

Data Summary of 2017 Delaware River Seine Survey

From June 20 to November 3, 2017, biologists conducted the Delaware River Seine Survey. Over the course of these six months, crews hauled 286 individual seines. In total, 28,461 fish were caught, averaging 99 fish per haul. The five most abundant species caught were: American shad, banded killifish, white perch, bay anchovy and blueback herring.



The primary target species of this survey is striped bass. In 2017, this species was the seventh most abundant fish caught. In total, 1,486 striped bass were caught and 1,354 of those were young-of-year striped bass. This means that 91% of the striped bass caught were less than 1 year old.



Species Name	Total # Caught	Relative Abundance (%)
American Shad	6,108	21.461%
Banded Killifish	4,443	15.611%
White Perch	3,470	12.192%
Bay Anchovy	2,495	8.766%
Blueback Herring	2,442	8.580%
Atlantic Menhaden	2,185	7.677%
Striped Bass	1,486	5.221%
Spottail Shiner	1,461	5.133%
Eastern Silvery Minnow	1,093	3.840%
Atlantic Silverside	966	3.394%
Mummichog	684	2.403%
Hogchoker	295	1.037%
Tessellated Darter	288	1.012%
Rough Silverside	215	0.755%
Blue Crab	165	0.580%
Atlantic Croaker	104	0.365%
Bluefish	90	0.316%
Channel Catfish	90	0.316%
Gizzard Shad	78	0.274%
Alewife	55	0.193%
Pumpkinseed Sunfish	27	0.095%
Black Drum	22	0.077%
Bluegill Sunfish	22	0.077%
Carp	17	0.060%
Herring Species	17	0.060%
American Eel	16	0.056%
Weakfish	14	0.049%
Largemouth Bass	13	0.046%
Striped Anchovy	11	0.039%
Yellow Perch	11	0.039%
Silver Perch	10	0.035%
Inland Silverside	7	0.025%
White Sucker	7	0.025%
Golden Shiner	6	0.021%
Redbreast Sunfish	6	0.021%
Striped Killifish	6	0.021%
Black Bullhead	5	0.018%
Spotfin Shiner	4	0.014%
Spot	3	0.011%
White Catfish	3	0.011%
Crevalle Jack	2	0.007%
Shiner/Minnow Species	2	0.007%
Silverside Species	2	0.007%
Southern Kingfish	2	0.007%
Banded Sunfish	1	0.004%
Black Crappie	1	0.004%
Bowfin	1	0.004%
Brown Bullhead	1	0.004%
Four-spined Stickleback	1	0.004%
Goldfish	1	0.004%
Hickory Shad	1	0.004%
Naked Goby	1	0.004%
Northern Snakehead	1	0.004%
Shiner Species	1	0.004%
Striped Mullet	1	0.004%
Summer Flounder	1	0.004%
White Mullet	1	0.004%
Grand Total	28,461	100.000%

During 2017, several species yielded significantly lower catches than in 2016. These decreases **do not** mean that the species are at risk – some of these species had higher than normal catches during 2016. The table below shows which species had the most significant decreases:

TOTAL NUMBER CAUGHT			
Species	2016	2017	% Decrease
Gizzard Shad	365	78	78.63
Bluegill Sunfish	73	22	69.86
Atlantic Silverside	2,464	966	60.80
American Eel	36	16	55.56
Blue Crab	328	165	49.70
Bay Anchovy	4,922	2,495	49.31
Atlantic Croaker	163	104	36.20
Bluefish	126	90	28.57

During 2017, several species yielded higher than normal catches. Some increases could be a result of sparse numbers caught in 2016. Two species of high concern, American shad and blueback herring, had much higher catches during 2017 than 2016. This could be a result of the fishing moratorium put in place in 2013. Time, and more sampling, will show if this was a one-year improvement, or an overall increase in population size for these species. The table below lists the species with the greatest increases:

TOTAL NUMBER CAUGHT		
Species	2016	2017
American Shad	548	6,108
Banded Killifish	3,849	4,443
White Perch	1,940	3,470
Blueback Herring	721	2,442
Atlantic Menhaden	1,449	2,185
Spottail Shiner	944	1,461



All water quality parameters for 2017 were within normal range. Water temperatures ranged from 14.1 to 29.2 degrees Celsius. Dissolved oxygen levels ranged from 4.9 to 9.9 milligrams per liter. Salinity values ranged from 0 to 8.2 parts per thousand. pH was also collected for the second year. Normal ranges for the Delaware River will be determined after a few years of collecting this data. However, all data collected averaged 9.0, which is considered more basic than acidic.

Setbacks which occurred during 2017 sampling were due to staff limitation and severe weather (such as wind and tidal surges).

