

Data Summary of 2014 Delaware River Seine Survey



From June 16 to November 13, 2014, biologists conducted the Delaware River Seine Survey. Over the course of these six months, crews hauled 284 individual seines. In total, 45,178 fish were caught, averaging 159 fish per haul. The five most abundant species caught were: American shad, blueback herring, white perch, Eastern silvery minnow and bay anchovy.

The primary target species of this survey is striped bass. In 2014, this species was the ninth most abundant fish caught. In total, 2,135 striped bass were caught and 2,070 of those were young-of-year striped bass. This means that 97% 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 (%)
American Shad	7,208	15.955%
Blueback Herring	6,504	14.396%
White Perch	5,680	12.572%
Eastern Silvery Minnow	4,987	11.039%
Atlantic Menhaden	4,325	9.573%
Bay Anchovy	3,453	7.643%
Banded Killifish	3,140	6.950%
Spottail Shiner	2,477	5.483%
Striped Bass	2,135	4.726%
Atlantic Silverside	1,581	3.499%
Tessellated Darter	887	1.963%
Mummichog	783	1.733%
Gizzard Shad	633	1.401%
Rough Silverside	356	0.788%
Alewife	172	0.381%
Blue Crab	140	0.310%
Hogchoker	113	0.250%
Bluefish	111	0.246%
Atlantic Croaker	94	0.208%
Channel Catfish	79	0.175%
Bluegill Sunfish	67	0.148%
Yellow Perch	47	0.104%
Pumpkinseed Sunfish	31	0.069%
American Eel	30	0.066%
Weakfish	17	0.038%
Black Drum	16	0.035%
White Sucker	15	0.033%
Green Sunfish	12	0.027%
Carp	9	0.020%
Summer Flounder	9	0.020%
Black Bullhead	8	0.018%
Golden Shiner	8	0.018%
Largemouth Bass	7	0.015%
Striped Anchovy	6	0.013%
Striped Killifish	6	0.013%
Spot	5	0.011%
Atlantic Needlefish	4	0.009%
Four-spined Stickleback	4	0.009%
Naked Goby	4	0.009%
Smallmouth Bass	4	0.009%
White Catfish	3	0.007%
Catfish Species	2	0.004%
Black Crappie	1	0.002%
Hickory Shad	1	0.002%
Silver Perch	1	0.002%
Southern Kingfish	1	0.002%
Spotfin Shiner	1	0.002%
White Crappie	1	0.002%
Grand Total	45,178	100.000%

During 2014, several species yielded significantly lower catches than in 2013. These decreases **do not** mean that the species are at risk – some of these species had higher than normal catches during 2013. In addition, sampling limitations yielded only 284 hauls during the 2014 sampling season. This was 27 less hauls than completed in 2013.

The table below shows which species had the most significant decreases:

TOTAL NUMBER CAUGHT

SPECIES	2013	2014	% DECREASE
Atlantic Menhaden	33,837	4,325	87.22
Golden Shiner	42	8	80.95
Spot	22	5	77.27
White Sucker	47	15	68.09
Bay Anchovy	10,772	3,453	67.94
Pumpkinseed Sunfish	76	31	59.21
Hogchoker	244	113	53.69
Black Crappie	2	1	50.00

During 2014, several species yielded higher than normal catches. Some increases could be a result of low numbers caught in 2013. New regulations were put in place in 2012 due to concerns about the significant coastwide decline of river herring stocks. Survey data for 2014 shows a continued positive increase in catches of blueback herring.

The table below lists the species with the greatest increases:

TOTAL NUMBER CAUGHT

SPECIES	2013	2014
Blueback Herring	2,148	6,504
Eastern Silvery Minnow	1,889	4,987
White Perch	2,896	5,680
Striped Bass	846	2,135
Spottail Shiner	1,809	2,477
Tessellated Darter	458	887
Atlantic Silverside	1,259	1,581
Mummichog	539	783
Gizzard Shad	433	633
Alewife	16	172



All water quality parameters for 2014 were within normal range. Water temperatures ranged from 12.4 to 29 degrees Celsius. Dissolved oxygen levels ranged from 4.5 to 9.3 milligrams per liter. Salinity values ranged from 0 to 9.6 parts per thousand.

Setbacks which occurred during 2014 sampling were due to staff limitations, bad weather (such as wind and tidal surges) and dredging/beach replenishment. Biologists are hopeful that 2015 will be another successful sampling year!



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