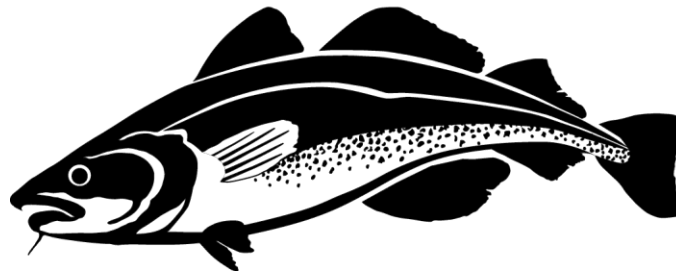


Status and trends of river herring runs in Massachusetts

John J. Sheppard

Diadromous Fisheries Biology & Management Project

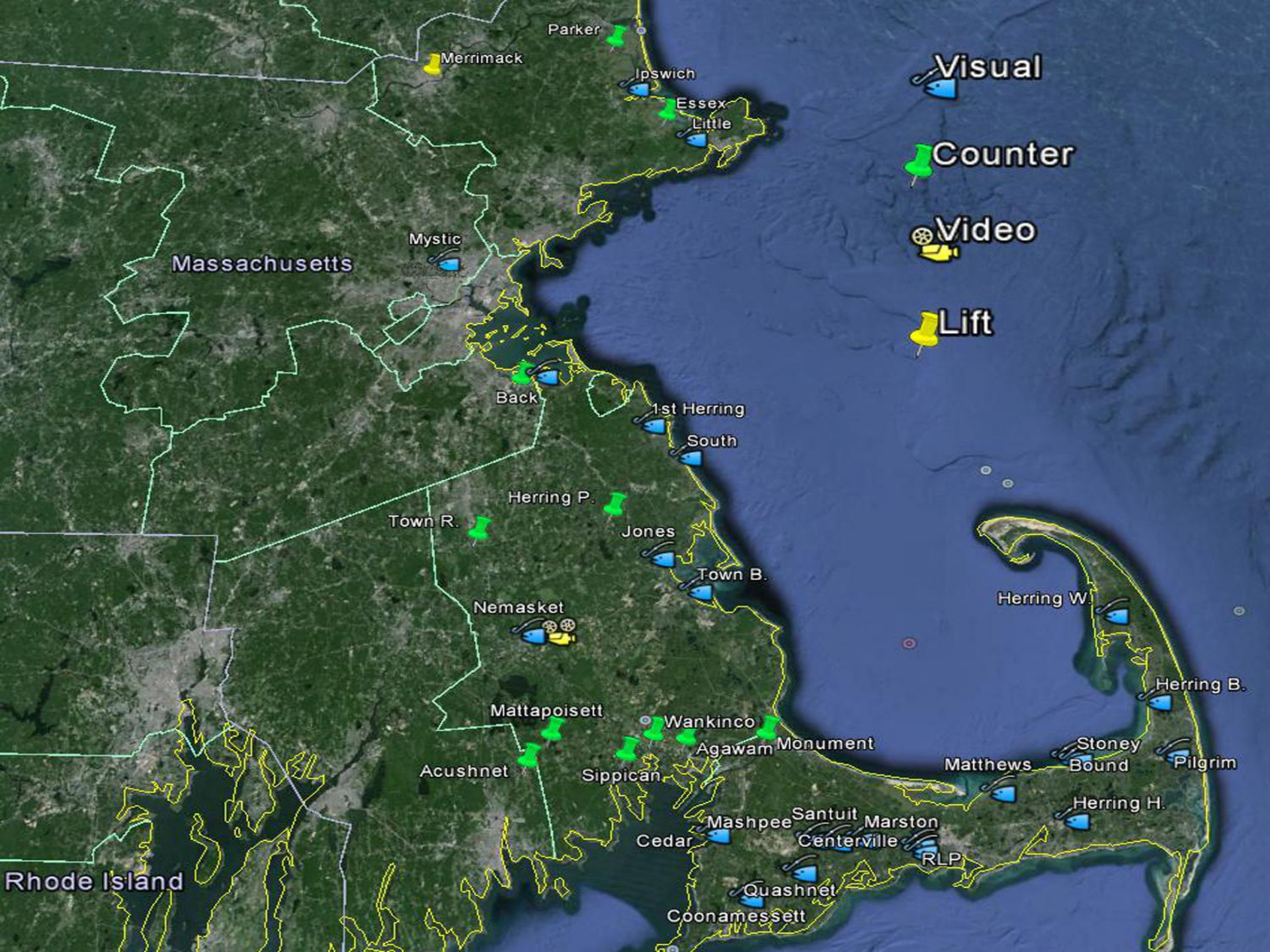
Marine Fisheries
Commonwealth of Massachusetts



Outline

- 2015 results
- 2015 comments and observations
- Trends prior to/after moratorium
- Summary

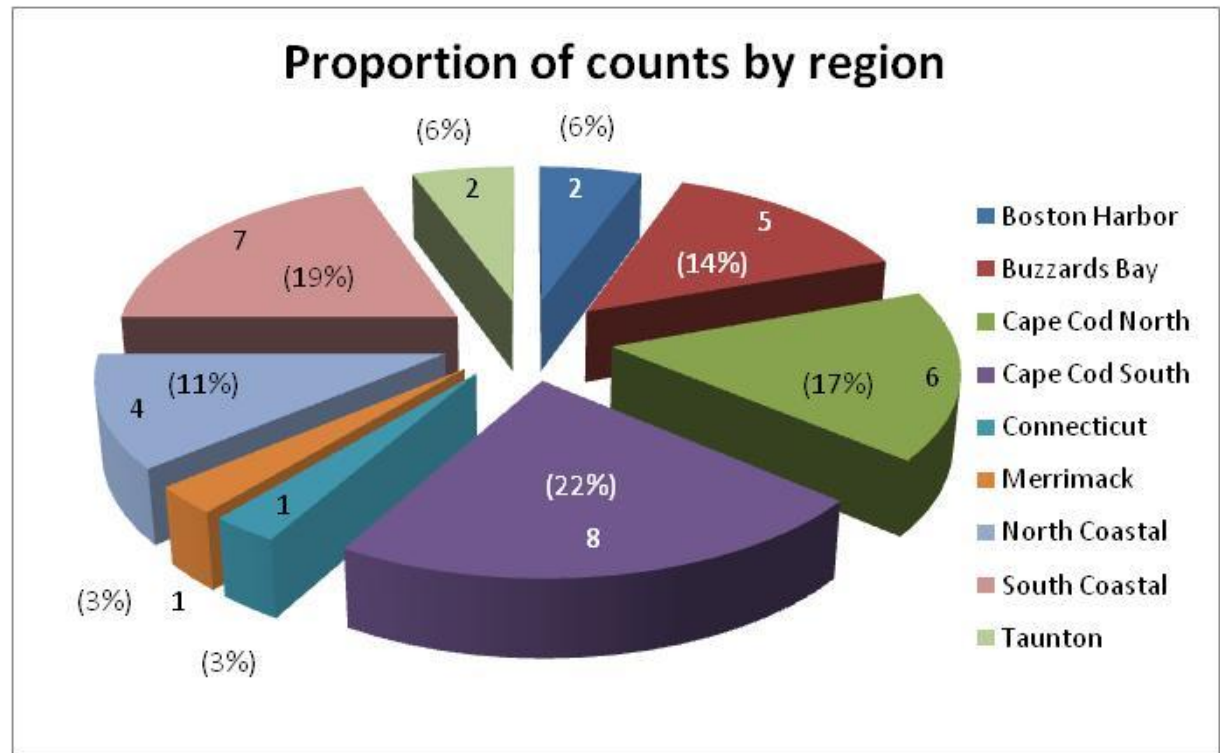




2015 Results

- 36 runs monitored (35 coastal; 1 inland – CT River)
- 8 major watersheds represented
- Highest coverage in Cape Cod (Barnstable County) – 39%
- Highest coverage in Cape Cod Bay (Cape Cod North + South Coastal) – 36%

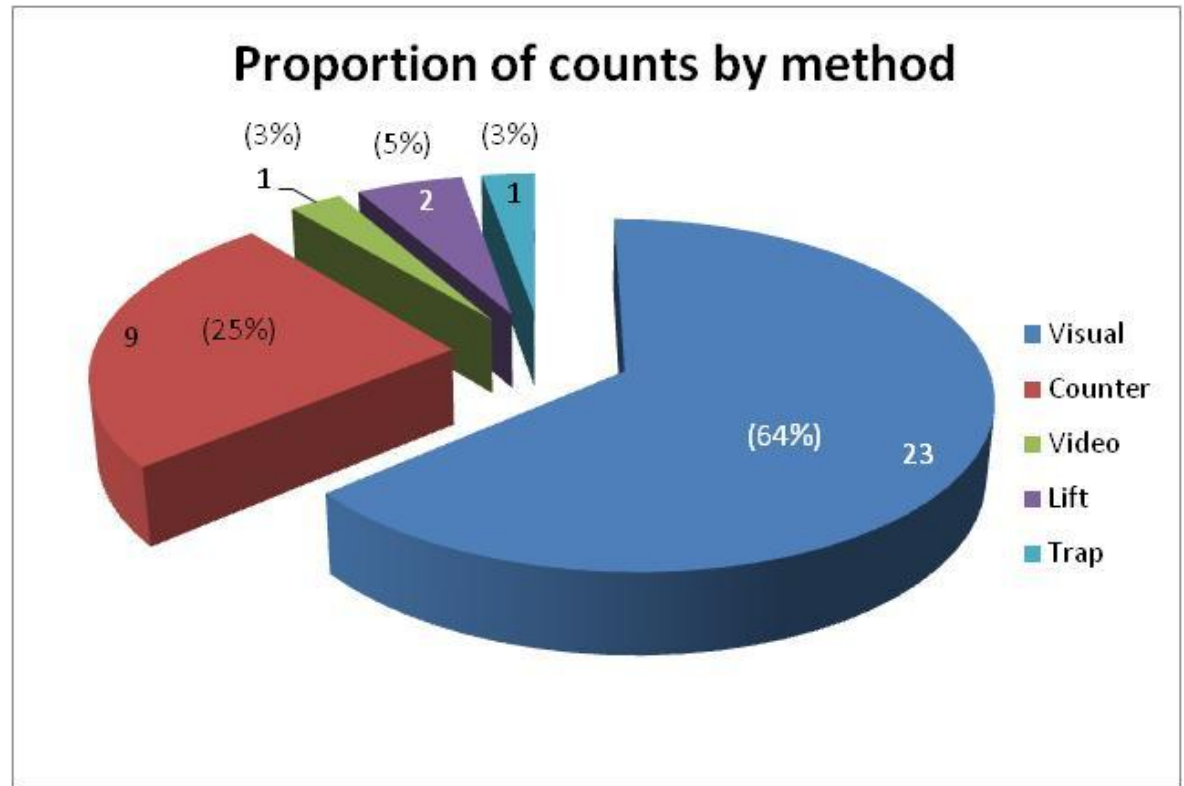
Watershed	N	%
Boston Harbor	2	6%
Buzzards Bay	5	14%
Cape Cod North	6	17%
Cape Cod South	8	22%
Connecticut	1	3%
Merrimack	1	3%
North Coastal	4	11%
South Coastal	7	19%
Taunton	2	6%
Total	36	100%



2015 Results

- Runs monitored using five methods
- Visual counts is the most dominant method (64%)
- Electronic resistivity counters (SR-1100; 1101 & 1601)

Method	N	%
Visual	23	64%
Counter	9	25%
Video	1	3%
Lift	2	5%
Trap	1	3%
Total	36	100%



2015 PRELIMINARY RESULTS

Watershed	River	Count (2015)	Method	I/D
Boston Harbor	Weymouth Back	440,000 (V)/399,554 (C)	Visual/Counter	D
Boston Harbor	Mystic	477,827	Visual	I
Buzzards Bay	Mattapoissett	42,332	Counter	D
Buzzards Bay	Agawam	24,398	Counter	D
Buzzards Bay	Wankinco	14,170	Counter	D
Buzzards Bay	Acushnet	3,673	Trap/Counter	D
Cape Cod North	Bound Brook	25,817	Visual	I
Cape Cod North	Herring (Welfleet)	18,025	Visual	D
Cape Cod North	Stoney	251,530	Visual	D
Cape Cod North	Matthews Pond	52,742	Visual	D
Cape Cod North	Herring B (Eastham)	3,204	Visual	D
Cape Cod North	Herring (Harwich)	127,860	Visual	D
Cape Cod South	Marston Mills	23,840	Visual	D
Cape Cod South	Cedar Lake	16,163	Visual	I
Cape Cod South	Mashpee	206,863	Visual	D
Cape Cod South	Santuit	119,182	Visual	D
Cape Cod South	Quashnet	14,256	Visual	D
Cape Cod South	Centerville	218	Visual	N/A
Cape Cod South	Coonamesset	74,595	Visual	N/A
Cape Cod South	Pilgrim Lake	4,245	Visual	I
Connecticut	Connecticut	106	Lift	D
Merrimack	Merrimack	128,681	Lift	I
North Coastal	Essex	14,583	Counter	I
North Coastal	Little	1,423	Visual	D
North Coastal	Ipswich	319	Visual	I
North Coastal	Parker	19,852	Counter	I
South Coastal	Herring B (Pembroke)	124,269	Counter	N/A
South Coastal	Monument	239,169	Counter	D
South Coastal	Jones	4,437	Visual	D
South Coastal	Town Brook	173,567	Visual	I
Taunton	Nemasket	741,048	Visual/Video	I

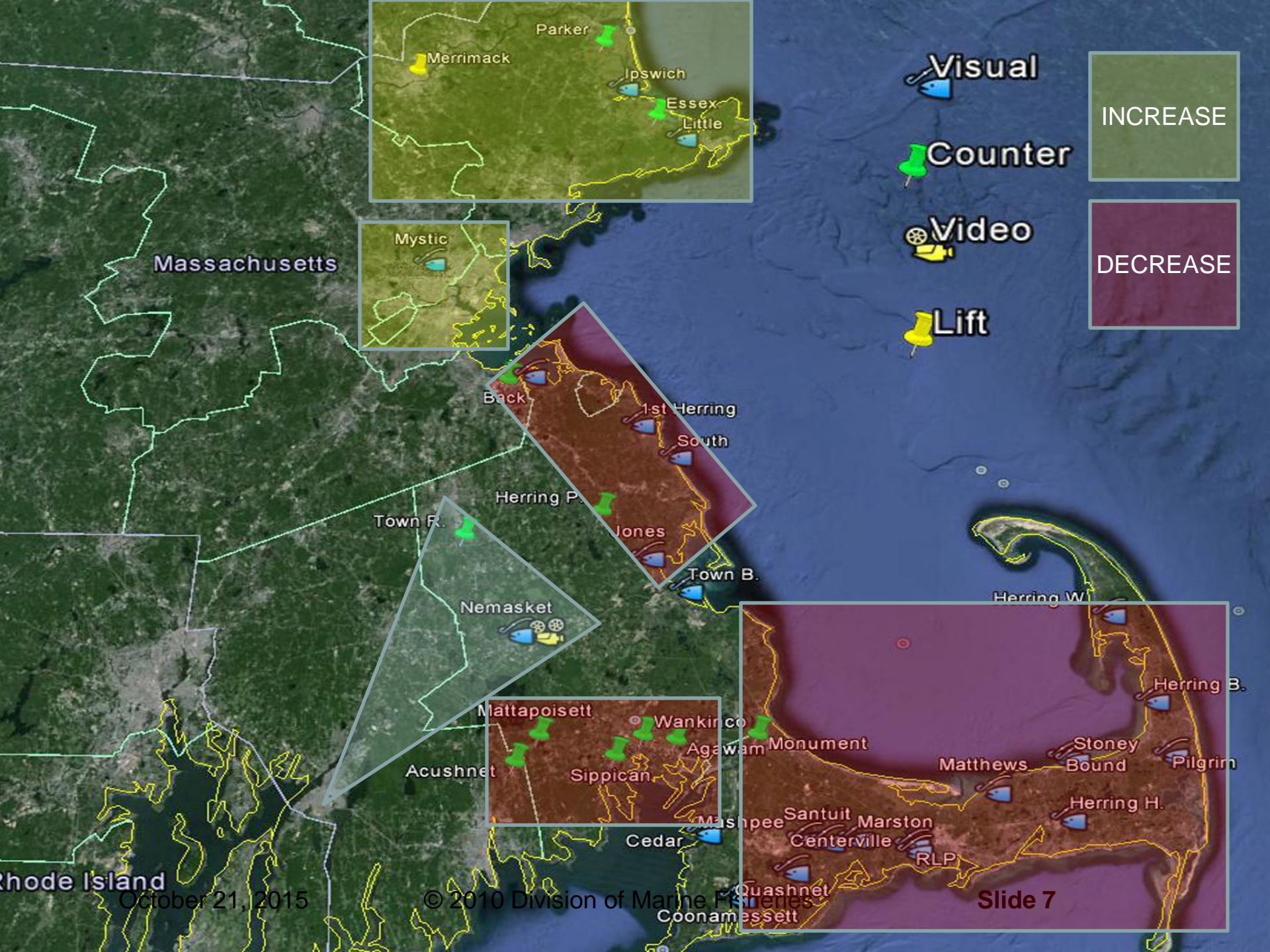
Increase = 10

Decrease = 18

N/A (1st) = 3

Not Analyzed = 5





Visual

Counter

Video

Lift

INCREASE

DECREASE

Massachusetts

Rhode Island

October 21, 2015

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Slide 7

2015 Comments & Observations



Water temperature

March - April

May - June

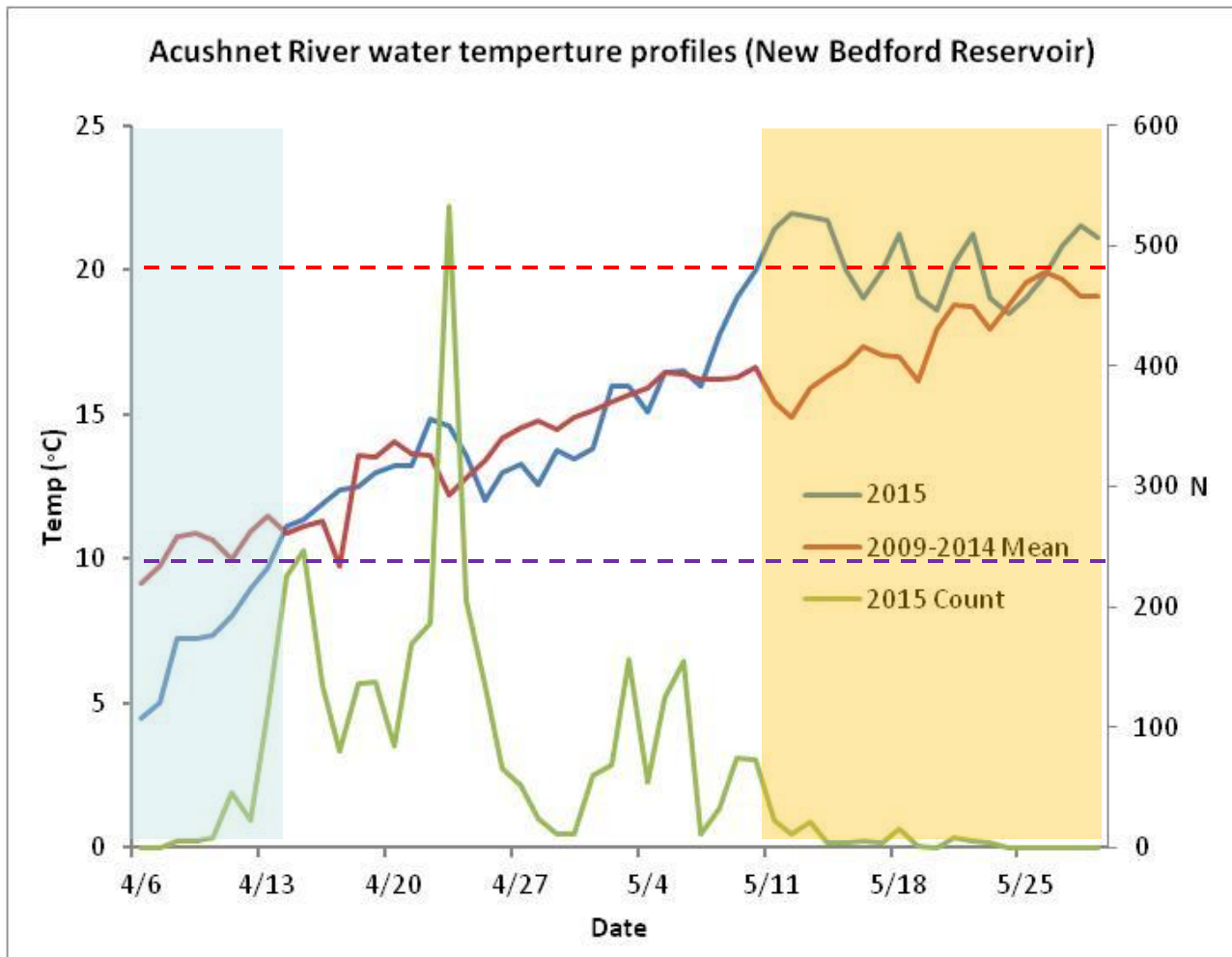
Life History Notes



- Alewives generally initiate spawning runs when water temperatures range between 5°C - 10°C (Loesch 1987)
- Spawning migrations slow (delay) at temperatures < 8°C and > 18°C (Richkus 1974)
- Spawning ceases when temperatures > 20°C [i.e. 21°C – RI (Cooper 1961); 27.2°C – CT River (Kissil 1974)]



2015 Comments & Observations

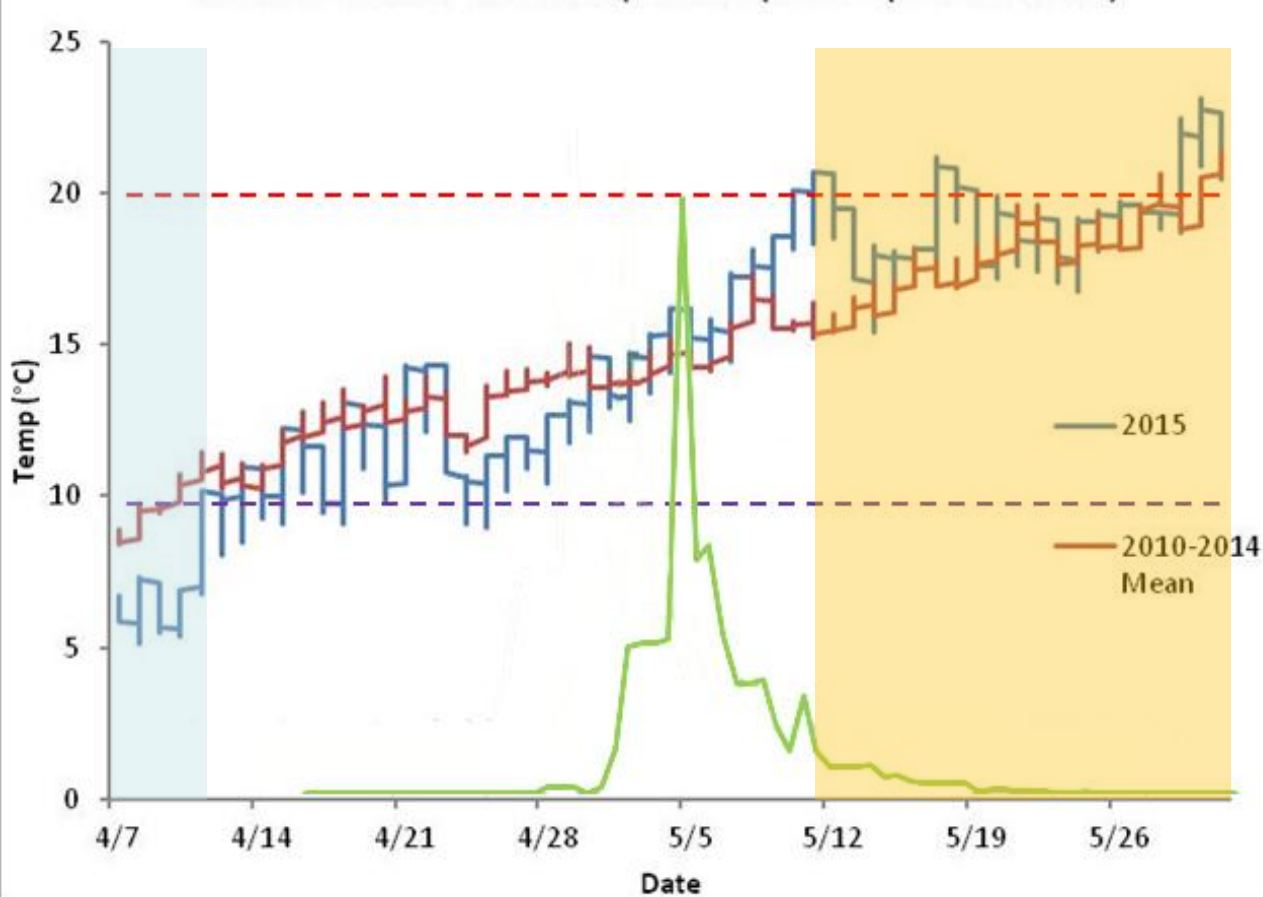


Year	Run Start	Run End	N days
2015	4/8	5/26	49
2014	4/8	5/30	53
2013	3/29	6/5	69
2012	3/14	5/30	78
2011	3/30	5/27	59
2010	3/30	5/21	53
2009	3/31	5/22	53
2009-2014 Mean			61
Difference			-12



2015 Comments & Observations

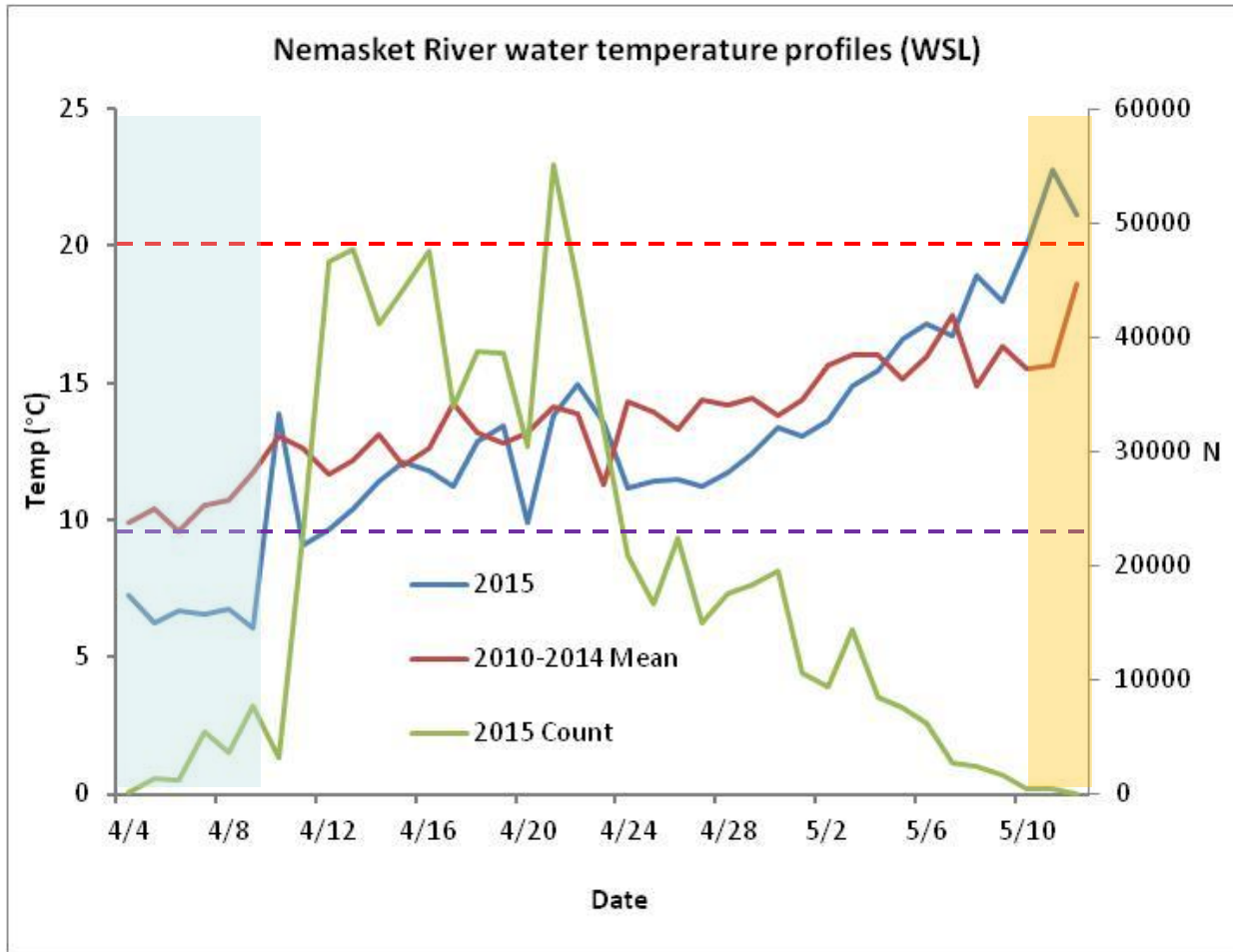
Monument River water temperature profiles (Benoit's Pond)



Year	Run Start	Run End	N days
2015	4/22	6/5	45
2014	4/12	6/11	61
2013	4/10	6/21	73
2012	3/15	6/11	89
2011	4/12	6/20	70
2010	4/5	6/15	72
2010-2014 Mean			73
Difference			-28



2015 Comments & Observations



Year	Run Start	Run End	N days
2015	4/1	5/17	47
2014	3/21	5/19	60
2013	3/14	5/16	64
2012	2/22	5/16	84
2011	3/11	5/8	59
2010	3/8	5/5	59
2010-2014 Mean			65
Difference			-18



Moratorium

**DIVISION OF MARINE FISHERIES
DEPARTMENT OF FISH & GAME
THE COMMONWEALTH OF MASSACHUSETTS**



CLOSED TO THE HARVEST OF RIVER HERRING

(Alosa pseudoharengus and Alosa aestivalis)

**UNTIL FURTHER NOTICE, IT IS ILLEGAL TO
HARVEST, POSSESS OR SELL RIVER HERRING
IN THE COMMONWEALTH OR FROM WATERS
UNDER THE JURISDICTION OF THE
COMMONWEALTH
(322 CMR 6.17)**



October 21, 2015

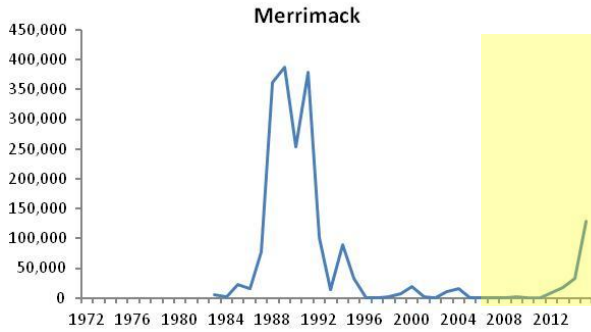
© 2010 Division of Marine Fisheries

Slide 12

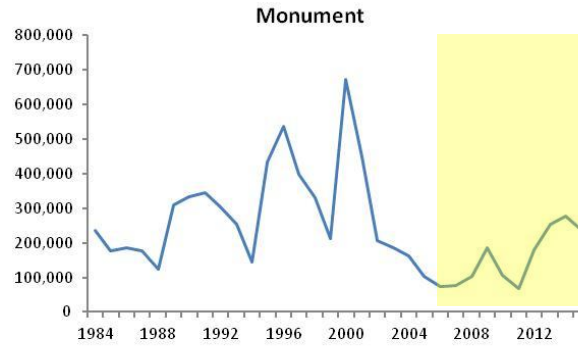


Trends prior to/after moratorium

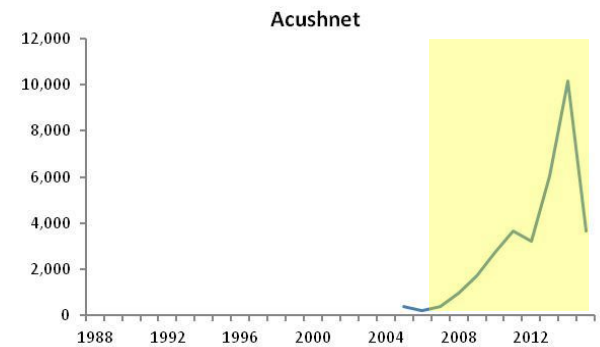
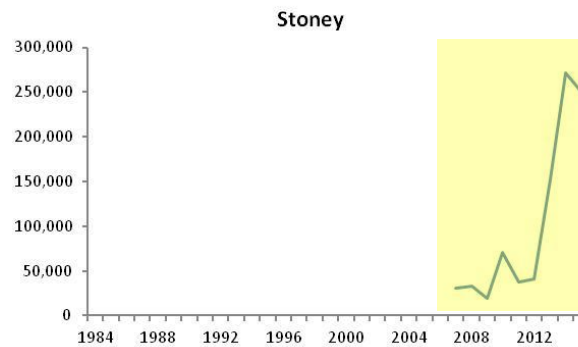
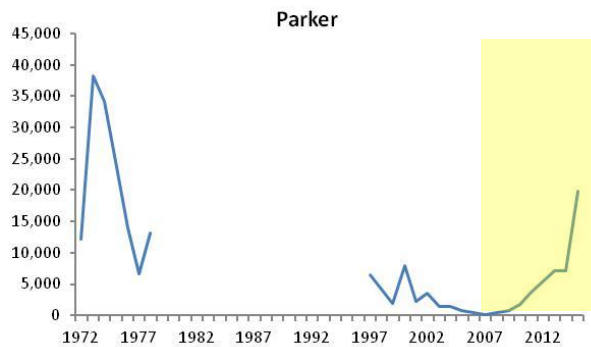
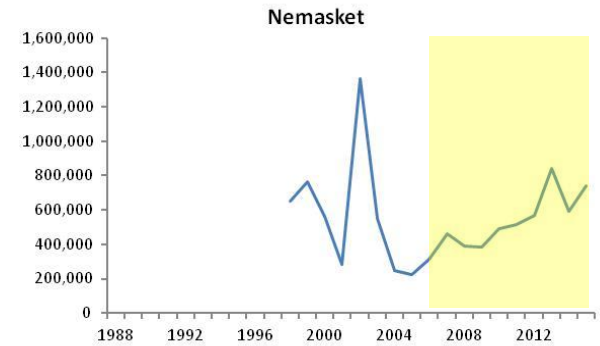
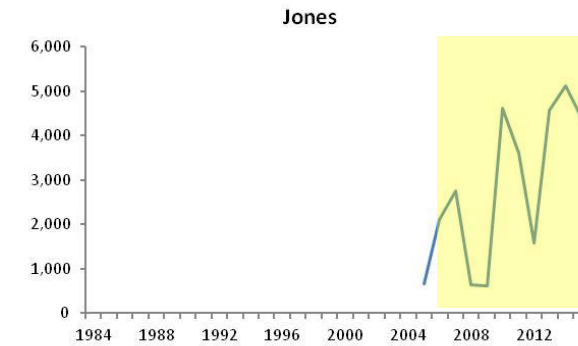
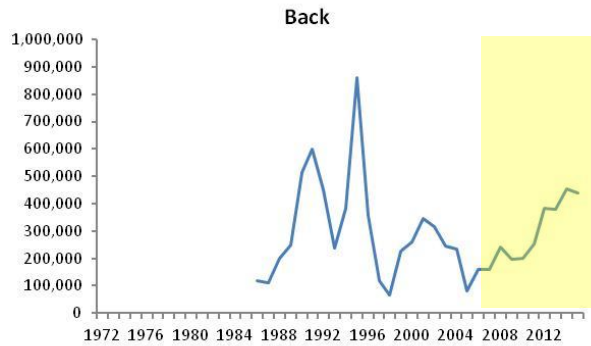
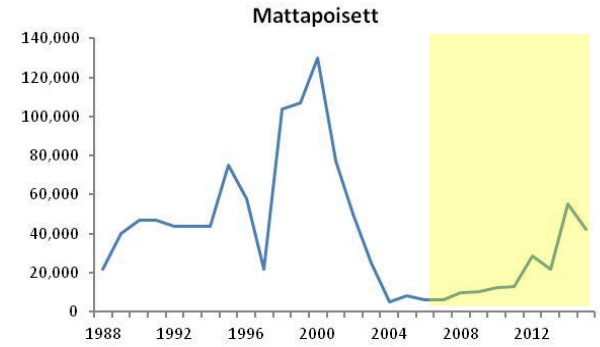
Boston Harbor/North Coastal



Cape Cod Bay



Buzzards Bay/Taunton



Trends prior to/after moratorium

Region	River	Min	Max	Pre	Post	TSM
Merrimack	Merrimack	51	387,973	78,335	19,379	60,470
North Coastal	Parker	50	38,163	10,792	4,687	8,443
North Coastal	Little	0	8,664	2,837	1,602	2,077
Boston Harbor	Back	66,000	859,000	298,900	286,756	294,852
South Coastal	Jones	612	5,121	N/A	2,794	2,794
South Coastal	Town B.	107,413	195,091	N/A	156,196	156,196
South Coastal	Monument	68,639	671,839	285,166	156,697	237,265
Cape Cod (North)	Stoney	19,197	271,364	N/A	100,904	100,904
Buzzards Bay	Agawam	19,064	100,473	N/A	44,964	44,964
Buzzards Bay	Mattapoisett	5,300	130,000	52,739	20,565	41,248
Buzzards Bay	Acushnet	202	10,144	395	3,270	3,009
Taunton	Nemasket	225,904	1,361,691	593,505	529,224	559,673



Summary

- 2015 results indicated declines in the majority of runs monitored in southern Massachusetts
- In contrast, the majority of runs monitored in northern Massachusetts increased
- Field observations in 2015 suggest water temperatures may have affected timing and duration of spawning runs as well as spawning behavior
- Evidence of low to moderate recovery rates in runs throughout the Commonwealth
- Mean recovery rate is below TSM for most runs



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***

