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2015 Harbor Porpoise Bycatch, Compliance, & Abundance

Harbor Porpoise Take Reduction Team
Webinar Presentation

Chris Orphanides & Debra Palka, November 30, 2016

Presentation Overview

- 2015 Bycatch Summary
- HPTRP Compliance & Pinger Functionality
- Some Longer Term Trends

2015 Bycatch Summary

Bycatch Estimation, Locations, Observer Coverage, & Gear Characteristics



2015 Bycatch Summary

Overview

- Observer Coverage
- Observed and Estimated Harbor Porpoise Takes
- Harbor Porpoise Take Locations
- Gear Characteristics

2015 Observer Coverage

New England

- 14% coverage, seasonally varied from 10-16%
- Good coverage in key areas
 - (10% winter SNE, 25% fall mid-Coast)

Mid-Atlantic

- Increased mid-Atlantic coverage (6.3%)
- 10.2% on vessels landed in NJ
- 6% for harbor porpoise estimate strata

DRAFT 2015 Estimated Takes – New England

Season	Portgroup (P) / Management Area (MA)	Bycatch	Bycatch Rate	Estimated Bycatch	CV	95% CI
W	Mid-Coast (MA)	1	0.244	5.57	1.27	1-43
W	Cape Cod South (MA)	2	0.034	26.29	0.76	2-95
W	Southern New England (MA)	10	0.039	103.53	0.45	37-236
W	Subtotal	13	-	135.39	0.36	61-272
S	North of Boston (P)	1	0.018	6.13	0.93	1-33
S	Subtotal	1	-	6.13	0.93	1-33
F	Mid-Coast (MA)	9	0.084	35.83	0.43	12-91
F	Subtotal	9	-	35.83	0.45	12-91
	Total	23	-	177.35	0.28	94-314

DRAFT 2015 Estimated Takes – New England

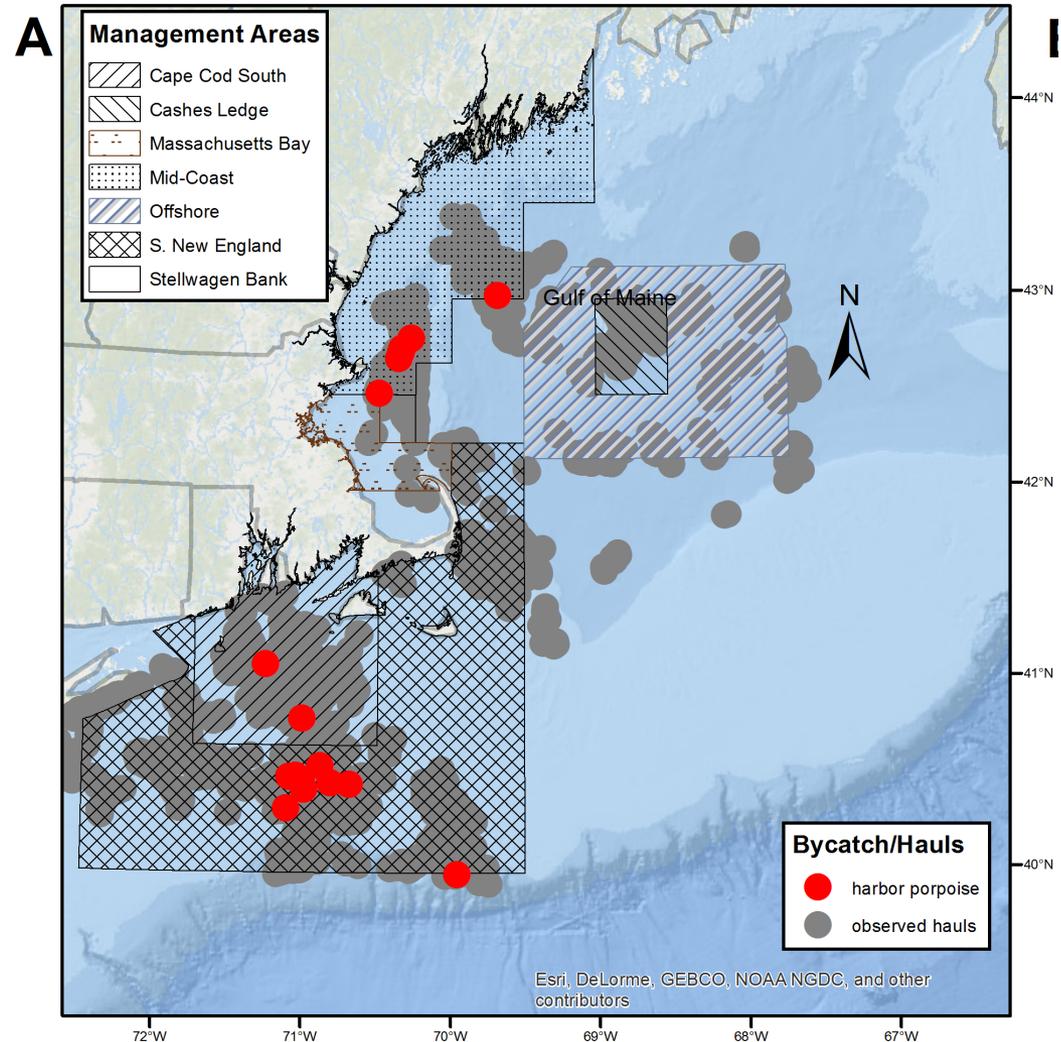
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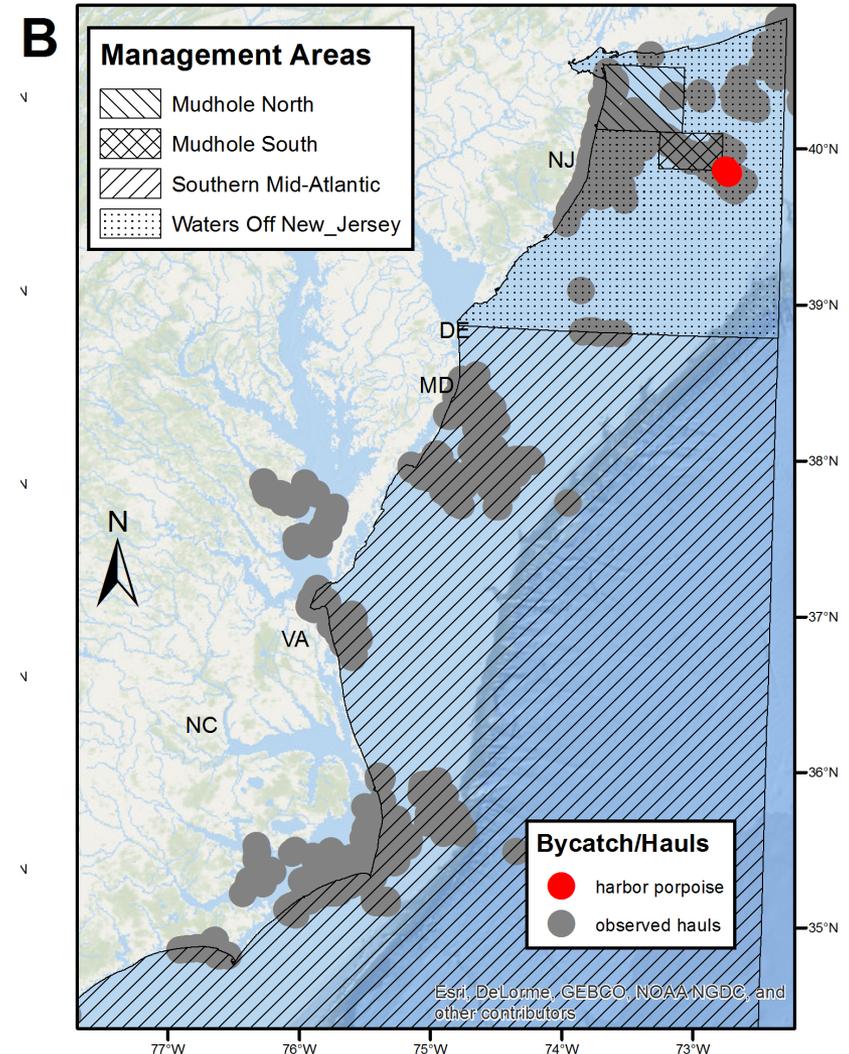
- 9 of 11 observed Gulf of Maine takes were in the Mid-Coast area during the fall
- 73% of all observed takes occurred south of New England



DRAFT 2015 Estimated Takes – Mid-Atlantic

- 2 takes in Feb off NJ
- Estimate strata: Jan-Apr, mesh size $\geq 7''$, soak duration >72 hrs

Observed Bycatch	Estimated Bycatch	CV	95% CI
2	33.49	1.16	2-204



DRAFT 2015 Estimated Takes – Totals

- New England: 177.35
- Mid-Atlantic: 33.49
- Total: **211**

2015 Bycatch Gear Characteristics

All Northeast Nov-May

Median values with and without bycatch

Gear Characteristic	Median (No Bycatch)	Median (With Bycatch)
Mesh Size (in)	7	12
Gear Length (ft)	4500	4500
Soak Duration (hrs)	48	96
Twine Size	0.81	0.90

- Mean percent of string with pingers: 74% vs 82%
- Some differences due to regional & seasonal target species

2015 Bycatch Gear Characteristics

Gulf of Maine, Nov-May

Median values with and without bycatch

Gear Characteristic	Median (No Bycatch)	Median (With Bycatch)
Mesh Size (in)	6.5	12
Gear Length (ft)	5400	6000
Soak Duration (hrs)	24	96
Twine Size	0.81	0.90

- 6 of 8 takes targeting monkfish, only 14% of all targets
- Mean percent of string with pingers: 91% vs 100%

2015 Bycatch Gear Characteristics

South of New England, Jan-May

Median values with and without bycatch

Gear Characteristic	Median (No Bycatch)	Median (With Bycatch)
Mesh Size (in)	12	12
Gear Length (ft)	4500	4200
Soak Duration (hrs)	96	216
Twine Size	0.90	0.90

- Mean percent of string with 100% vs 80%
- Mean soak durations 120 vs 192

2015 Bycatch Gear Characteristics

Mid-Atlantic

- 2 observed takes
- 12” mesh
- Gear lengths of 1800 and 3600 ft
- 144 hr soak durations
- Twine size 0.90 mm
- Monkfish target

Gear Characteristic	Median
Mesh Size (in)	12
Gear Length (ft)	3600
Soak Duration (hrs)	72
Twine Size (mm)	0.90
% Targeting Monkfish	75%

HPTRP Compliance & Pinger Functionality

New England Compliance, Mid-Atlantic Compliance, Pinger Testing

2015 New England HPTRT Compliance

Management Area	Season	Observed Hauls	Pinger Violations	Compliance Rate
Cape Cod South ^a	Fall	107	0	100%
MidCoast	Fall	366	50	86%
Offshore	Fall	39	7	82%
Southern New England	Fall	19	5	74%
Stellwagen Bank	Fall	93	13	86%
Cape Cod South ^a	Winter	114	27	76%
MassBay	Winter	4	0	100%
MidCoast	Winter	52	0	100%
Offshore	Winter	217	48	78%
Southern New England	Winter	322	45	86%
Stellwagen Bank	Winter	50	1	98%
Totals		1383	196	86%

^a Cape Cod South specification includes Dec-May, matching that used for the bycatch estimation strata

Pinger compliance rate only refers to pinger presence and not functionality

2015 Mid-Atlantic HPTRT Compliance

Management Area	Total Observed Hauls	Non-Compliant Hauls	Compliance %	Gear Modification	Closed Area
Southern Mid-Atlantic Large Mesh	14	2	86%	2	0
Southern Mid-Atlantic Small Mesh	149	20	87%	20	0
Mudhole North Large Mesh	6	4	33%	4	0
Mudhole North Small Mesh	11	0	100%	0	0
Mudhole South Large Mesh	15	7	53%	5	2
Mudhole South Small Mesh	0	0	-	0	0
Waters off New Jersey Large Mesh	60	30	50%	30	0
Waters off New Jersey Small Mesh	5	0	100%	0	0
Totals	260	63	76%	61	2

- Total Large Mesh Compliance = 55%
- Total Small Mesh Compliance = 88%

2015 Mid-Atlantic HPTRT Compliance

Management Area	Multiple Violations per Haul	Total Gear Length	Twine Size	Tie-Down Lengths	Tie-Down Use	Net Length	Unknown Gear Compliance ^a
Southern Mid-Atlantic Large Mesh	0	0	0	0	2	0	0
Southern Mid-Atlantic Small Mesh	7	1	19	0	0	7	9
Mudhole North Large Mesh	0	4	0	0	0	0	0
Mudhole North Small Mesh	0	0	0	0	0	0	0
Mudhole South Large Mesh	1	5	1	0	0	0	5
Mudhole South Small Mesh	0	0	0	0	0	0	0
Waters off New Jersey Large Mesh	0	19	11	0	0	0	17
Waters off New Jersey Small Mesh	0	0	0	0	0	0	0
Totals	8	29	31	0	2	7	31

^a Hauls in the unknown gear compliance category had at least one gear component was not recorded and therefore could not be checked for compliance

NEFOP Pinger Testers

- NEFOP is no longer using their open air pinger testers due to accuracy issues
- Funding to fix or redesign existing pinger testers is unlikely to arise
- Pinger status is still being recorded on all “limited” hauls (those focused on marine mammal observation), and on “complete” (fish-focused) hauls after a take
- The Coast Guard and state enforcement is still using in-water pinger testers

NEFOP Pinger Testers

Condition Code	Definition
0	Unknown
1	No pingers used on gear
2	Audible
3	Inaudible, tested and working
4	Inaudible, tested and not working
5	Inaudible, not tested
6	Absent (lost)
7	Audible, tested, and detected
8	Audible, tested, and not detected
9	Other, described in comments

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NEFOP Pinger Testers

- Difficulty interpreting “Unknown” value
 - Can be used when some gear is lost or not hauled back and it is not known if pingers were present
 - Also used when can't tell which pingers are pinging (some already hauled back on deck, others still coming up)
- Considering standardizing comment field to address “unknowns” .
- Standardized comments could also assess pinger functionality via LED functionality

“Pinger Tester” Values Recorded

2015 (n=4566)

Condition Code	%
Inaudible, not tested	24%
None used	2%
Other	<1%
Unknown	3%
Working (Audible)	71%

Partial 2016 (n=3539)

Condition Code	%
Inaudible, not tested	11%
None used	2%
Unknown	38%
Working (Audible)	48%

Pinger Functionality by Brand

2015

Brand	Inaudible	Unknown	Working	N (sample size)
Airmar	22%	5%	84%	1114
Dukane	2%	0%	98%	125
Fumunda	39%	1%	59%	1620
Unknown	2%	22%	69%	188

Partial 2016

Brand	Inaudible	Unknown	Working	N (sample size)
Airmar	4%	22%	75%	991
Dukane	0%	0%	100%	35
Fumunda	6%	45%	48%	1220
Unknown	3%	50%	46%	106

NEFOP Pinger Testers

- 6 harbor porpoise caught on pinger tester hauls
- All hauls had all required pingers
- 3 hauls had all pingers working
- 1 haul had 1 inaudible pinger (unknown functionality)
- 1 haul had all unknown functionality (couldn't hear because of engine noise and music)
- 1 haul had 4 of unknown functionality
- **No takes directly associated with pinger of unknown functionality**

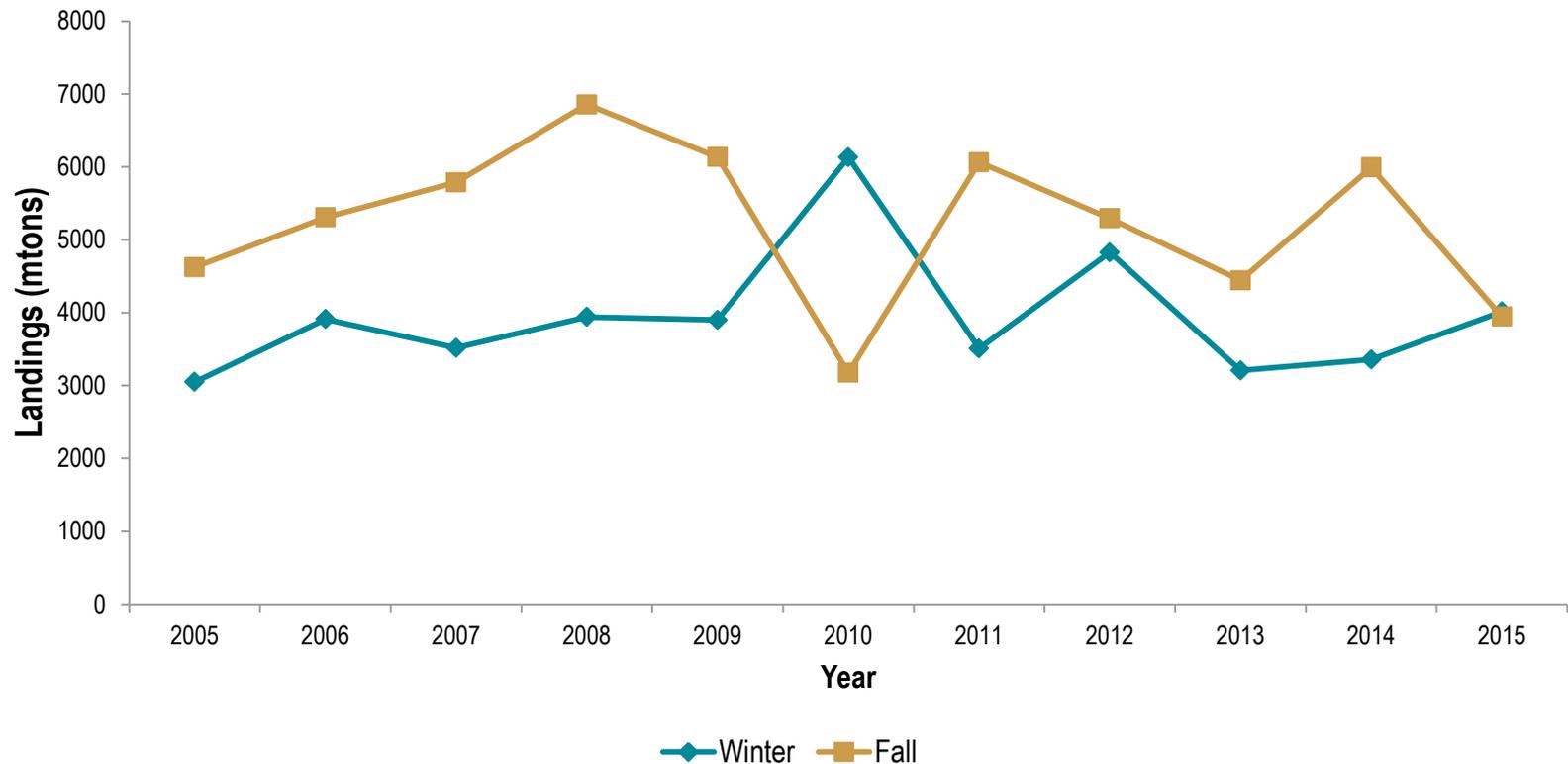
Some Longer Term Trends

Additional Divider Information

General Trends

- Fairly consistent total New England effort during the winter and fall, but effort shifts within New England regions
- Lower New England annual bycatch appears to correlate with increased pinger use
- Harbor porpoise 5-year mean bycatch has been decreasing since 2010

New England Gillnet Effort Shifts Over Time

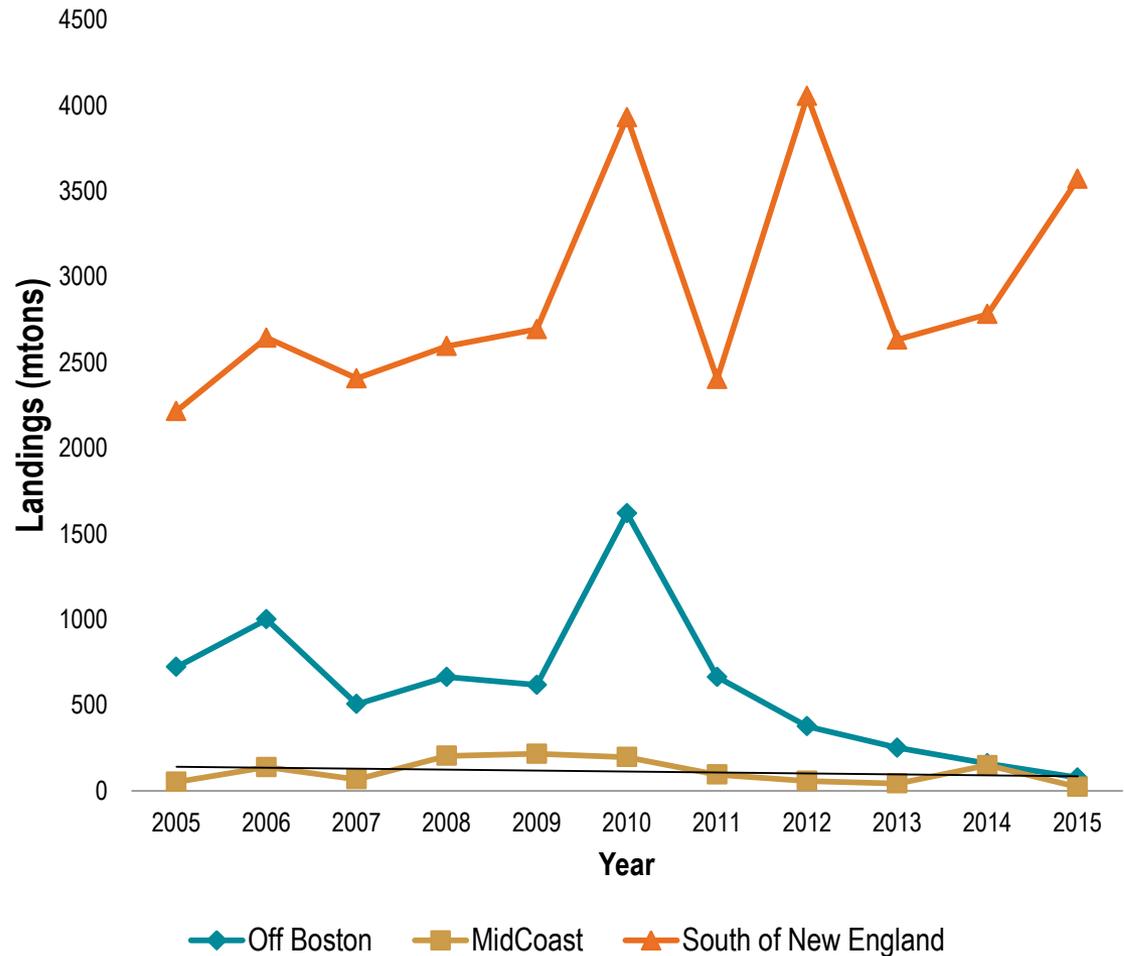


Fairly consistent total landings over time, no apparent trends

New England Gillnet Effort Shifts Over Time

Winter Gillnet Effort
(Pooled portgroups
and management
areas)

- Increasing landings south of New England
- Decreasing off Boston
- Fairly stable in the MidCoast Region

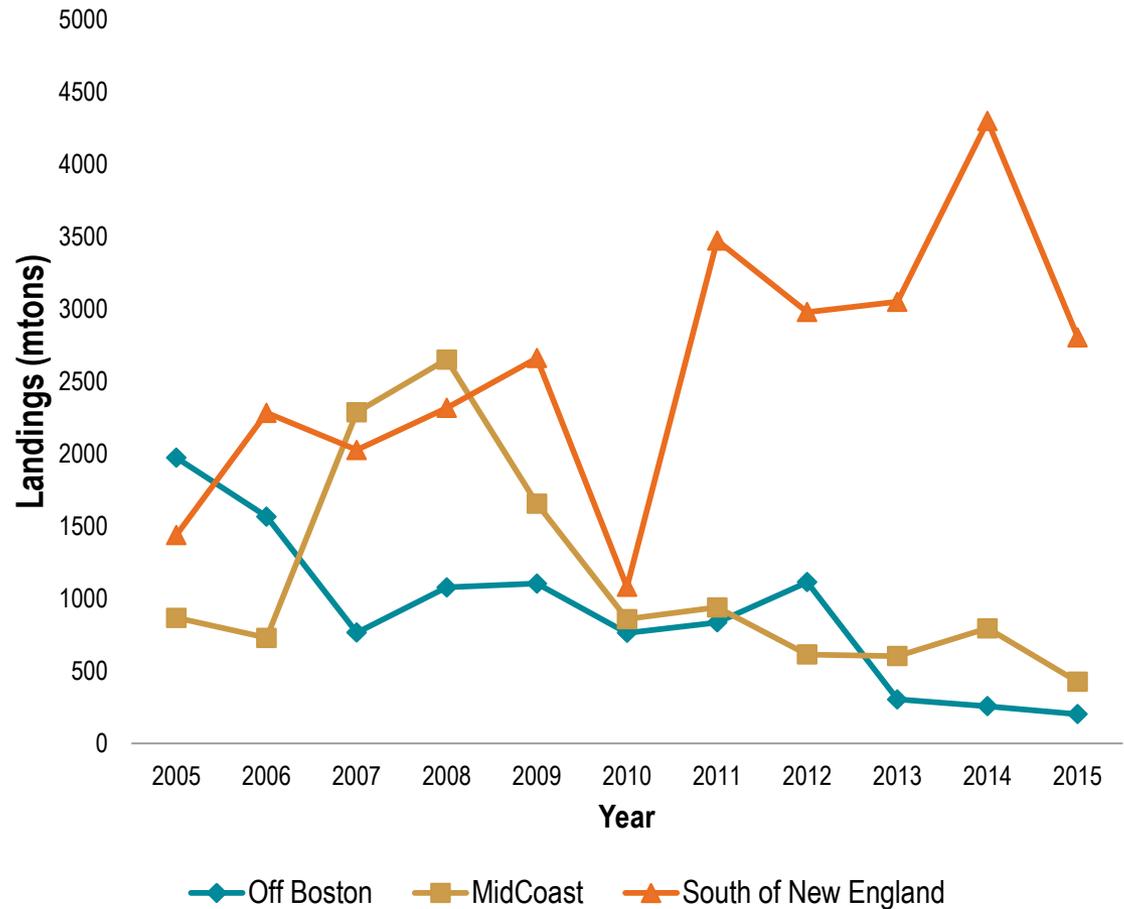


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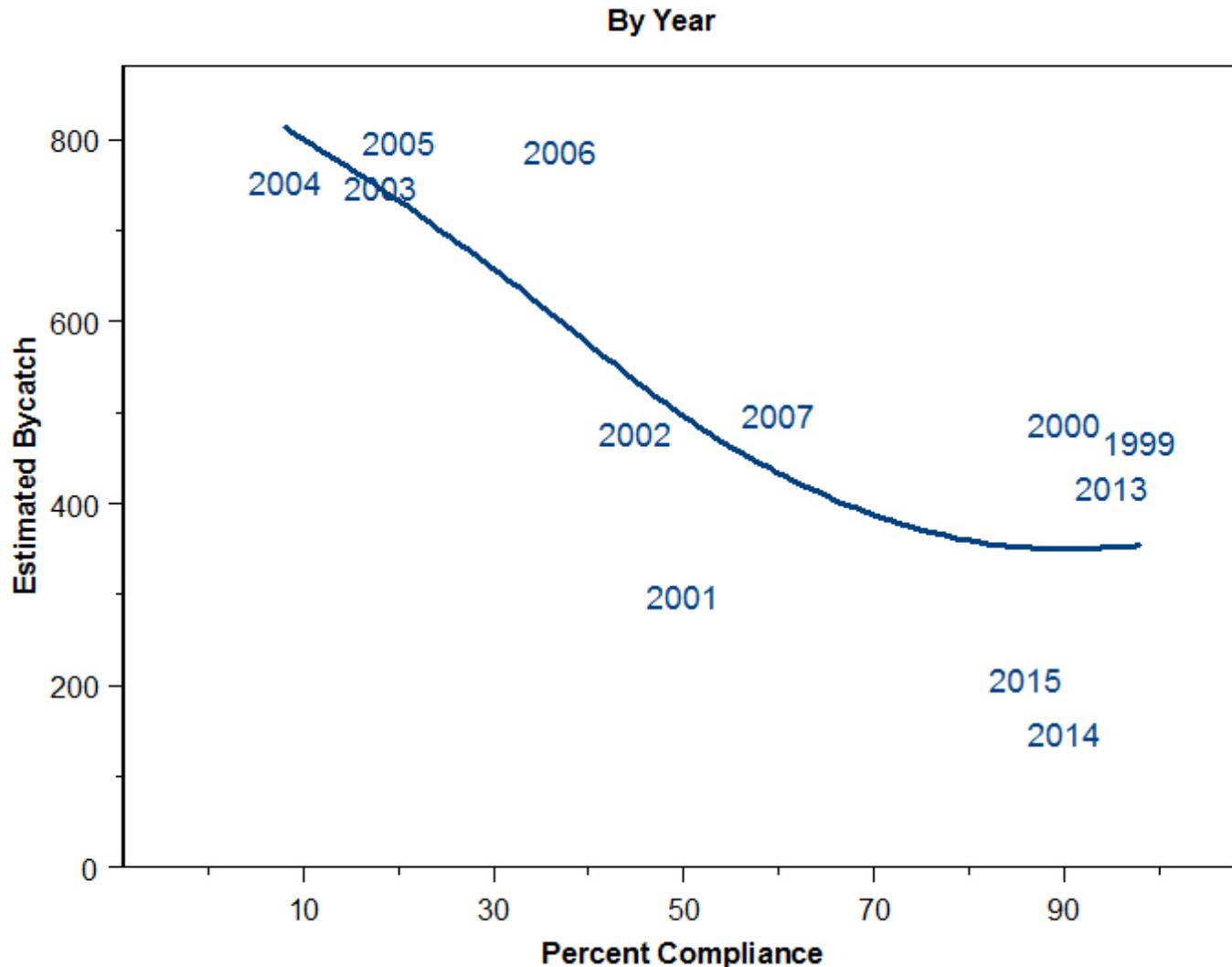
Fall Gillnet Effort

(Pooled portgroups and management areas)

- Increasing landings south of New England
- Decreasing off Boston
- Decreasing trend in the MidCoast Region, or at least down from 2007-2009 peaks

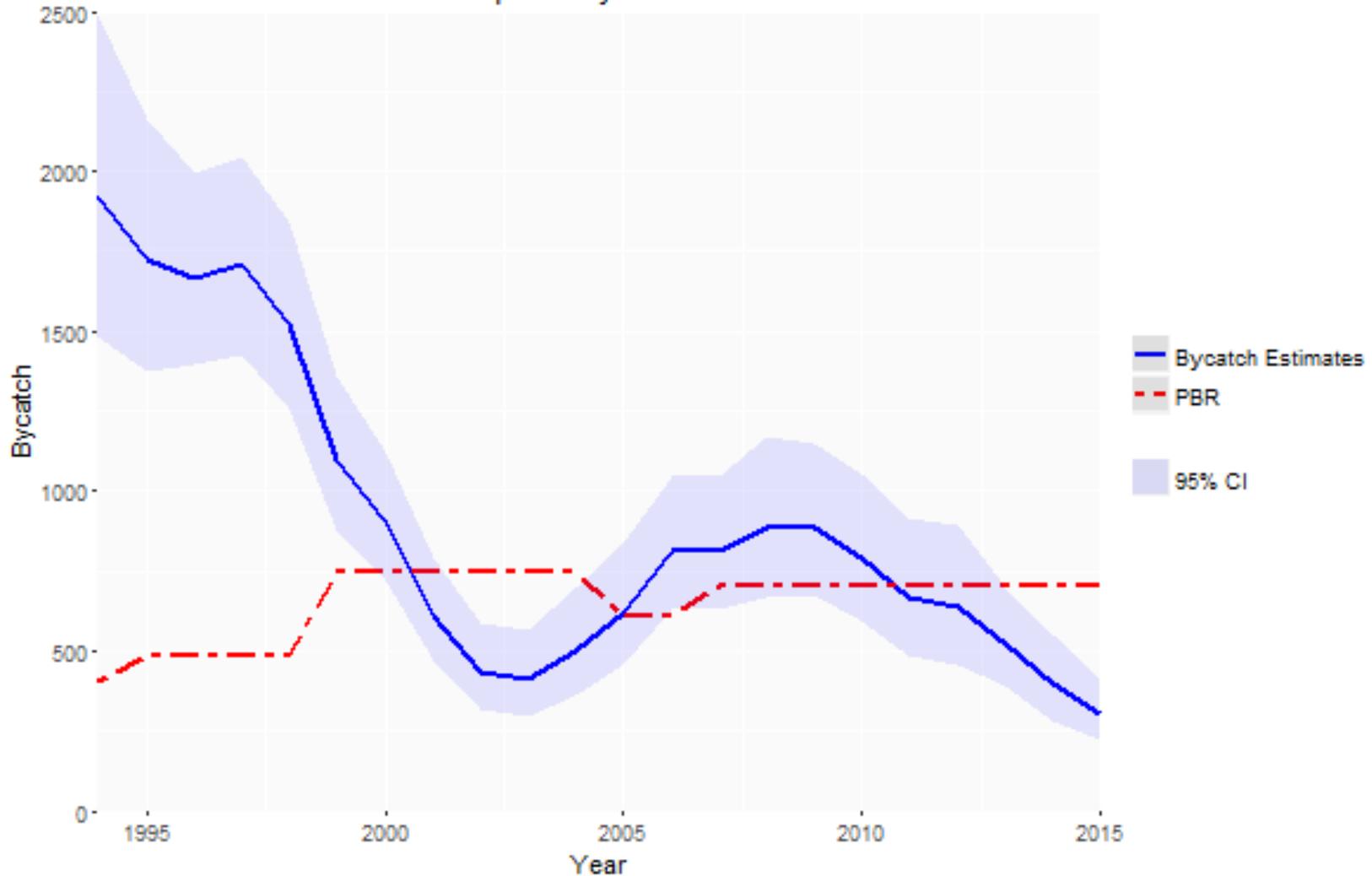


New England Bycatch vs Compliance



Total 5-year Mean Estimated Bycatch since 1994

Harbor Porpoise Bycatch Timeseries



Questions?