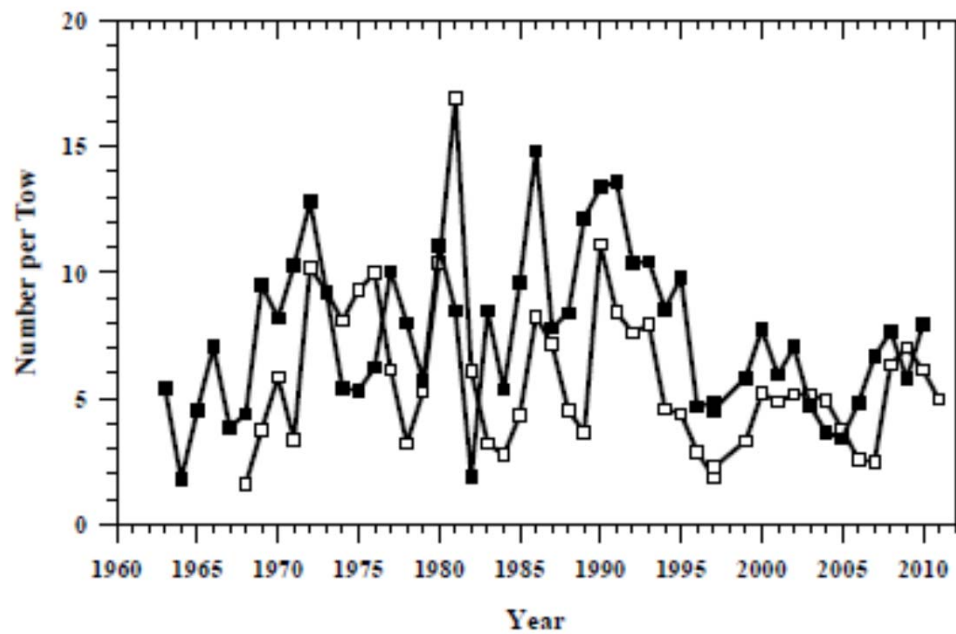
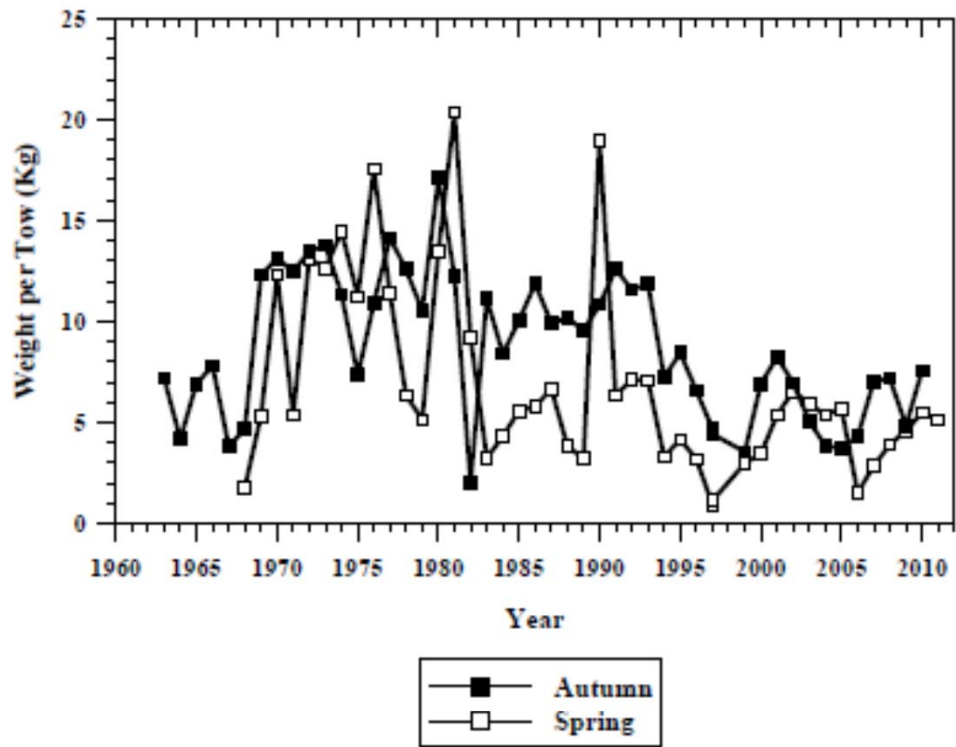
	OFL	Total ABC	Total CY Catch
<b>2011</b>	1,792	1,369	1,069.0
<b>2012</b>	2,141	1,639	
<b>2013</b>	1,196	783	
<b>2014</b>	1,506	984	
<b>2015</b>	1,800	1,176	



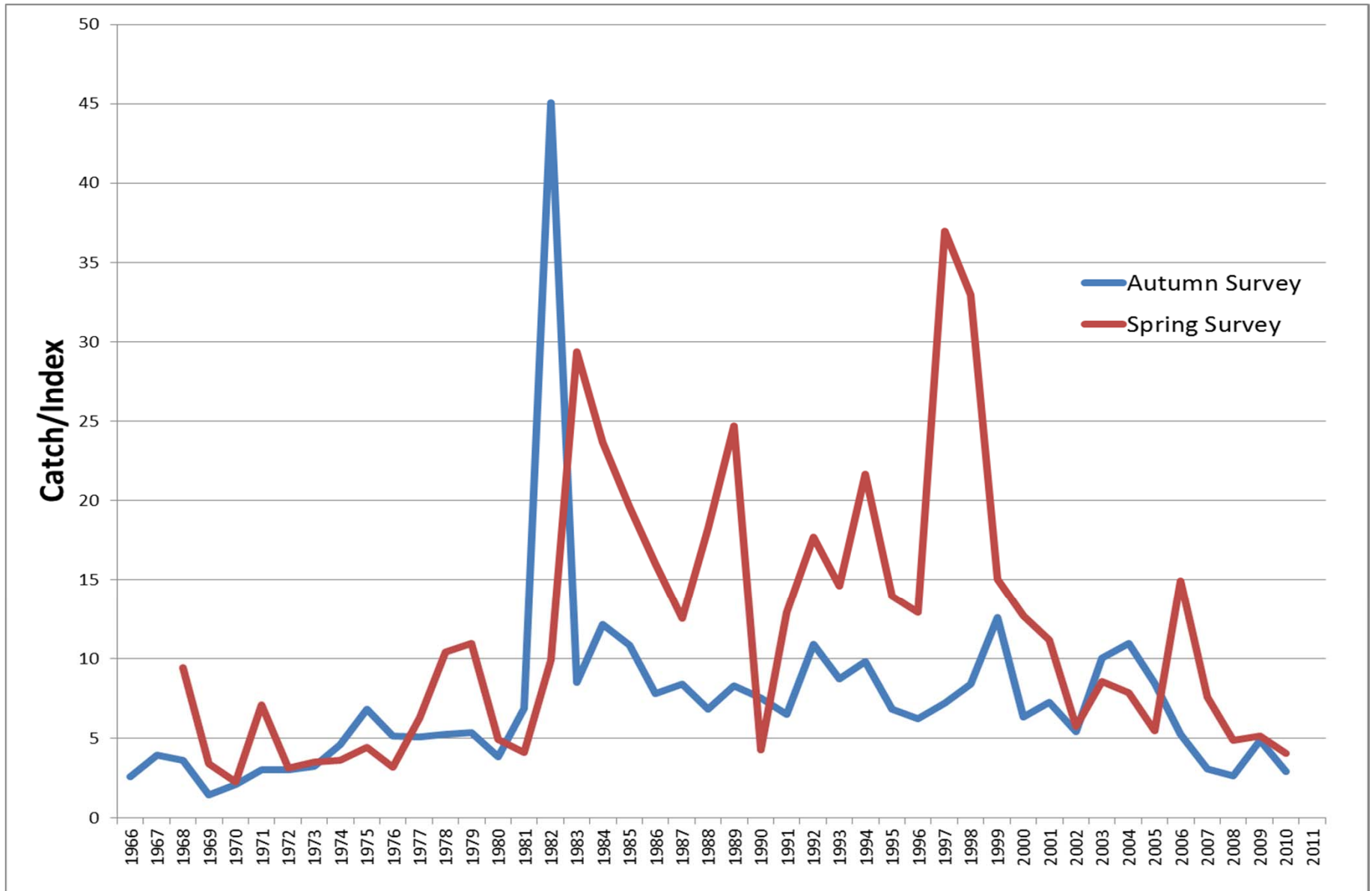
# White Hake

- SCAA
- No updated assessment
- Rebuilding program
- Benchmark planned for February 2013 ,may lead to adjusted ABC in 2013
- Recommend keep OFL/ABC at 2012 values until assessment completed





# White Hake Catch/Index



# White Hake

	OFL	Total ABC	Total CY Catch
<b>2010</b>	4,130	2,832	2057
<b>2011</b>	4,805	3,295	2,903.1*
<b>2012</b>	5,306	3,638	
<b>2013</b>	5,306	3,638	