

Forage Fish Harvests

Ed Houde

STAC Forage Workshop

12-13 November 2014

Chesapeake Biological Laboratory

Solomons, MD



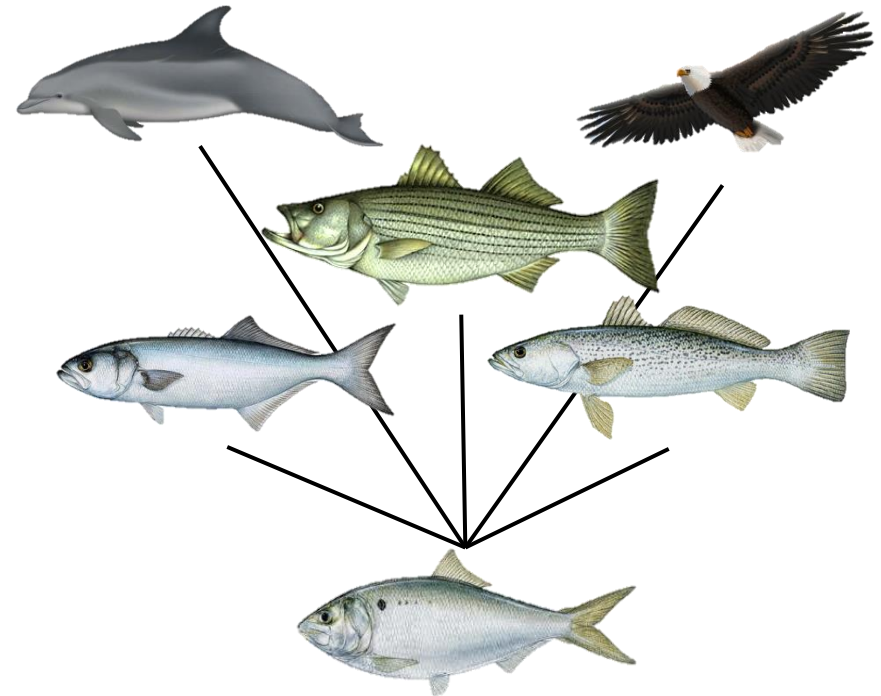
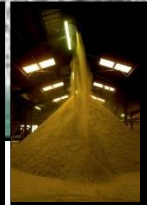
University of Maryland

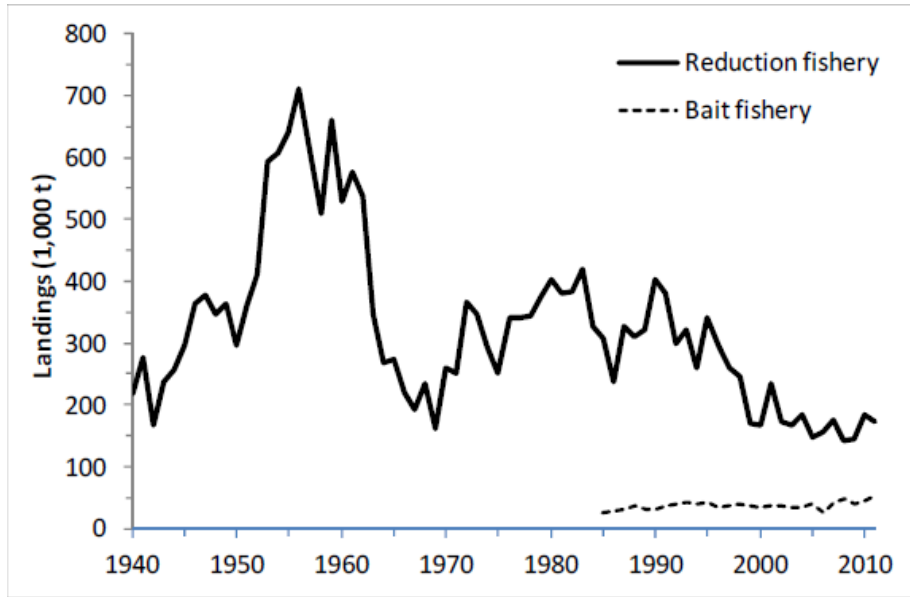
CENTER FOR ENVIRONMENTAL SCIENCE

CHESAPEAKE BIOLOGICAL LABORATORY

Atlantic menhaden

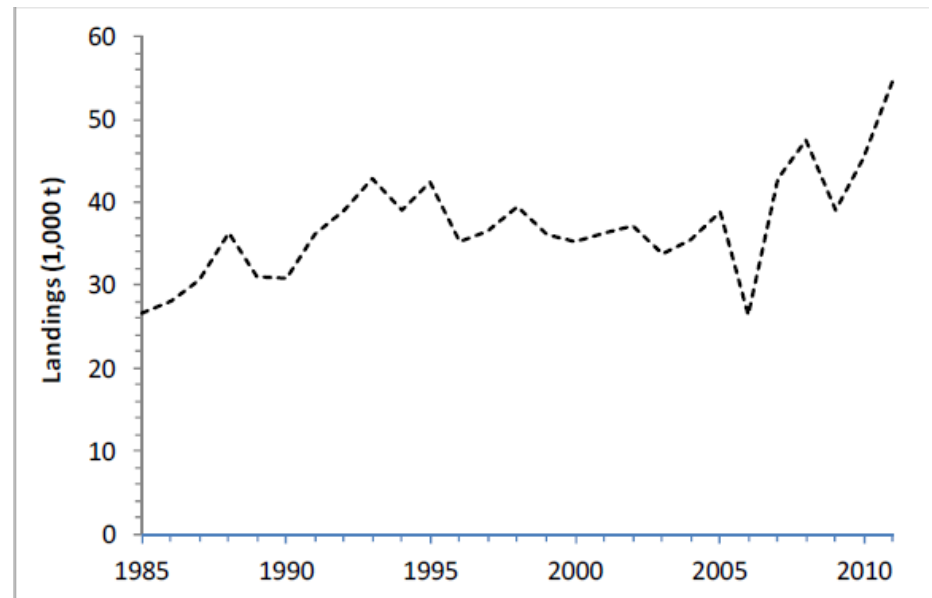
(*Brevoortia tyrannus*)



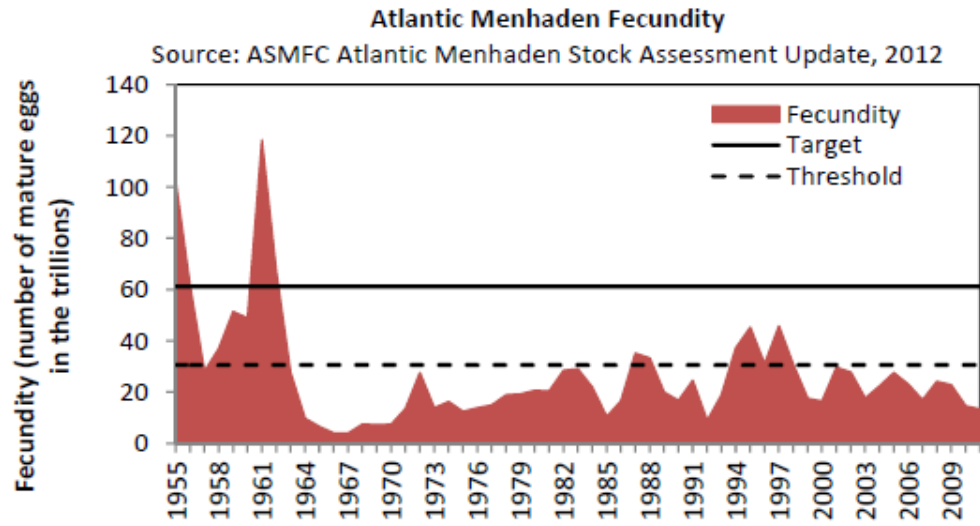


**Atlantic menhaden coastwide
purse-seine, reduction landings**

**Atlantic menhaden coastwide
bait landings**

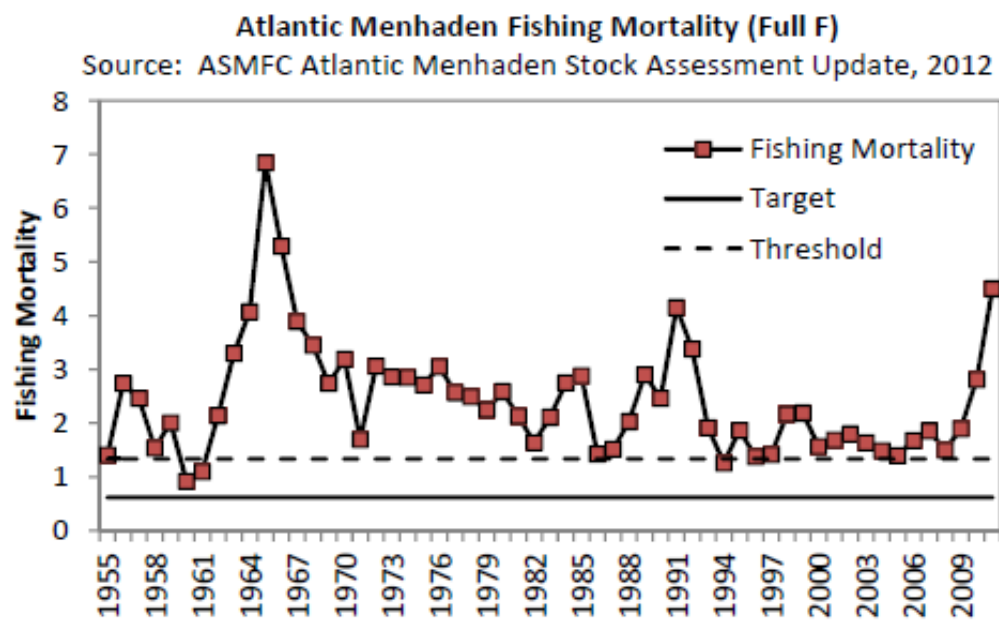


Atlantic Menhaden: Stock Fecundity and Fishing Mortality



The stock is experiencing overfishing.

It is uncertain if the stock is overfished



Coastwide landings are set at 177,800 tons in 2013

The reduction fishery capped at 87,216 tons in Chesapeake Bay in 2013

Mid Atlantic Forage Fishes

Common name	Species	Fished Y/N	Mean Annual Landings (mt) (2008-2012)	Management Authority	Bycatch Important Y/N
Atlantic herring	<i>Clupea harengus</i>	Y	82,422.4	NEFMC/ASMFC	Y
Atlantic menhaden	<i>Brevoortia tyrannus</i>	Y	210,776.0	ASMFC	N
Atlantic mackerel	<i>Scomber scombrus</i>	Y	12,003.2	MAFMC	Y
Butterfish	<i>Peprilus triacanthus</i>	Y	244.1	MAFMC	Y
Alewife	<i>Alosa pseudoharengus</i>	Y	605.2	ASMFC	Y
Blueback herring	<i>Alosa aestivalis</i>	Y	6.2	ASMFC	Y
Longfin squid	<i>Doryteuthis pealii</i>	Y	9,892.0	MAFMC	Y
Illex squid	<i>Illex illecebrosus</i>	Y	11,227.5	MAFMC	Y
Bay anchovy	<i>Anchoa mitchilli</i>	N			N
Striped anchovy	<i>Anchoa hepsetus</i>	N			N
Silver anchovy	<i>Engraulis eurystole</i>	N			N
Round herring	<i>Etrumeus teres</i>	N			N ?
Thread herring	<i>Opisthonema oglinum</i>	Y	0		Y, small
Spanish sardine	<i>Sardinella aurita</i>	Y	0		Y, small
Sand lance	<i>Ammodytes americanus</i> and <i>A. dubius</i>	N	0		N
Atlantic silverside	<i>Menidia menidia</i>	Y	6.4		N

Chesapeake Bay landings (metric tons). Selected species.

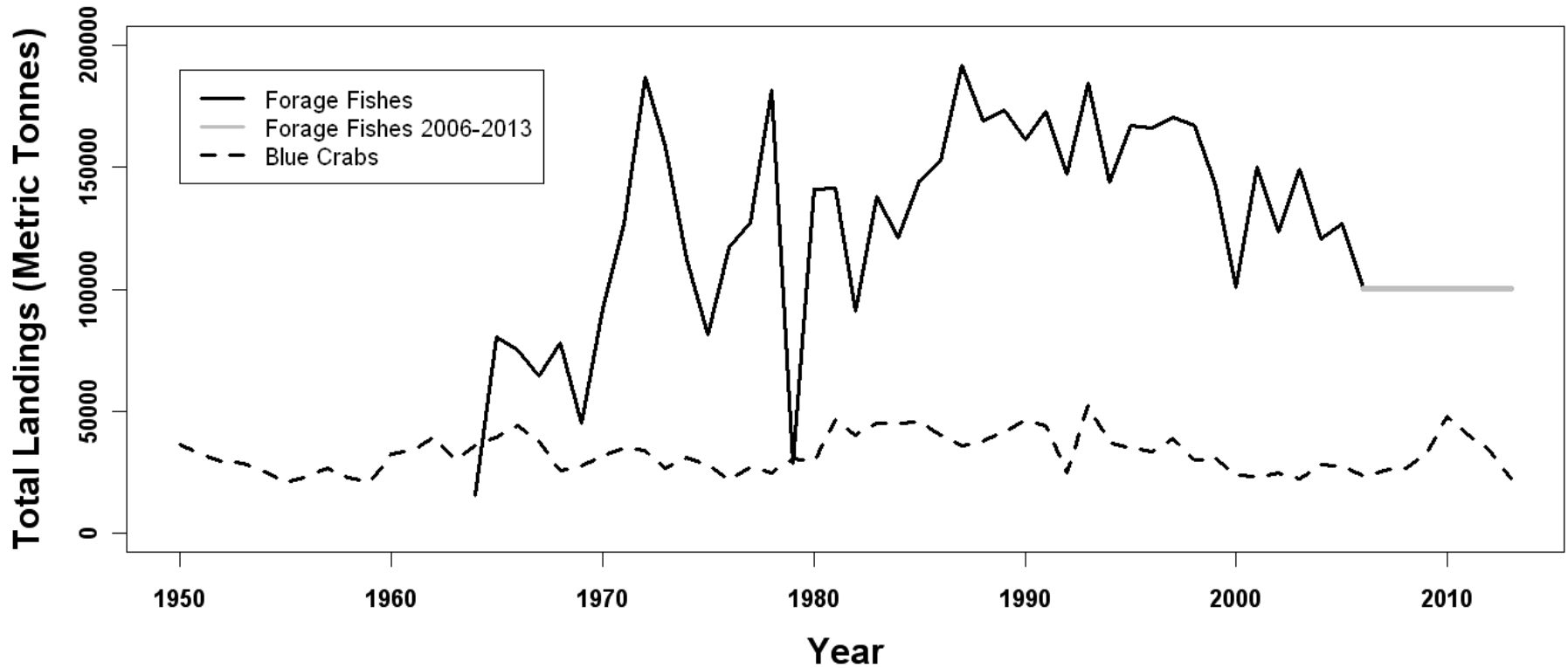
Trophic role	Species	50 year mean	10 year mean	5 year mean
Forage fish	Alewife	2,827	104	129
	American shad	522	6	3
	Atlantic menhaden	121,280	104,724	100,000*
	Blueback herring	-	2	3**
	Hickory shad	9	4	3
Forage/predator	Atlantic croaker	2,491	4,205	3,541
	Spot	1,218	1,330	1,200
	Weakfish	923	85	24
Predator	Black drum	41	31	32
	Blue catfish	-	405	728
	Bluefish	624	257	218
	Black Sea Bass	568	234	223
	Channel catfish***	-	-	456
	Cownose ray	-	-	25
	Sheepshead	-	3	3
	Smooth dogfish	-	217	269
	Spiny dogfish	-	1,070	1,060
	Striped bass	1,573	1,979	2,034
	Summer flounder	1,847	1,542	1,694
	White perch	588	619	787

*Approximate. Capped at 109,020 metric tons beginning 2006.

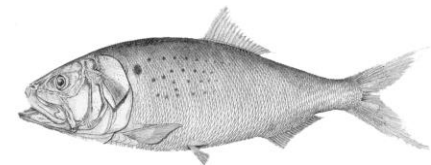
**2010-2012

***2009-2013

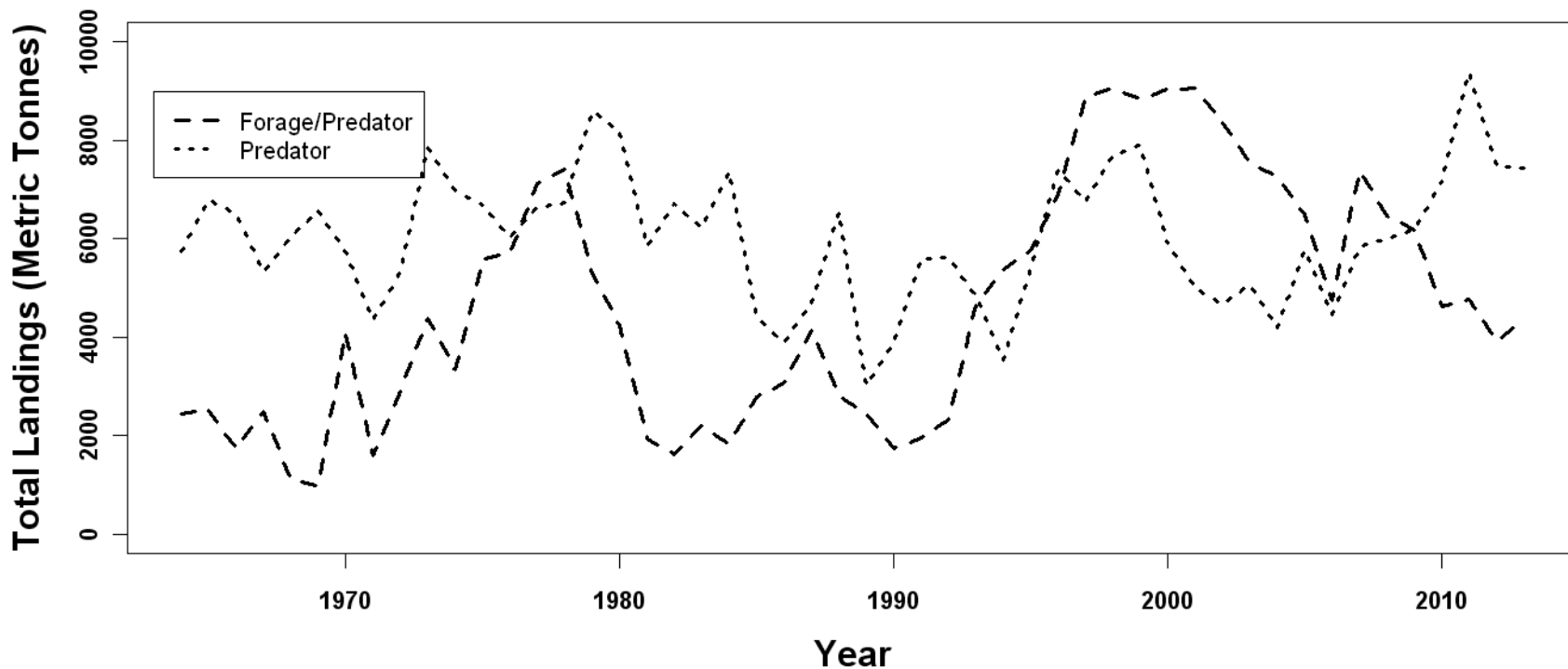
Commercial Fish Landings In Chesapeake Bay



- Forage Fishes = Menhaden, Spot, Croaker, Weakfish
- Menhaden fishery expands in the Bay after 1970
- Catches reach >180,000 tons in 1970s to 1990s
- Reduction fishery capped at 109,020 tons in 2006
- Forage Fishes landings approximate from 2006-2013
- Menhaden is >60% of Bay commercial landings
- Cap reduced to 87,216 tons in 2013
- “Localized Depletion” perceived as a major issue



Commercial Fish Landings Of Predator and Forage/Predator Fishes



Forage/Predator: Spot, Atlantic croaker, Weakfish

Predator: Twelve Species (see Table)

Chesapeake Bay: Proportion of Forage Fish in Total Commercial Landings

