

Data Summary of the 2018 Delaware River Seine Survey

From June 19 to October 23, 2018, biologists conducted the Delaware River Seine Survey. Over the course of these five months, crews hauled 285 individual seines. In total, 30,012 fish were caught, averaging 105 fish per haul. The five most abundant species caught were: American shad, banded killifish, white perch, blueback herring and spottail shiners.



The primary target species of this survey is striped bass. In 2018, this species was the seventh most abundant fish caught. In total, 1,490 striped bass were caught and 1,453 of those were young-of-year striped bass. This means that 98% of the striped bass caught were less than 1 year old.



Species Name	Total # Caught	Relative Abundance (%)
American Shad	6,909	23.021%
Banded Killifish	4,463	14.871%
White Perch	4,428	14.754%
Blueback Herring	3,815	12.712%
Spottail Shiner	2,012	6.704%
Atlantic Menhaden	1,628	5.424%
Striped Bass	1,490	4.965%
Eastern Silvery Minnow	1,357	4.522%
Bay Anchovy	1,067	3.555%
Tessellated Darter	534	1.779%
Mummichog	464	1.546%
Atlantic Silverside	461	1.536%
Alewife	354	1.180%
Gizzard Shad	303	1.010%
Rough Silverside	156	0.520%
Blue Crab	104	0.347%
Carp	92	0.307%
Hogchoker	82	0.273%
Channel Catfish	44	0.147%
Bluegill Sunfish	42	0.140%
Pumpkinseed Sunfish	32	0.107%
White Sucker	28	0.093%
Bluefish	21	0.070%
Comely Shiner	20	0.067%
Golden Shiner	18	0.060%
American Eel	14	0.047%
Atlantic Croaker	14	0.047%
Yellow Perch	11	0.037%
Spotfin Shiner	9	0.030%
Largemouth Bass	9	0.030%
Spot	4	0.013%
Goldfish	4	0.013%
Weakfish	3	0.010%
Redbreast Sunfish	3	0.010%
Smallmouth Bass	3	0.010%
Inland Silverside	2	0.007%
Four-spined Stickleback	2	0.007%
Crevalle Jack	2	0.007%
Atlantic Needlefish	1	0.003%
Northern Snakehead	1	0.003%
White Catfish	1	0.003%
Summer Flounder	1	0.003%
Black Drum	1	0.003%
Northern Hogsucker	1	0.003%
Rock Bass	1	0.003%
Hickory Shad	1	0.003%
Grand Total	30,012	100.000%

During 2018, several species yielded significantly lower catches than in 2017. These decreases **do not** mean that the species are at risk – some of these species had higher than normal catches during 2017. The table below shows which species had significant decreases:

TOTAL NUMBER CAUGHT			
Species	2017	2018	% Decrease
Black Drum	22	1	95.45
Atlantic Croaker	104	14	86.54
Weakfish	14	3	78.57
Bluefish	90	21	76.67
Bay Anchovy	2495	1067	57.23
Atlantic Silverside	966	461	52.28
Blue Crab	165	104	36.97
Atlantic Menhaden	2185	1628	25.49

Several species yielded higher than normal catches during 2018. Some increases could be a result of sparse numbers caught in 2017. Three species of high concern, American shad, blueback herring and alewife, had much higher catches during 2018 than 2017. 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	2017	2018
American Shad	6,108	6,909
White Perch	3,470	4,428
Blueback Herring	2,442	3,815
Spottail Shiner	1,461	2,012
Alewife	55	354



All water quality parameters for 2018 were within normal range. Water temperatures ranged from 6.2 to 31.9 degrees Celsius. Dissolved oxygen levels ranged from 4.2 to 11.7 milligrams per liter. Salinity values ranged from 0 to 9.0 parts per thousand. pH was collected for the third consecutive year. All pH values collected averaged 7.5, which is considered close to neutral (7.0).

Setbacks which occurred during 2018 sampling were due to staff limitations and severe weather (such as wind and tidal surges).

