

# Pollock ABCs

New England Fishery Management  
Council

Science and Statistical Committee

August 24 – 26, 2010

# Current ABCs

	Year	OFL (mt)	ABC (mt)
Pollock	2010	5,085	3,293
	2011	5,085	3,293
	2012	5,085	3,293

- 2010 ABC revised by NERO due to SAW 50 results:
  - OFL 25,200 mt
  - ABC 19,800 mt

# OFL/ABC Projections

- Partial recruitment, survey and fishery weights at age: most recent five year average
- Recruits sampled from empirical recruitment through 1970 - 2007
- 2010 catch assumed equal ABC

# ABC Control Rule

- “ABC should be determined as the catch associated with 75% of FMSY unless a more explicit determination of uncertainty can be made.”
- PDT provides
  - Catches at 75% of FMSY
  - Catches with 10 percent and 40 percent risk of overfishing
  - Catches at FMSY (for OFL)

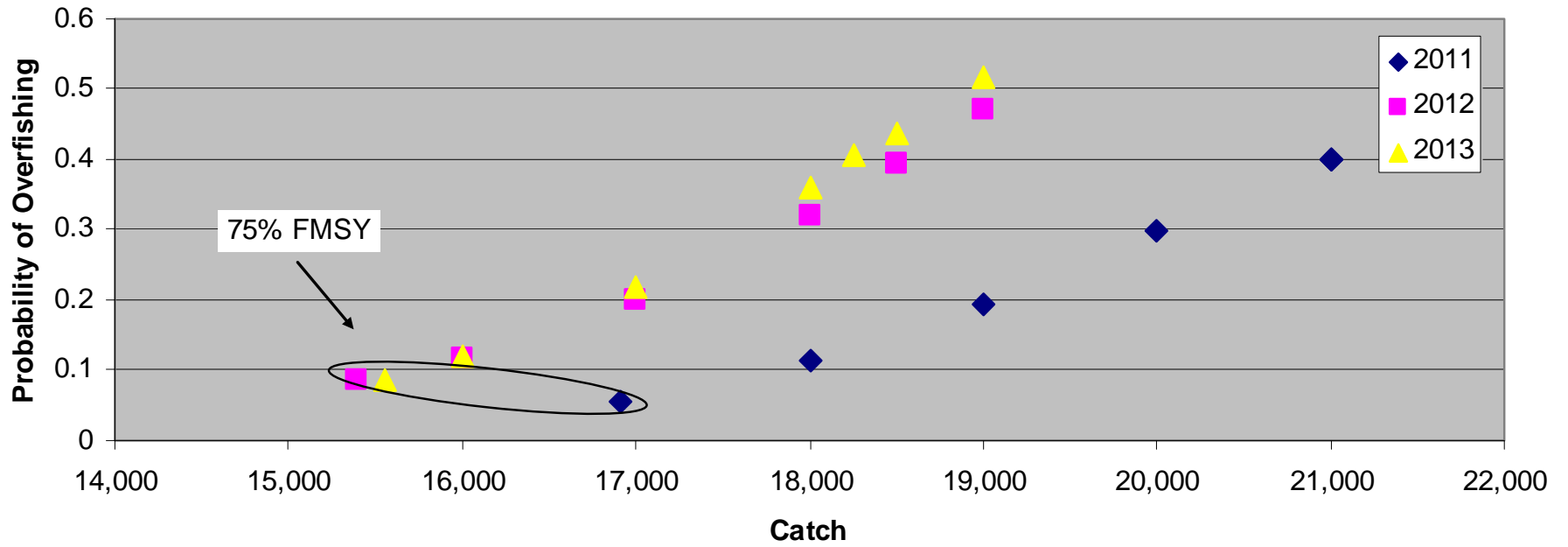
# 75% of FMSY Results

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<b>Year</b>	<b>OFL</b>	<b>ABC</b>	<b>Probability of Overfishing at Catch=ABC</b>	<b>Probability of Stock Exceeding SSB<sub>MSY</sub></b>	<b>SSB<sub>MSY</sub> (medi an)</b>
2011	21.853	16.914	0.054	1	168.366
2012	19.887	15.393	0.073	0.999	151.337
2013	20.060	15.554	0.087	0.991	139.977
2014	20.554	15.970	0.097	0.978	132.814

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# Pollock



# Two Risk Scenarios

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## Scenario 1 – Approximately 10 percent Probability of Overfishing

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Year	OFL	ABC	Median Fishing Mortality at ABC	Probability of Overfishing at ABC
2011	21.853	17.600	0.324	0.094
2012	19.780	15.750	0.320	0.098
2013	19.907	15.750	0.317	0.109
2014	20.388	15.750	0.308	0.094
2015	20.822	16.000	0.306	0.092

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## Scenario 2 – Approximately 40 percent Probability of Overfishing

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2011	21.853	21.000	0.392	0.401
2012	19.252	18.500	0.392	0.395
2013	18.973	18.250	0.393	0.407
2014	19.130	18.100	0.385	0.397
2015	19.279	18.250	0.385	0.395

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*“The projections of stock biomass are appropriate if the survey and fishery selectivity assumptions are true...The Panel recommends that it would be useful when making stock projections to more explicitly formulate the consequences to the pollock stock of different model assumptions in a decision table similar to that employed in risk assessment.”*



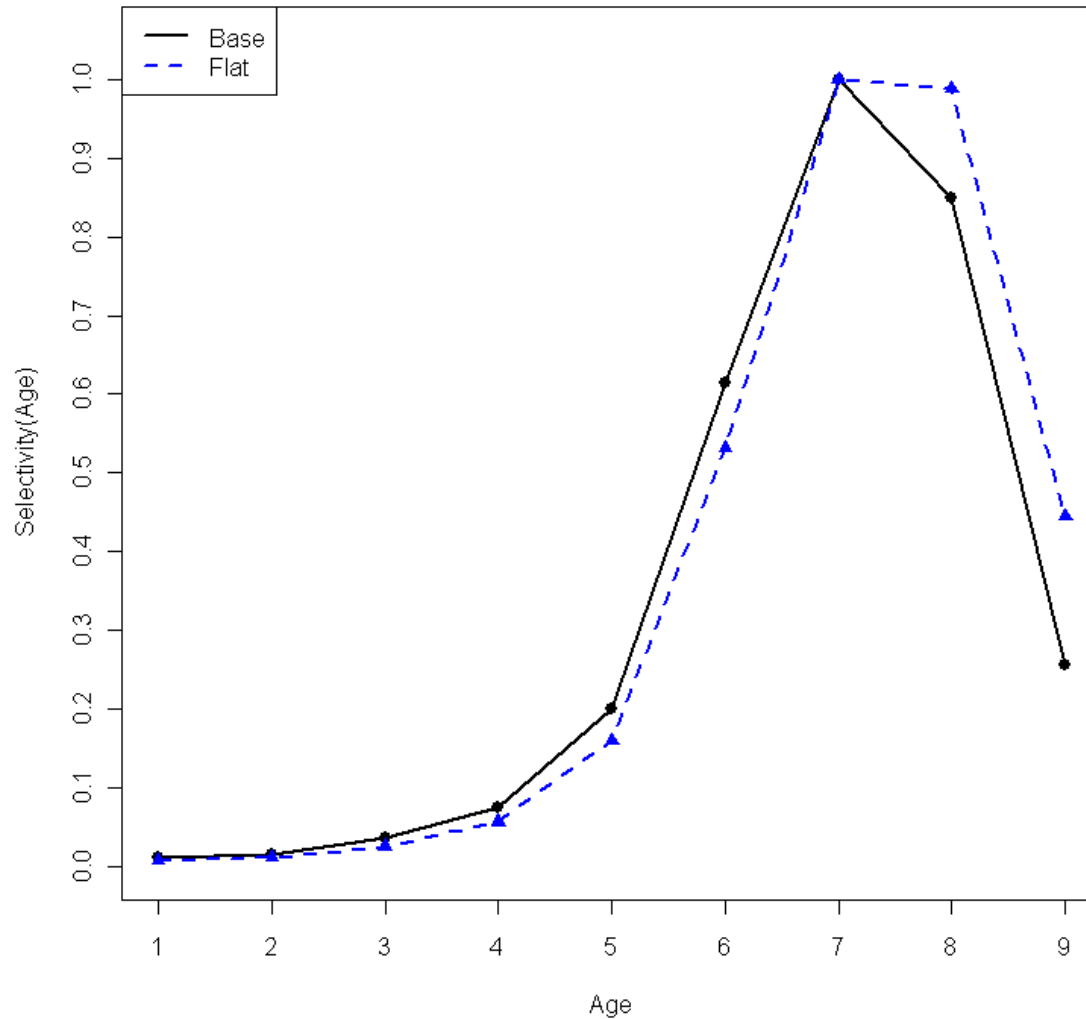
# Exploring the Consequences

- Assume a catch stream but evaluate against a flat-topped survey assessment. This changes recruitment stream and partial recruitment pattern in the fishery.
- Input catch streams from four scenarios:
  - 75 percent of FMSY (dome)
  - Scenario 1: 10 percent risk of overfishing (dome)
  - Scenario 2: 40 percent risk of overfishing (dome)
  - Scenario 3: Catch at FMSY from flat-topped assessment
- Assume undetected through year 5

# Recruitment

Model	Min	25th	50th	Mean	75th	Max
base	7244	13750	20060	21360	24520	57510
flat	3718	8412	11760	13840	18760	40420

# Partial Recruitment



# Results

Catch Scenario	Dome True/Flat False	Dome False/Flat True
Risk of Being Overfished By 2015		
75% $F_{MSY}$	Low	Low/Med
Scenario 1	Low	Low/Med
Scenario 2	Low	Med/High
Scenario 3	Low	Low
Risk of Overfishing By 2015		
75% $F_{MSY}$	Low	High
Scenario 1	Low	High
Scenario 2	Low	High
Scenario 3	Low	High

# Summary

- The risk that the stock will be overfished by 2015 is low to medium under most scenarios.
- If the flat-topped formulation proves more accurate, overfishing is likely to occur through 2015 under any of the catch streams presented.