

Delaware River

Wayne, Pike, Monroe, Northampton, and Bucks counties

2023 Delaware Angler Diaries Summarization

Voluntarily submitted angler diaries recording American Shad catches from the Delaware Basin were received by the Pennsylvania Fish and Boat Commission (PFBC) for the 2023 season. These submissions represent the recent re-initiation of this voluntary diary program. Historical (i.e., 2006 to 2015) voluntary angler submissions tended to be sparse, precluding informative characterization of the American Shad fishery. Presently, diaries are the only resource for fisheries managers to characterize angler use and harvest on the American Shad population. Specifically, these diaries allow managers to quantify different aspects of the fishery such as total catch, catch rates (i.e., released or harvested), length distribution, angler demographics, and spatial-temporal trends of catch. Eventually, trends of angler behaviors (e.g., effort and catch) can be compared to fishery-independent monitoring of adult American Shad in the Delaware River once a sufficient time-series is developed. This can only be investigated through routine angler support by reporting annual catches.

Ideally, diaries would be reported for each angler characterizing each trip. The greater the number of diary participants, the greater the confidence the diary program is suitably representative of the fishery. The minimum target is 30 unique diaries (i.e., recorded by each anglers' unique trip(s)) per season, but 100 to 200 diaries would be optimal. Please note, it is equally important to report trips that shad were not caught as trips when shad were caught. Data from diaries will be used to generate the mean angler catch rate, among other statistics, which are generally reflective of the relative fish abundance affected by the fishery. These then can be compared to fishery-independent time-series data to provide insight to the magnitude of the fishery relative to the population. We are greatly appreciative of voluntary angler submissions and strongly encourage anglers to continue participating for the 2024 and future seasons to expand on the data reported in 2023. An online form is available at this link: https://www.pa.gov/content/dam/copapwp-pagov/en/fishandboat/documents/about-us/agencyoverview/fisheries-mgmt-plans/delaware_river_journal.pdf

In 2023, a total of 18 diaries were received, representing 28 unique anglers. Collectively, a total of 1,985 hours were spent fishing for American Shad from March 1 to June 13, 2023. During this time 5,396 American Shad were reported caught with only 49 fish being reported as harvested. Fishing was reported occurring from Yardley, PA to Tusten, NY (Table 1). On average, anglers caught 2.7 fish/h (i.e., 1 fish per approx. 22 minutes spent fishing), varying between a minimum of 0.4 fish/h (i.e., 1 fish per approx. 171 minutes spent fishing) to a maximum of 5.9 fish/h (i.e., 1 fish per approx. 10 minutes spent fishing). This average catch can be compared to the mean catch conducted by PFBC at Smithfield Beach each spring (Figure 1). At this time no inferences can be made with only one year's worth of data. Delaware anglers reported American Shad from 10 to 25 inches total length; comparable to the size range caught by PFBC in 2023.

Table 1. Reach fished and catch (N) of American Shad for March, April, May, and June 2023 as reported by anglers in the Delaware Angler Diaries.

Reach	Catch (N)			
	March	April	May	June
Yardley	13	76	56	-
Washingtons Crossing/ New Hope	-	300	-	-
Bulls Island/ Lumberville	11	103	53	-
Byram	0	60	-	-
Frenchtown	18	36	-	-
Riegelsville	0	168	26	-
Raubsville	-	971	-	-
Easton	8	784	410	-
Belvedere	-	46	-	-
Portland	-	168	335	-
Shawnee	-	688	34	-
Smithfield	-	16	21	-
Dingmans Ferry	-	-	4	-
Milford	53	723	140	-
Tenmile River	-	-	-	29
Not listed	-	44	4	-
Total	103	4,183	1,083	29

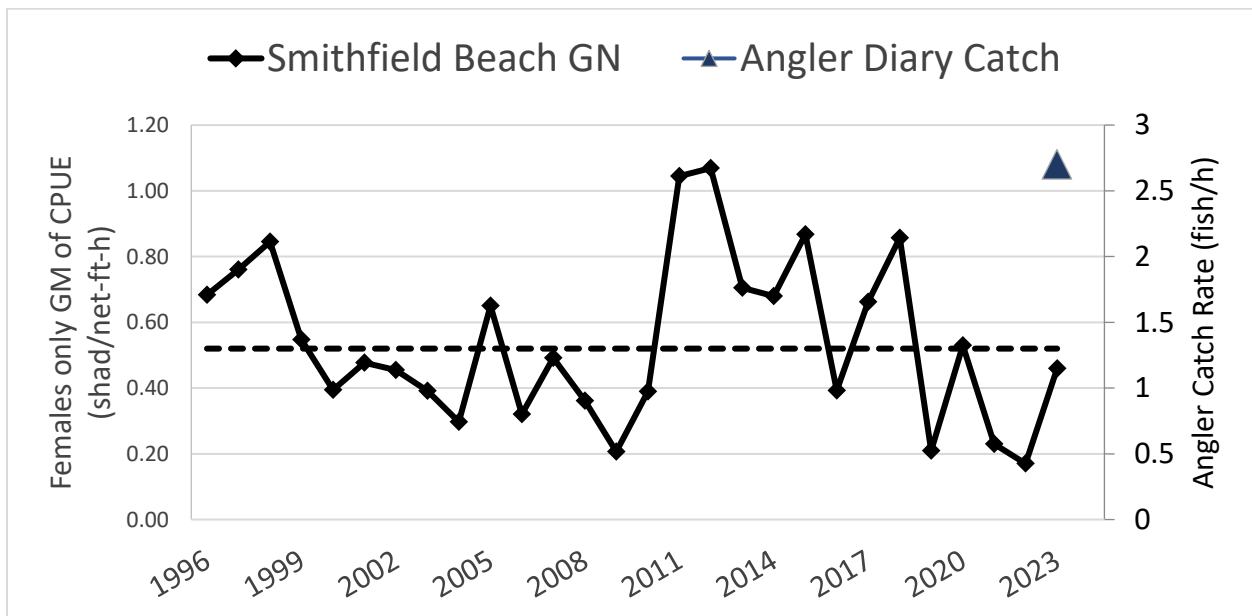


Figure 1. Annual geometric means of catch-per-unit-of-effort (fish/net-ft-h) for adult female American Shad during the spawning run at Smithfield Beach (RM 218), Delaware River main stem, 1996 to 2023 compared to the 2023 angler diary average catch rate (fish/h.).

Overall, the diaries were suggestive of a catch-and-release fishery. Only 1% of the total catch was harvested. From the received reports, only seven of the 28 participants in the diary program reported harvesting shad. While harvest appears to be a component of the fishery, it is unknown if this interpretation is representative of the fishery rather than the diary participants given the limited angler diary participation. A better interpretation of the fishery can be made over an expanded time series with increased participation in the Delaware angler diary program. Angler diaries can be sent electronically to a biologist through email at cbarshinge@pa.gov or through the U.S. Postal Service to:

Pennsylvania Fish and Boat Commission
Attn: Cooper Barshinger
PO BOX 155
Bushkill, PA 18324

The PFBC is thankful for those who have volunteered this information in the past and encourages all anglers, no matter their experience or success rate, to report their experience through the Delaware angler diary form.

Cooper Barshinger
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