

**Atlantic Herring Fishery**  
**Specifications 2013-2015:**  
**SSC and Herring Committee**  
**Recommendations**

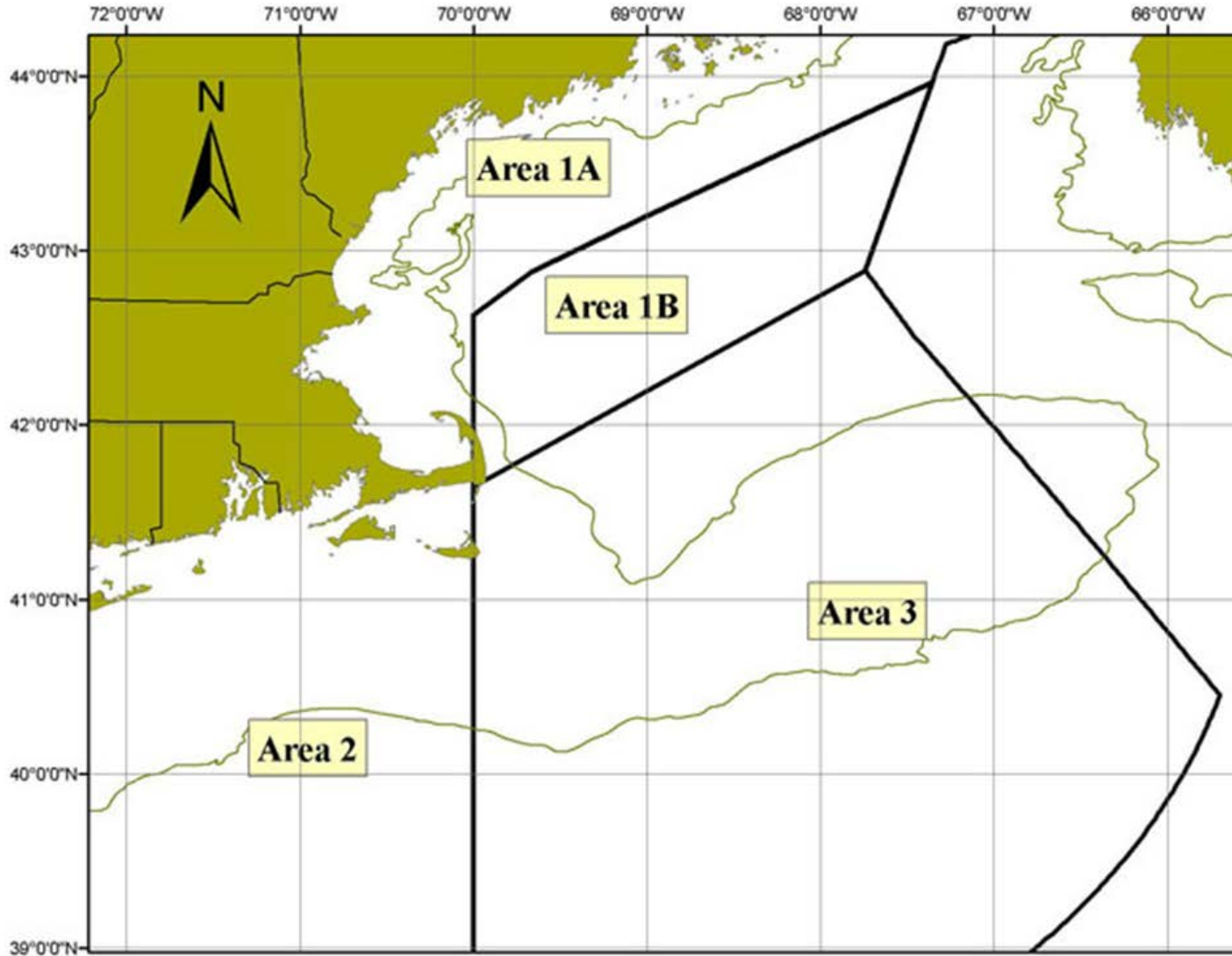
**Lori Steele, NEFMC Staff, Herring PDT Chair**

**NEFMC Meeting, September 25-27, 2012**

# Atlantic Herring Stock Complex

- Assessed and managed as one stock complex
- Comprised of multiple stock components (inshore and offshore) that mix seasonally
  - \*Inshore stock component also caught in Canadian (NB weir) fishery\*
- One annual catch limit (ACL) with sub-ACLs assigned to four management areas
  - Area 1 = Gulf of Maine, divided into inshore (Area 1A) and offshore (Area 1B);
  - Area 2 = southern New England/Mid-Atlantic;
  - Area 3 = offshore (Georges Bank)

# Atlantic Herring Management Areas



# Herring Fishery Specifications

SPECIFICATION	2010-2012 ALLOCATION (MT)	2013-2015 ALLOCATION (MT)
OFL*	145,000 134,000 127,000	$F_{MSY}$ -Based
ABC	106,000	OFL- Scientific Uncertainty
U.S. OY/ACL	91,200	ABC – Management Uncertainty
DAH	91,200	TBD
DAP	87,200	TBD
BT	4,000	TBD
Sub-ACL Area 1A	26,546	TBD
Sub-ACL Area 1B	4,362	TBD
Sub-ACL Area 2	22,146	TBD
Sub-ACL Area 3	38,146	TBD
Research Set-Aside	0	TBD
Fixed Gear Set-Aside (1A)	295	TBD

# SAW/SARC 54 (Benchmark June 2012)

	TRAC 2009	SAW/SARC 54
$F_{MSY}$	0.27	0.27
$B_{MSY}$	670,000 mt (1/2 $SSB_{MSY} = 335,300$ mt)	157,000 mt (1/2 $SSB_{MSY} = 78,500$ mt)
MSY	178,000 mt	53,000 mt

- 2011 SSB = 517,930 mt  
(not overfished; “rebuilt”)
- 2011 F = 0.14 (not overfishing)

# Overfishing Limit (OFL)

- $OFL \geq ABC \geq ACL$
- $OFL = F_{\text{Threshold}} * B$
- $F_{\text{Threshold}} = F_{\text{MSY}}$   
(when stock is not overfished or overfishing is not occurring)
- Projections are provided by SAW 54 and Herring PDT to estimate OFL based on  $F_{\text{MSY}}$  for 2013-2015

# Acceptable Biological Catch (ABC)

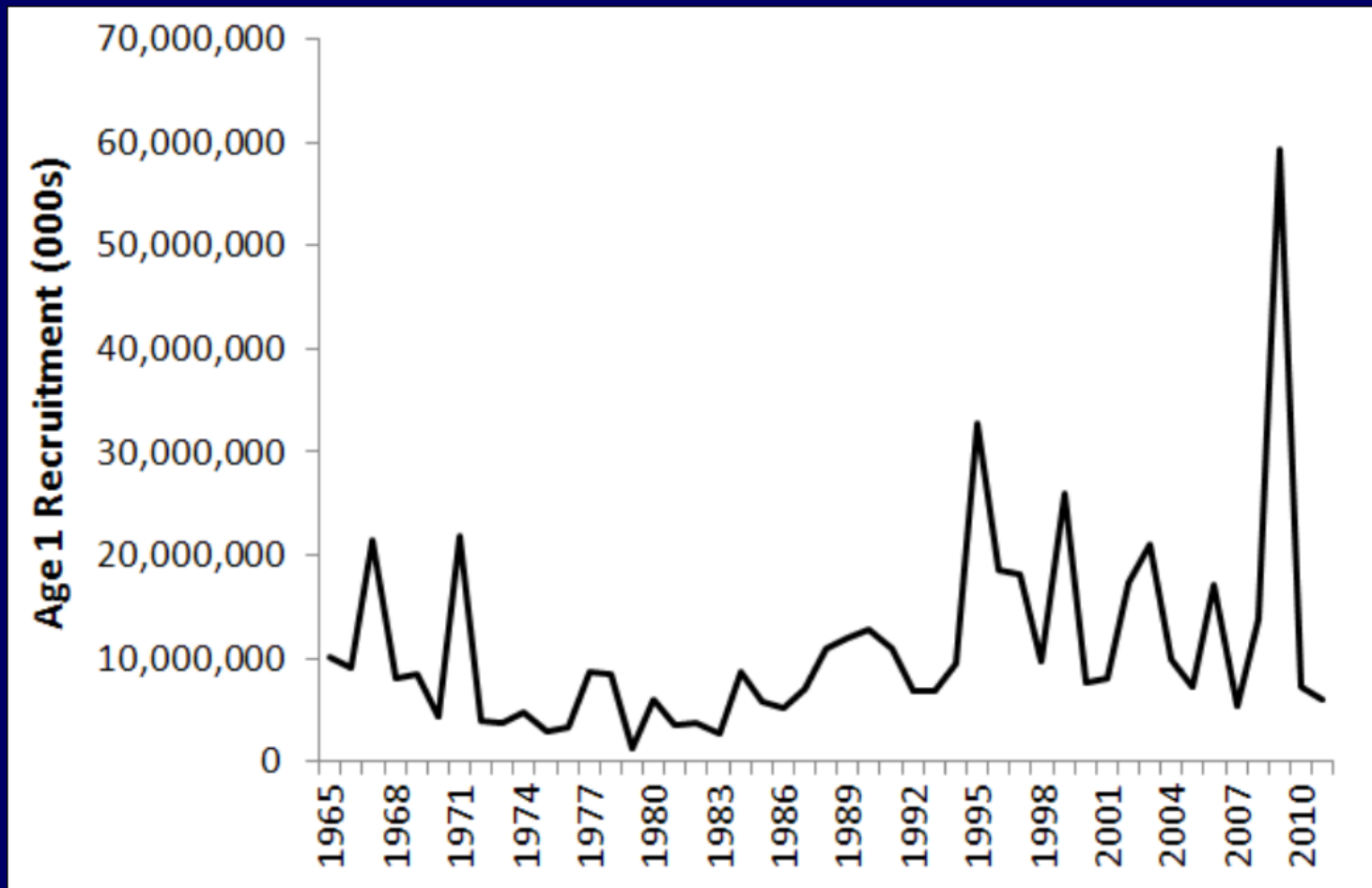
OFL – Scientific Uncertainty = ABC  
(recommended by SSC)

Herring PDT Discussion Document:  
Three Sources of Scientific Uncertainty

1. 2008 Herring Year Class
2. Natural Mortality (M) Assumptions
3. Biological Reference Points (BRPs) and Other Uncertainty

# 2008 Year Class

- Largest on record
- 59.4 billion Age-1 in 2009 (Avg. 15.8B 1996-2011)
- Sensitivity runs for stock status and YC size





# Natural Mortality (M) Assumptions

- Age-time-varying M with 50% increase starting in 1996 – address retrospective pattern and ensure that implied levels of consumption consistent with other data

Herring PDT – M and consumption of herring by predators has been addressed in SAW 54 assessment to the extent possible; appropriate approach given role of herring as forage and consistent with other data re. consumption/predation; M evaluated in SAW 54 more thoroughly than other species

# BRPs and Other Uncertainty

- Significant changes to MSY reference points since last assessment:
  1. Estimate of steepness in S-R relationship
  2. 50% increase in M 1996-2011

*\*Sensitivity runs indicate that stock status is robust to this uncertainty\**
- “Qualitative uncertainty” re. exclusion of acoustic survey and herring stock structure/stock mixing

# ABC/ABC Control Rule

**ABC Control Rule** – specified approach to setting ABC for stock as a function of scientific uncertainty

- Specified and modified by SSC during fishery specifications process
  - Interim Herring ABC Control Rule 2010-2012  
Herring ABC = Average Catch (2006-2008)
1. 75%  $F_{MSY}$  Approach
  2. Constant Catch Approach

# SSC Recommendations

September 12-13, 2012

- Reviewed Draft Discussion Document, discussed alts for specifying ABC, and supports both PDT approaches as alts for ABC/ABC control rule for 2013-2015
- Because of the current status of the herring resource, the two approaches are nearly equivalent from a biological perspective (both approaches expected to produce similar SSB values in 2015)

# 75% $F_{MSY}$ Approach

- ABC set each year as projected catch associated with 75%  $F_{MSY}$
- “Buffer” for scientific uncertainty distributed among all three years
- May result in more fishing on 2008 Year Class

YEAR	2013	2014	2015
OFL (mt)	169,000	127,000	104,000
F	0.2	0.2	0.2
SSB (mt)	523,243	409,309	354,559
ABC (mt)	130,000	102,000	88,000

# Constant Catch Approach

- ABC set each year as projected catch to result in 50% or less prob. of overfishing in 2015
- “Buffer” for scientific uncertainty larger in 2013
- May allow for better business planning/stability
- Higher prob. of overfishing in 2015 vs. 75%  $F_{MSY}$  (but not overfished under either approach)

YEAR	2013	2014	2015
OFL (mt)	169,000	136,000	114,000
F	0.17	0.22	0.27
SSB (mt)	533,289	411,951	338,957
ABC (mt)	114,000	114,000	114,000

# Management Uncertainty

**ABC– Management Uncertainty = ACL  
(stock-wide ACL = U.S. OY)**

Herring PDT Discussion Document:  
Considerations for Management  
Uncertainty

1. Canadian Catch
2. State Waters Catch
3. Herring Discards

# Canadian Catch (NB Weir)

- 14,800 mt deducted 2010-2012
- Additional 3,000 mt allocated to 1A if catch is less than 9,000 mt by October 15

Years – Average	NB Weir Catch (mt)
3-year average (2009-2011)	6,233
5-year average (2007-2011)	11,218
10-year average (2002-2011)	12,358

	5 years	10 years	20 years
Average	10,622	11,872	16,612
Median	6,004	11,181	17,317
75%	10,703	12,409	20,445



# State Waters Catch

- 2010 and 2011 State waters herring landings occurred in ME only
- Herring PDT reviewed State waters catch and agrees that no additional deduction for management uncertainty related to State waters catch is necessary at this time

Year	State	Live Pounds	Metric Tons
2010	ME	2,057,901	933.46
2011	ME	70,792	32.11

# Herring Discards

- Herring PDT agrees that uncertainty related to estimating herring discards is not likely to be a significant source of management uncertainty for the 2013-2015 specifications
- Increased observer coverage and enhanced observer sampling across the fishery have improved bycatch accounting and reduced uncertainty
- Amendment 5 management measures will continue to improve catch monitoring and the accuracy of herring discard estimates

# Other Specifications

- DAH/DAP/BT
  - $OY = DAH$
  - $DAP = DAH - BT$  (4,000 mt)
- Research Set-Asides (RSAs)
  - 0-3% per area can be specified; no RSAs allocated for 2010-2012
- Fixed Gear Set-Aside (FGSA)
  - Up to 500 mt in Area 1A for fixed gear fisheries west of Cutler
  - 295 mt set-aside for 2010-2012

# Herring Committee Meeting

September 20, 2012

- ABC/ABC Control Rule for 2013-2015 based on constant catch alt (ABC=114,000 mt)
- 6,200 mt for management uncertainty (3 yr. avg. NB weir fishery catch; OY=107,800 mt)
- PDT – develop sub-ACL options based on proportional increase across all areas and needs-based (1A, 1B, 2)
- PDT – analyze potential to move quota from Area 3 to Area 2 to address mackerel fishery

# Specifications/Priorities

- 2013-2015 specifications package should be stand-alone action, top priority, to be completed ASAP
  - Include ABC and AM alternatives to address court order
  - Develop river herring catch caps in separate action (framework adjustment)
- Two alternatives for accountability measures recommended by Committee at this time

# Herring Specifications Timeline

Action	Schedule
1. SAW/SARC 54	June 5-9, 2012
2. Herring PDT Meeting	August 14, 2012
3. SSC recommend ABC	September 12, 2012
4. Herring Committee Meeting	September 20, 2012
5. NEFMC Meeting (Initial)	September 25-27, 2012
6. NEFMC Meeting (Final)*	November 13-15, 2012 January 29-31, 2013