

Data Summary of the 2019 Delaware River Seine Survey

From June 18 to November 4, 2019, biologists conducted the Delaware River Seine Survey. Over the course of these six months, crews hauled 286 individual seines. In total, 26,794 fish were caught, averaging 93 fish per haul. The five most abundant species caught were: bay anchovy, white perch, banded killifish, spottail shiner and blueback herring.



The primary target species of this survey is striped bass. In 2019, this species was the ninth most abundant fish caught. In total, 958 striped bass were caught and 841 of those were young-of-year (YOY) striped bass. This means that 88% of the striped bass caught were less than 1 year old. The YOY index (geometric mean) for 2019 was 1.31, which ranks thirteenth highest out of the 40-year time series.



COMMON NAME	TOTAL NUMBER	RELATIVE ABUNDANCE (%)
Bay Anchovy	8,225	30.697%
White Perch	3,939	14.701%
Banded Killifish	2,700	10.077%
Spottail Shiner	1,669	6.229%
Blueback Herring	1,475	5.505%
Eastern Silvery Minnow	1,461	5.453%
Atlantic Menhaden	1,425	5.318%
Mummichog	1,205	4.497%
Striped Bass	958	3.575%
Atlantic Silverside	946	3.531%
Tessellated Darter	673	2.512%
Rough Silverside	526	1.963%
American Shad	522	1.948%
Blue Crab	199	0.743%
Atlantic Croaker	186	0.694%
Gizzard Shad	150	0.560%
Channel Catfish	105	0.392%
Bluegill Sunfish	64	0.239%
Spot	53	0.198%
Yellow Perch	51	0.190%
Bluefish	48	0.179%
Pumpkinseed Sunfish	45	0.168%
Hogchoker	38	0.142%
White Sucker	34	0.127%
Inland Silverside	15	0.056%
American Eel	14	0.052%
Alewife	12	0.045%
Largemouth Bass	11	0.041%
Atlantic Needlefish	9	0.034%
Black Drum	6	0.022%
Comely Shiner	5	0.019%
Golden Shiner	5	0.019%
Carp	4	0.015%
Weakfish	3	0.011%
Goldfish	2	0.007%
Northern Hog Sucker	2	0.007%
Spotfin Shiner	2	0.007%
Summer Flounder	2	0.007%
Chain Pickerel	1	0.004%
Crevalle Jack	1	0.004%
Silver Perch	1	0.004%
Striped Anchovy	1	0.004%
White Catfish	1	0.004%
GRAND TOTAL	26,794	100.00%

During 2019, several species yielded significantly lower catches than in 2018. These decreases **do not** mean that the species are at risk – some of these species had higher than normal catches during 2018. Three species of high concern, American shad, blueback herring and alewife, had much lower catches during 2019 than 2018. Time and more sampling will show if the moratorium put in place in 2013 has benefited these species. The table below shows which species had significant decreases:

TOTAL NUMBER CAUGHT

Species	2018	2019	% Decrease
Alewife	354	12	96.61
American Shad	6909	522	92.44
Blueback Herring	3,815	1475	61.34
Striped Bass	1490	958	35.70
Atlantic Menhaden	1628	1425	12.47
White Perch	4,428	3,939	11.04

Several species yielded higher than normal catches during 2019. Some increases could be a result of sparse numbers caught in 2018. The table below lists the species with the greatest increases:

TOTAL NUMBER CAUGHT

Species	2018	2019
Bay Anchovy	1,067	8,225
Mummichog	464	1,205
Atlantic Silverside	461	946
Rough Silverside	156	526
Atlantic Croaker	14	186



All water quality parameters for 2019 were within normal range. Water temperatures ranged from 13.0 to 30.1 degrees Celsius. Dissolved oxygen levels ranged from 3.9 to 10.6 milligrams per liter. Salinity values ranged from 0 to 8.6 parts per thousand. All pH values collected averaged 8.2, which is considered slightly more basic than neutral (7.0).

Setbacks which occurred during 2019 sampling were due to staff limitations and severe weather (such as wind and tidal surges).

