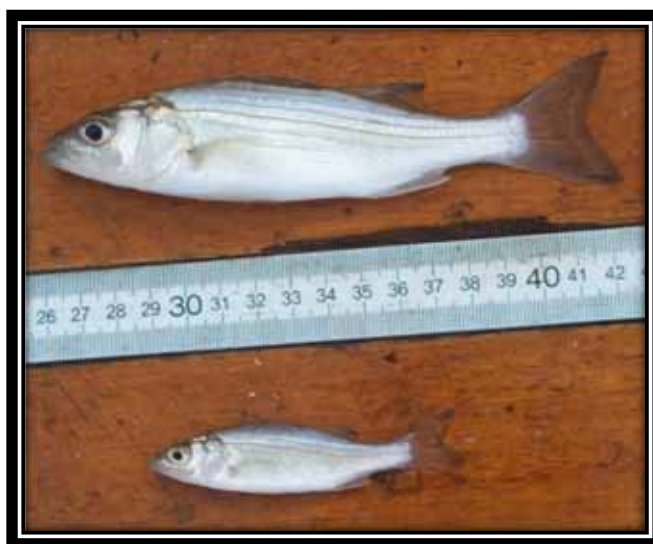


# Data Summary of 2015 Delaware River Seine Survey



From June 16 to November 25, 2015, biologists conducted the Delaware River Seine Survey. Over the course of these six months, crews hauled 304 individual seines. In total, 33,466 fish were caught, averaging 110 fish per haul. The five most abundant species caught were: bay anchovy, American shad, blueback herring, Atlantic silversides and banded killifish. New regulations were put in place in 2012 due to concerns about the significant coastwide decline of river herring stocks. Survey data for 2015 shows American shad and blueback herring as the second and third (respectively) most abundant fish caught – a positive outcome of the management actions enacted.



The primary target species of this survey is striped bass. In 2015, this species was the eleventh most abundant fish caught. In total, 880 striped bass were caught and 718 of those were young-of-year striped bass. This means that 82% of the striped bass caught were less than 1 year old. This is a positive reflection of the spawning success of this species in the Delaware estuary.

SPECIES NAME	TOTAL # CAUGHT	RELATIVE ABUNDANCE (%)
Bay Anchovy	6,427	19.205%
American Shad	5,627	16.814%
Blueback Herring	4,417	13.198%
Atlantic Silverside	3,879	11.591%
Banded Killifish	2,262	6.759%
White Perch	2,071	6.188%
Mummichog	1,886	5.636%
Eastern Silvery Minnow	1,771	5.292%
Spottail Shiner	1,212	3.622%
Atlantic Menhaden	1,073	3.206%
Striped Bass	881	2.633%
Tessellated Darter	458	1.369%
Rough Silverside	402	1.201%
Alewife	328	0.980%
Gizzard Shad	189	0.565%
Hogchoker	174	0.520%
Bluefish	71	0.212%
Blue Crab	64	0.191%
Channel Catfish	53	0.158%
Atlantic Croaker	31	0.093%
White Sucker	25	0.075%
American Eel	20	0.060%
Inland Silverside	19	0.057%
Yellow Perch	18	0.054%
Black Drum	14	0.042%
Banded Sunfish	10	0.030%
Pumpkinseed Sunfish	10	0.030%
Brown Bullhead	9	0.027%
Atlantic Needlefish	8	0.024%
Bluegill Sunfish	7	0.021%
Crevalle Jack	7	0.021%
Largemouth Bass	7	0.021%
Carp	5	0.015%
Spot	5	0.015%
Black Bullhead	4	0.012%
Striped Anchovy	3	0.009%
Summer Flounder	3	0.009%
Bowfin	2	0.006%
Hickory Shad	2	0.006%
Scup	2	0.006%
Weakfish	2	0.006%
Golden Shiner	1	0.003%
Goldfish	1	0.003%
Gray Snapper	1	0.003%
Smallmouth Bass	1	0.003%
Spotfin Shiner	1	0.003%
Striped Killifish	1	0.003%
Walleye	1	0.003%
White Catfish	1	0.003%
<b>Grand Total</b>	<b>33,466</b>	<b>100.000%</b>

During 2015, several species yielded significantly lower catches than in 2014. These decreases **do not** mean that the species are at risk – some of these species had higher than normal catches during 2014. The table below shows which species had the most significant decreases:

TOTAL NUMBER CAUGHT			
SPECIES	2014	2015	% DECREASE
Bluegill Sunfish	67	7	89.55
Weakfish	17	2	88.24
Golden Shiner	8	1	87.50
Striped Killifish	6	1	83.33
Atlantic Menhaden	4,325	1,073	75.19
Smallmouth Bass	4	1	75.00
Gizzard Shad	633	189	70.14
Pumpkinseed Sunfish	31	10	67.74
Atlantic Croaker	94	31	67.02
Summer Flounder	9	3	66.67
White Catfish	3	1	66.67
Eastern Silvery Minnow	4987	1771	64.49
White Perch	5680	2071	63.54
Yellow Perch	47	18	61.70
Striped Bass	2135	881	58.74
Blue Crab	140	64	54.29
Spottail Shiner	2477	1212	51.07

During 2015, several species yielded higher than normal catches. Some increases could be a result of low numbers caught in 2014. In addition, sampling limitations yielded 304 hauls during the 2015 sampling season. This was 20 more hauls than completed in 2014. The table below lists the species with the greatest increases:

TOTAL NUMBER CAUGHT		
SPECIES	2014	2015
Bay Anchovy	3,453	6,427
Atlantic Silverside	1,581	3,879
Mummichog	783	1,886
Alewife	172	328



All water quality parameters for 2015 were within normal range. Water temperatures ranged from 9.1 to 30 degrees Celsius. Dissolved oxygen levels ranged from 3.4 to 9.9 milligrams per liter. Salinity values ranged from 0 to 10.3 parts per thousand.

Setbacks which occurred during 2015 sampling were due to staff limitations, bad weather (such as wind and tidal surges) and dredging/beach replenishment.



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