

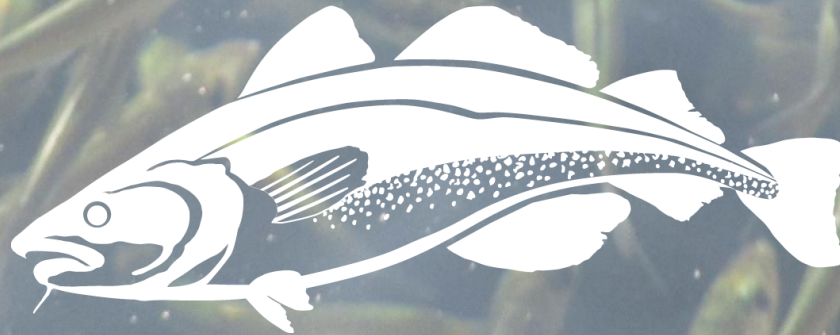
STATE-WIDE, REGIONAL AND COAST-WIDE STATUS OF RIVER HERRING POPULATIONS

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Diadromous Fisheries Biology, Management
and Restoration Project

Marine Fisheries

Commonwealth of Massachusetts



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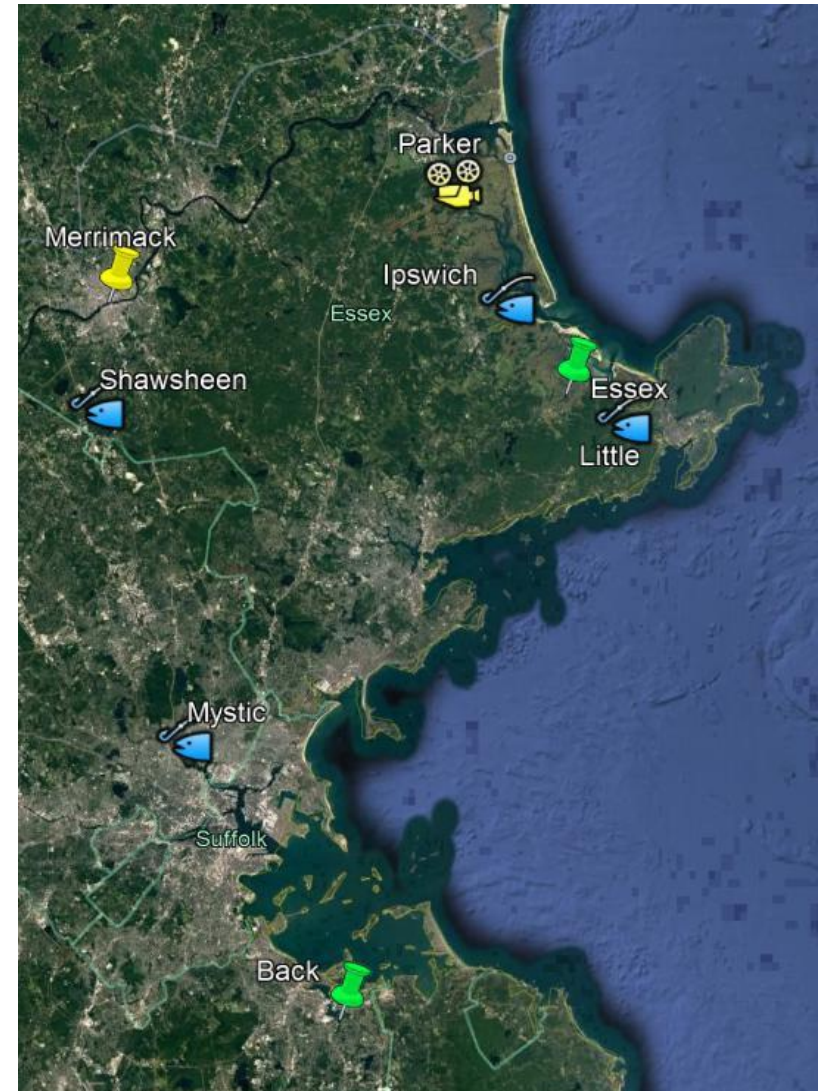
1-A. REGIONAL EFFORT AND COVERAGE (BOSTON HARBOR & NORTH COASTAL)

Eight streams monitored

Stream	Method	Pe	I/D
Merrimack	Lift	91,616	D
Shawsheen	Visual	1,523	N/A
Parker	Video	31,869	D
Essex	Electronic	38,808	D
Back	Electronic	203,242	D
Ipswich	Visual	563	D
Little	Visual	2,859	I
Mystic	Visual	630,098	I*

N/A - New monitoring station

* Time series high (largest run in 2017)

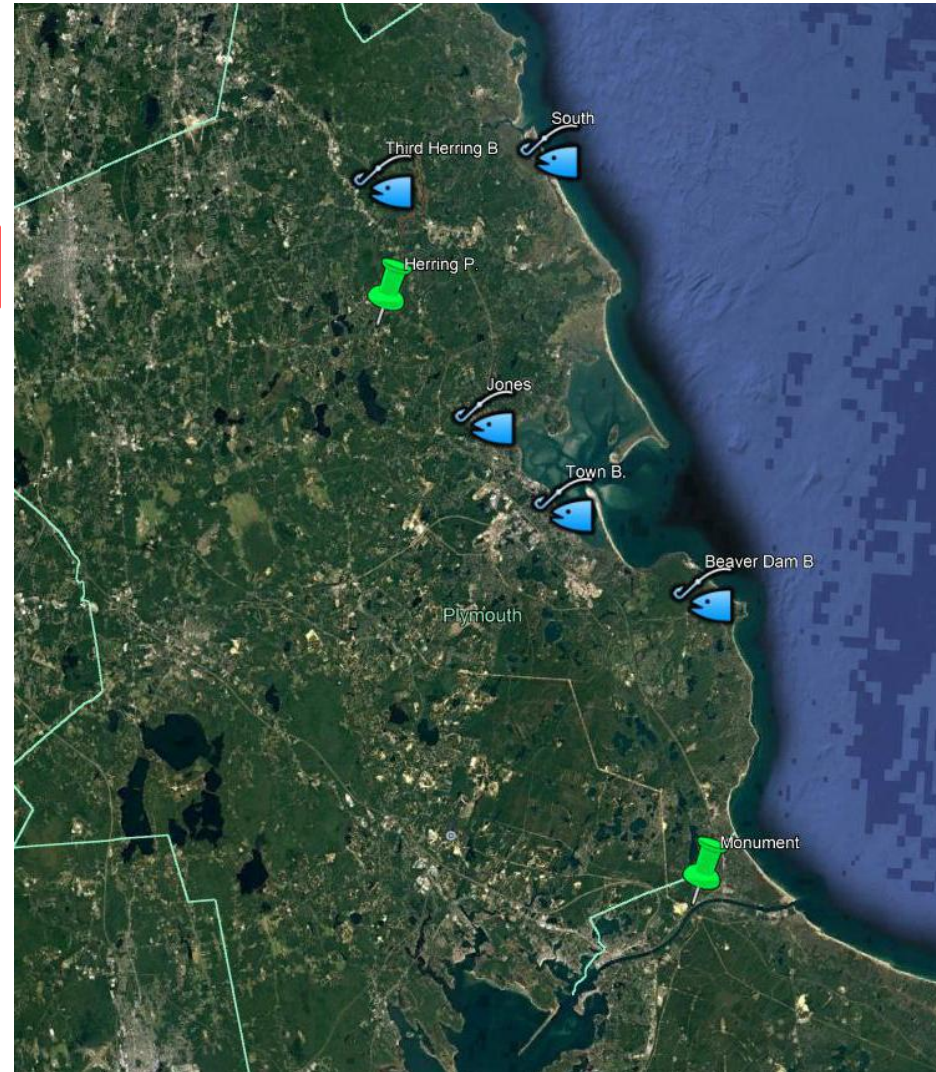


1-A. REGIONAL EFFORT AND COVERAGE (cont.) (SOUTH COASTAL)

Seven streams monitored

Stream	Method	Pe	I/D
Herring B	Electronic	307,832	I
Monument	Electronic	143,424	D
Beaver Dam	Visual	5,580	D
Jones	Visual	4,192	D
South	Visual	57	N/A
3 rd Herring	Visual	2,600	N/A
Town B	Visual	160,668	D

N/A – Insufficient data from 2016



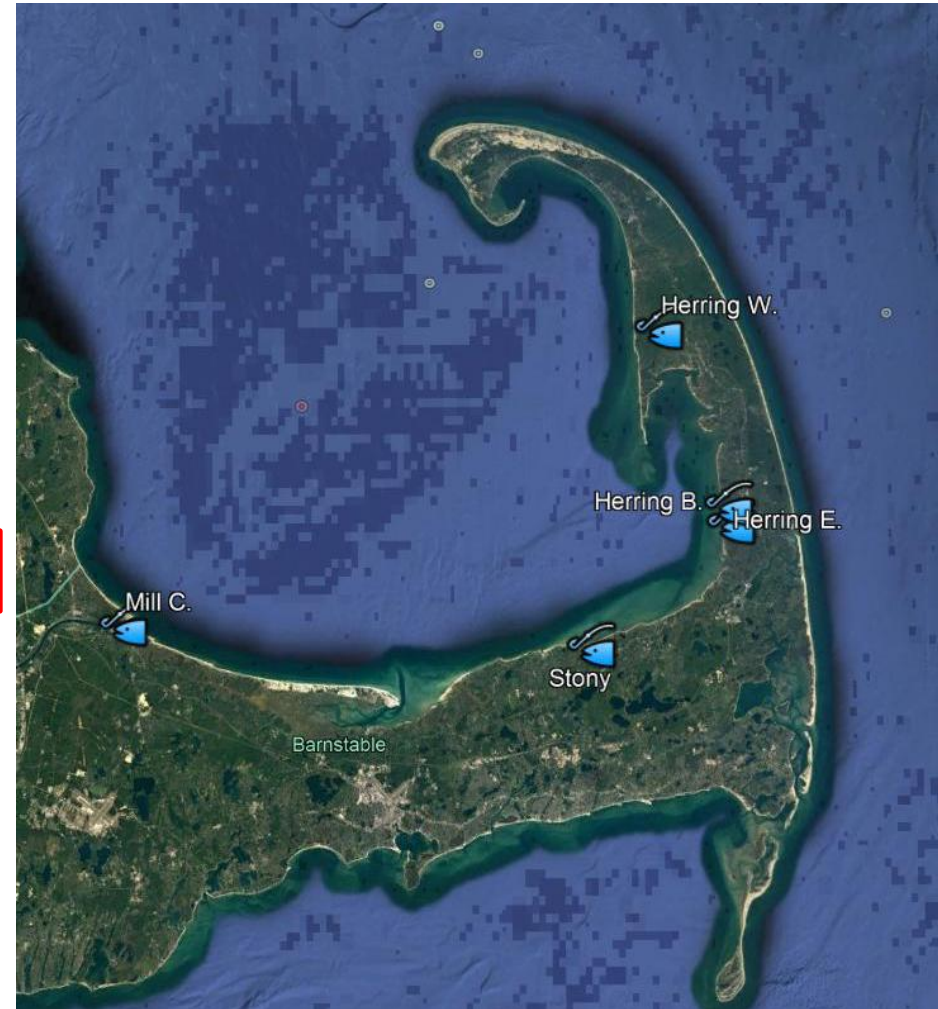
1-A. REGIONAL EFFORT AND COVERAGE (cont.) (CAPE COD NORTH)

Five streams monitored

Stream	Method	Pe	I/D
Herring B(E)	Visual	4,849	I
Herring R(E)	Visual	344	D
Herring (W)	Visual	8,044	D
Mill	Visual	20,215	N/A
Stony	Visual	20,328	D

N/A - Insufficient data from 2016 (Mill)

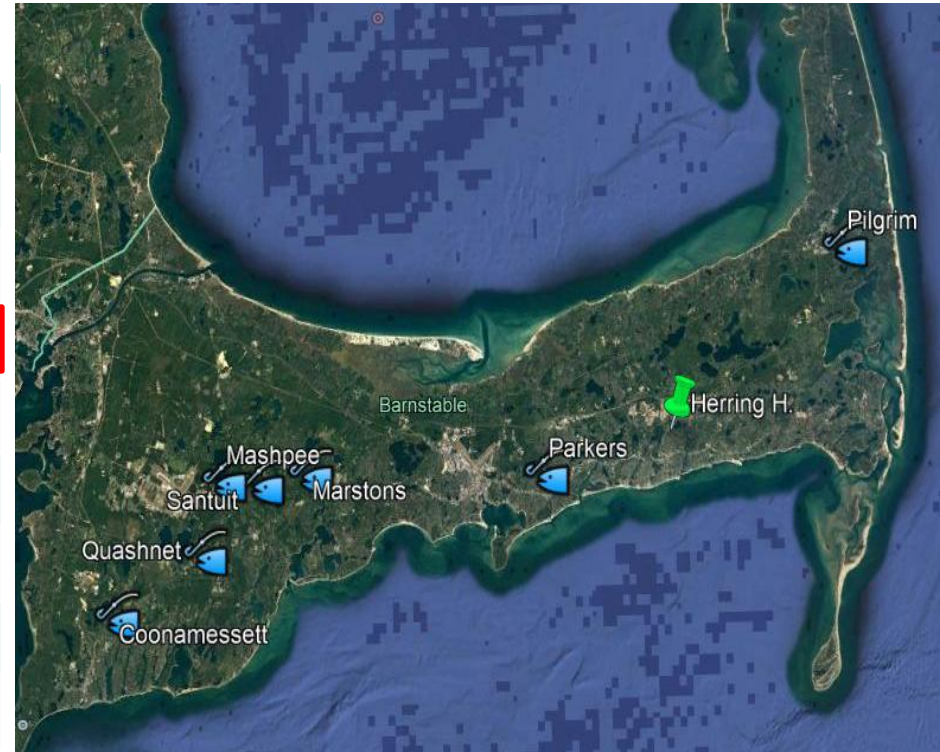
N/A - Insufficient sample size (Bound)



1-A. REGIONAL EFFORT AND COVERAGE (cont.) (CAPE COD SOUTH)

Eight streams monitored

Stream	Method	Pe	I/D
Coonamessett	Visual	42,211	D
Herring	Electronic	*284,936	*D
Marstons	Visual	36,148	I
Mashpee	Visual	107,190	N/A
Parkers	Visual	2,805	D
Pilgrim	Visual	27,551	I
Quashnet	Visual	8,252	D
Santuit	Visual	40,122	D



N/A - Insufficient data from 2016

* PRELIMINARY estimate

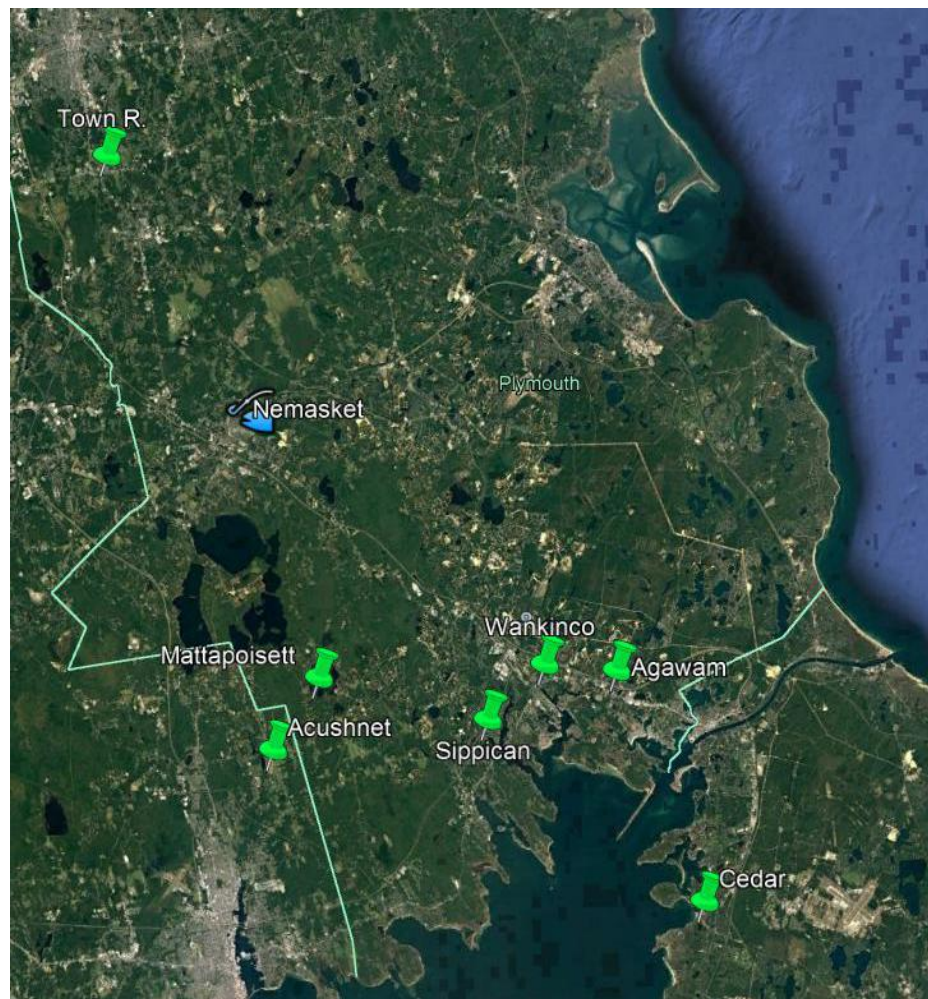


1-A. REGIONAL EFFORT AND COVERAGE (cont.) (SOUTHEAST MA - BUZZARDS BAY & TAUNTON RIVER)

Eight streams monitored

Stream	Method	Pe	I/D
Acushnet	T/E	8,365	I
Agawam	Electronic	31,077	I
Cedar	Electronic	4,256	N/A
Mattapoissett	Electronic	14,938	D
Nemasket	Visual	150,392	D
Sippican	Electronic	315	I
Town R	Electronic	10,450	I
Wankinco	Electronic	24,762	I

N/A - Change in counting method



1-B. MONITORING SUMMARY STATISTICS - MASSACHUSETTS

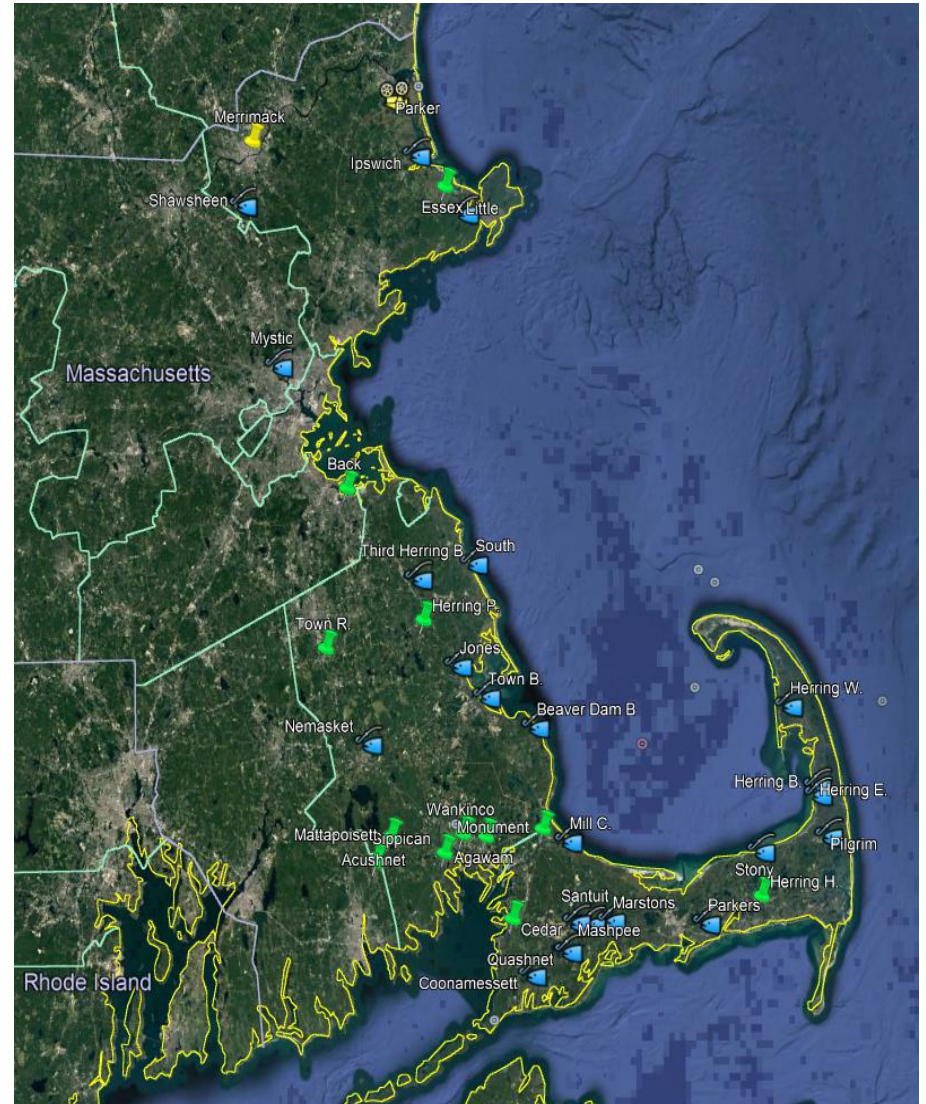
1. 37 streams monitored in 2017 (8 watersheds, incl. CT River)

A. Methods

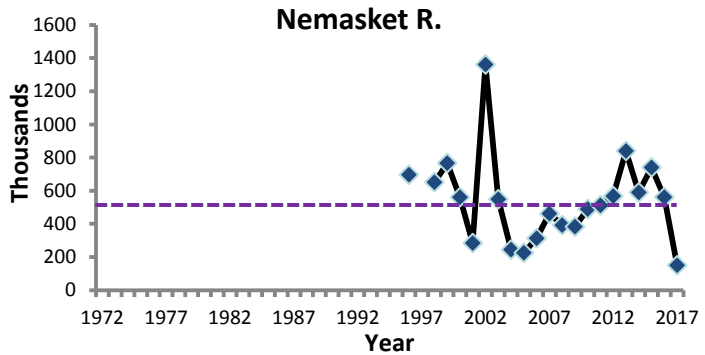
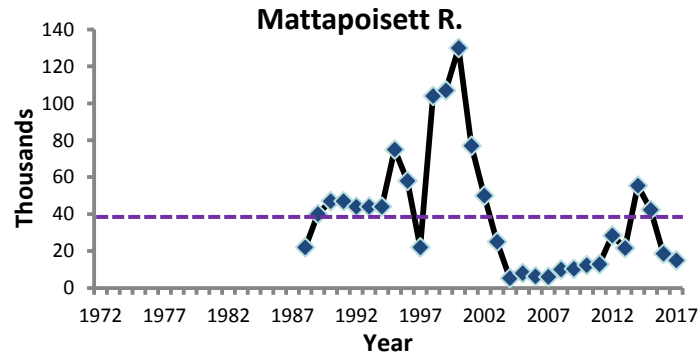
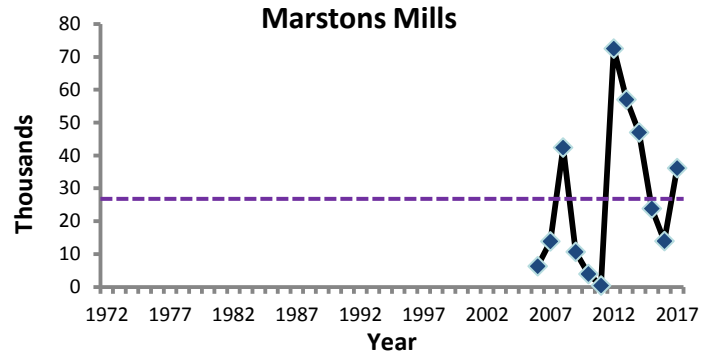
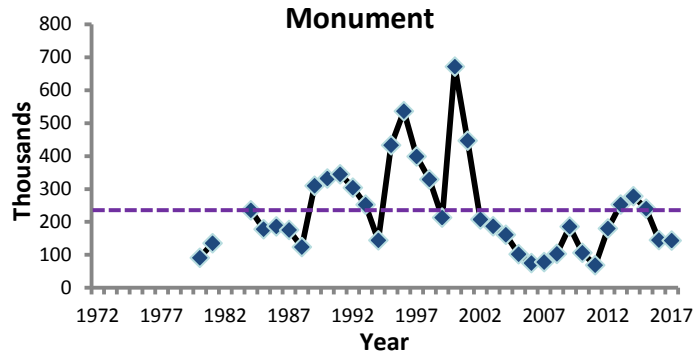
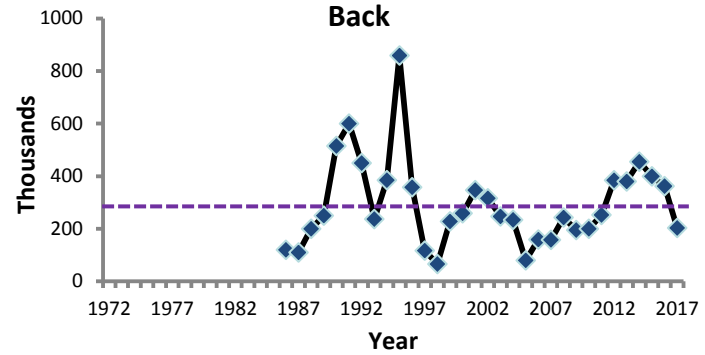
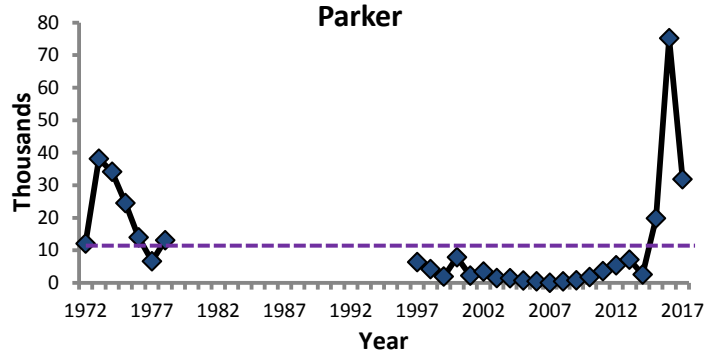
- a. Visual = 22 (60%)
- b. Electronic = 12 (32%)
- c. Video = 1 (3%)
- d. Lift = 2 (5%)

B. Changes from 2016

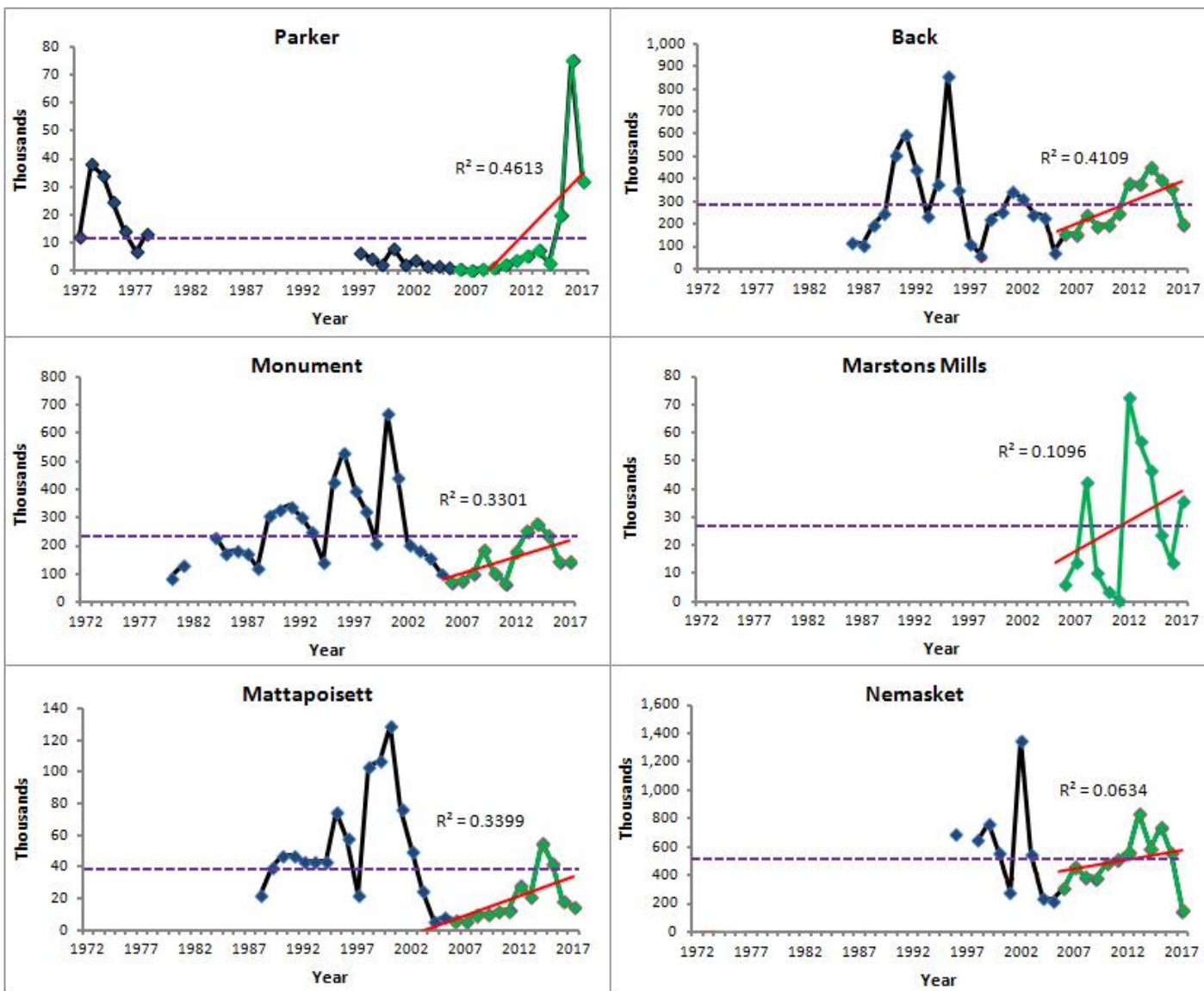
Region	Increase	Decrease	N/A
North Coast	1 (17%)	4(66%)	1(17%)
Boston HBR	1 (50%)	1 (50%)	0
South Coast	1 (14%)	4 (57%)	2 (29%)
Cape Cod N	1 (20%)	3 (60%)	1 (20%)
Cape Cod S	2 (25%)	5(63%)	1(13%)
Buzzards Bay	4 (66%)	1 (17%)	1 (17%)
Taunton	1 (50%)	1 (50%)	0
CT River	1 (100%)	0	0
Totals	12 (32%)	19 (52%)	6 (16%)



1-C. TRENDS - MASSACHUSETTS COASTAL RUNS



1-C. TRENDS - MASSACHUSETTS COASTAL RUNS (cont.)



1-D. NEW MONITORING SITES & EFFORTS



Shawsheen River, Merrimack River watershed (North Coastal)
Andover Conservation Commission



1-D. NEW MONITORING SITES & EFFORTS (cont.)



Mystic River, Medford
(Boston Harbor)
MADMF-MRWA



Cedar Lake, Falmouth
(Buzzards Bay)
BBC



Stony Brook, Brewster
(Cape Cod Bay)
Town of Brewster



1-E. MONITORING JUVENILE RIVER HERRING



Monument River
(South Coastal)
MADMF-WHOI



Stony Brook
(Cape Cod Bay)
Antioch University NE-APCC



2. COAST-WIDE STATUS OF RIVER HERRING STOCKS

ASMFC River Herring Stock Assessment Update

SAS recommended an update of trend analyses 5 years after the 2012 benchmark assessment and a new benchmark assessment after 10 years (i.e., 2022)

1. Includes additional data from 2011-2015
2. Data from 54 river systems (ME - FL) were included
3. Fishery-Dependent Data
 - a. Directed commercial fisheries landings
 - b. Bycatch (ocean intercept fisheries)
 - c. Commercial catch-per-unit-effort (CPUE) fisheries
4. Fishery-Independent Data
 - a. **Run size indices (i.e. counts, lifts)***
 - b. Trawl surveys
 - c. YOY surveys
5. Biological Data

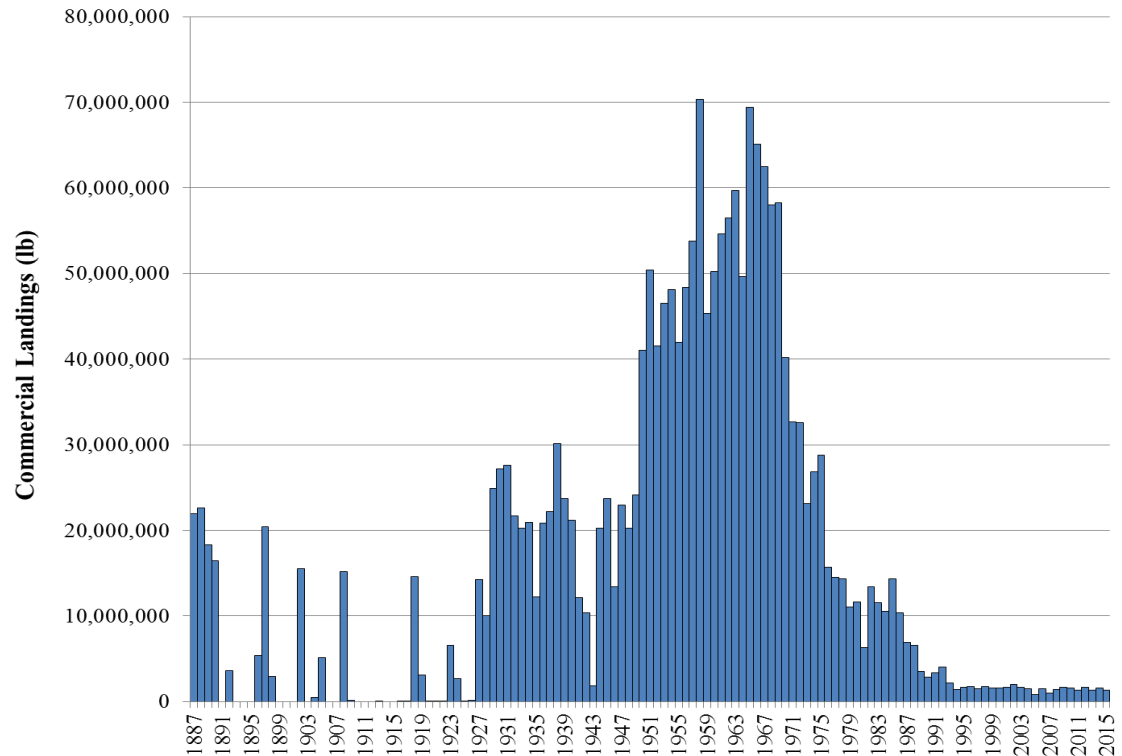
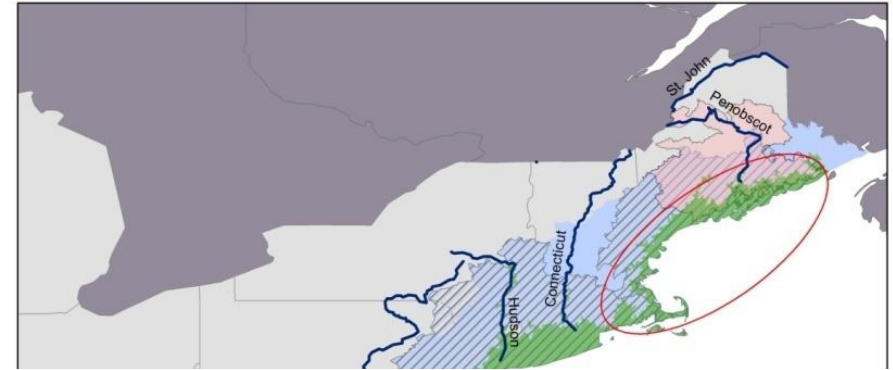
<ol style="list-style-type: none"> a. Length b. Age c. Repeat spawning 	}	Total mortality (Z) and survivorship (S)
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* Run size indices are provided mostly by New England states

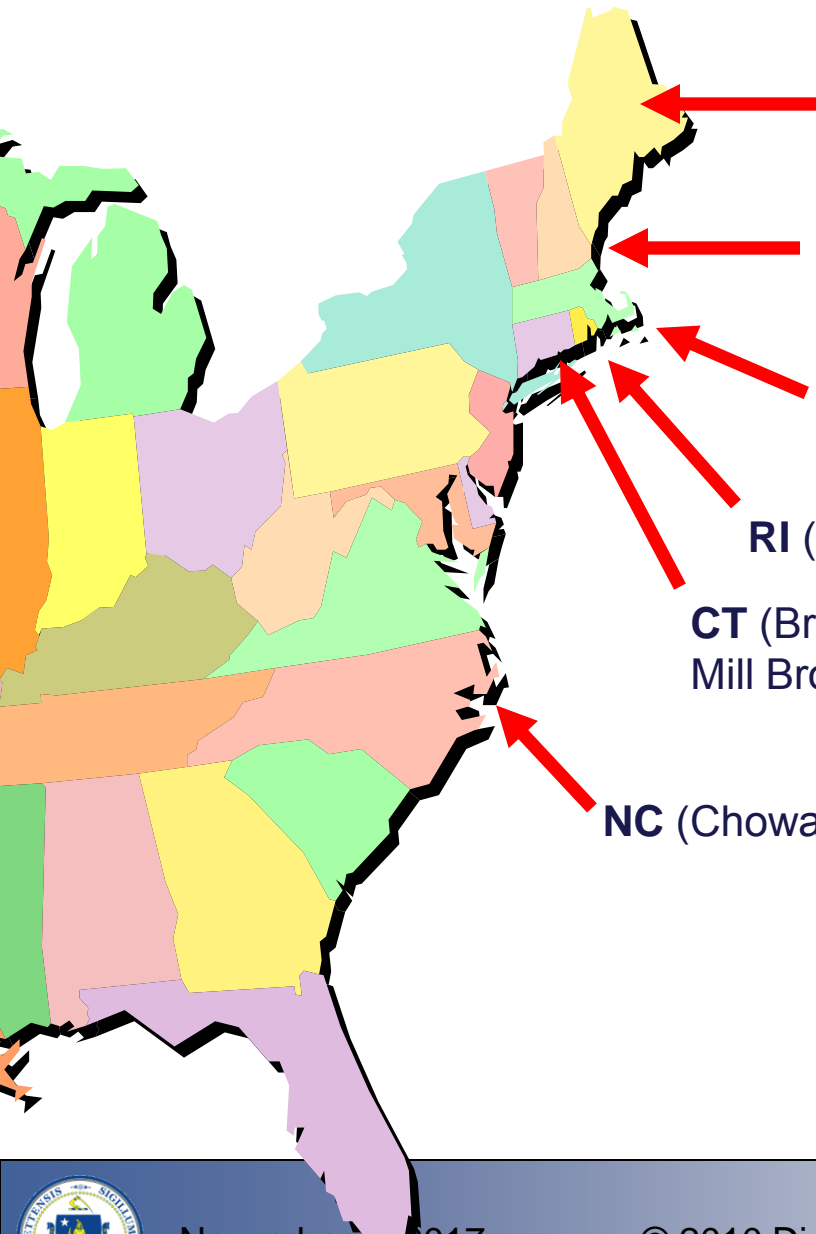
Sources:

ASMFC River Herring Stock Assessment Update Vol. 1 (Coast-wide Summary), Vol. II (State-Specific Reports)

www.asmfc.org



2-A. TRENDS IN NEW ENGLAND STOCKS



ME (Androscoggin \uparrow^A , Kennebeck \uparrow^{RH} , Sebasticook \uparrow^{RH} , Damariscotta \uparrow^A , Union \leftrightarrow^A)

NH (Cocheco \uparrow^{RH} , Exeter \leftrightarrow^{RH} , Lamprey \uparrow^{RH} , Oyster \leftrightarrow^{RH})

MA (Mattapoisett \uparrow^A , Monument $\uparrow^{A,B}$, Nemasket \uparrow^A , Parker \leftrightarrow^A)

RI (Buckeye \leftrightarrow^A , Gilbert \leftrightarrow^A , Nonquit \leftrightarrow^A)

CT (Bride Brook \uparrow^A , Connecticut \leftrightarrow^B , Mianus $\leftrightarrow^{A,B}$, Mill Brook \leftrightarrow^A , Shetucket $\leftrightarrow^{A,B}$)

NC (Chowan \leftrightarrow^B)

By species

B - Blueback: 1 increasing, 4 no trend

A - Alewife: 6 increasing, 8 no trend

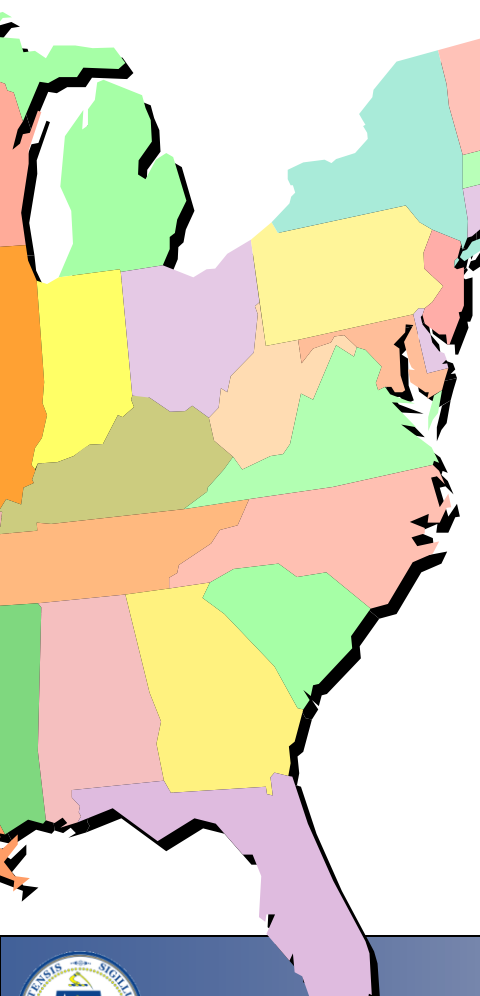
RH - Combined: 4 increasing, 2 stable



2-B. TRENDS IN MID-SOUTH ATLANTIC STOCKS

State	River	Benchmark Trends (2001-2010)	Updated Recent Trends (2006-2015)
NY	Hudson	Stable (A,B)	Increasing (RH)
NJ, DE, PA	Delaware	Unknown (A,B)	No Trend (A,B)
MD, DE	Nanticoke	Decreasing (A,B)	Stable (A), No Trend (B)
VA, MD, DC	Potomoc	Unknown (A,B)	Stable (A), Unknown (B)
VA	James	Unknown (A,B)	Unknown (A,B)
	Rappahannock	Unknown (A,B)	No trend (A), Increasing (B)
	York	Unknown (A,B)	Unknown (A,B)
NC	Alligator	Unknown (A,B)	Unknown (A,B)
	Chowan	Stable (A,B)	No Trend (A), Stable (B)
	Scuppernog	Unknown (A,B)	Unknown (A,B)
SC	Santee-Cooper	Increasing (B)	No Trend (B)
FL	St. Johns	N/A	Unknown (B)

Abundance trends of select alewife and blueback herring stocks along the Atlantic coast from the 2012 benchmark assessment and the 2017 assessment update. Determinations based on synthesized fishery-dependent and biological data and fishery-independent JAI surveys.



2-C. SUMMARY-RECENT TRENDS IN ABUNDANCE

- 54 River-Specific Stocks (2006-2015)
 - 17 increasing
 - 2 decreasing
 - 8 stable
 - 10 experienced no discernible trend due to high variability
 - 17 did not have enough data to assess recent trends



2-C. SUMMARY (cont.) - MA AND REGIONAL STATUS

- 38 MA streams were counted in 2017
- 32% increased; 52% decreased; 16% (N/A) from results in 2016
- Analyses of select MA streams indicate increasing population trends (2006 - 2017), however, many rivers remain below time-series mean (TSM)
- ASMFC Benchmark Assessment Update indicates increasing trends in MA, NH and ME streams; no trend in RI and CT streams



2-C. SUMMARY (cont.) - COAST-WIDE STATUS

- Though some positive signs were apparent through the update (e.g., few declining recent trends by data set), the information updated indicates that the status of the river-herring meta-population being depleted to near historic lows remains unchanged since the benchmark stock assessment.
- “Depleted” status indicates that there was evidence for declines in abundance due to a number of factors (i.e. directed and incidental fishing, habitat loss, predation, climate change) but the relative importance of these factors in reducing river herring stocks could not be determined.



THANK YOU

- USFWS (CNEFRO & CTRO)
- Association to Preserve Cape Cod
- North & South River Watershed Association
- Buzzards Bay Coalition
- NOAA Restoration Center
- Municipal Wardens & DNR Personnel
- Watershed Associations
- ***VOLUNTEER COUNTERS***

