

Supplemental Material

Table S1

Recovery for laboratory water sample processing.

Spiking #	Recovered	Type
48	42	Beads
25	24	PVC fragments
21	14	Film fragments

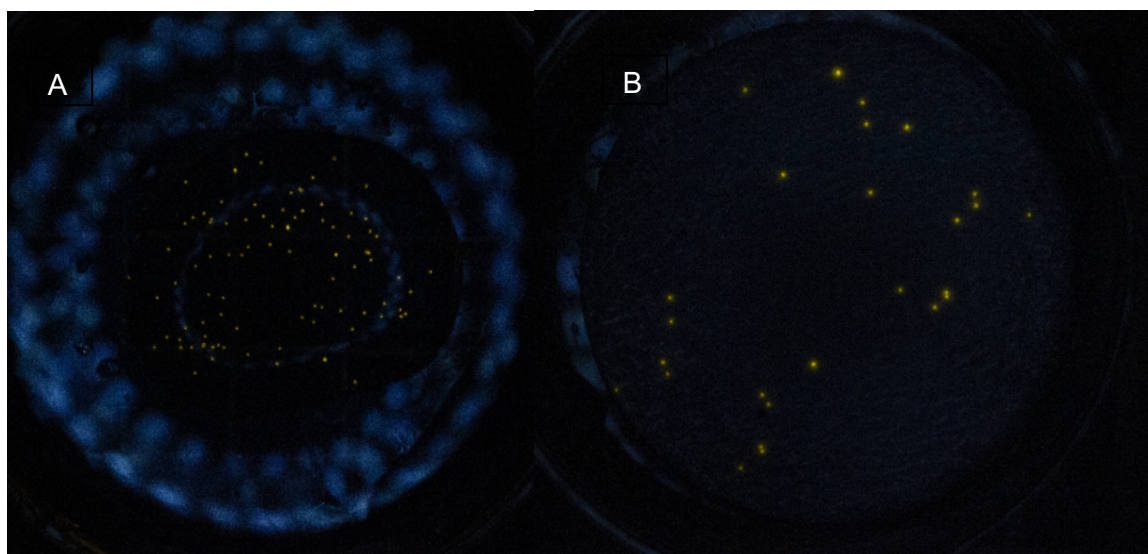


Fig. S1. Spiked sample (92 beads) for determination of sediment processing recovery efficiency (A). Beads are 93 μ m. Recovered spiked beads – 26 (B).

Table S2

Field and laboratory blanks quantifying contamination at multiple steps. Blanks were performed using all materials and procedures in the absence of environmental sample.

Date	Type	Microplastic Count
12/23/2024	Sediment Lab	84
10/11/2024	Sediment Lab	13
2/11/2025	Sediment Lab	4
6/7/2024	Water Lab	27
6/11/2024	Water Lab	6
6/27/2024	Water Lab	1
7/8/2024	Water Lab	10
7/15/2024	Water Lab	1
6/27/2023	Net Blank	63

5/31/2023	Spray Bottle	4
6/27/2023	Spray Bottle	8

Table S3

Outliers removed from the sediment dataset.

Position	Transect	Season	Sample Date	Depth (m)	Plastic/g
West	Lower	Fall	9/15/2022	subtidal	10.41
West	Lower	Summer	6/27/2023	0.5	24.24
West	Lower	Spring	5/18/2022	inland	42.65
West	Middle	Summer	6/27/2023	0.5	7.21
East	Lower	Fall	10/21/2022	N/A	23.24
East	Lower	Spring	5/18/2022	inland	123.43
East	Middle	Summer	6/2/2022	N/A	5.39
East	Middle	Fall	9/15/2022	intertidal	10.08
East	Middle	Fall	10/3/2023	intertidal	16.3
Channel	Middle	Fall	9/15/2022	N/A	9.58
Channel	Upper	Fall	11/6/2022	5	86.11
N/A	Middle	Winter	3/2/2023	intertidal	17.39

Table S4

Outliers removed from the water dataset.

Position	Transect	Season	Sample Date	Depth (m)	Plastic/L
East	Lower	Summer	6/2/2022	0.5	15.33
East	Upper	Winter	3/2/2023	0.5	17.31
West	Lower	Summer	6/2/2022	0.5	10.76
West	Upper	Fall	11/6/2022	0.5	7.6

Table S5

Characteristics of USGS station 1491000 located on the Choptank River near Greensboro, MD.

Element	Location
Agency	U.S. Geological Survey
Site ID	1491000
Site name	Choptank River near Greensboro, MD
Site type	Stream
Decimal latitude	38.99719444
Decimal longitude	-75.7858056
District	Maryland
County	Caroline
Country	U.S.

Altitude of gage/land surface	0.83m
Method altitude determined	Interpolated from Digital Elevation Model
Altitude accuracy	0.03 m
Drainage area	292.67 km

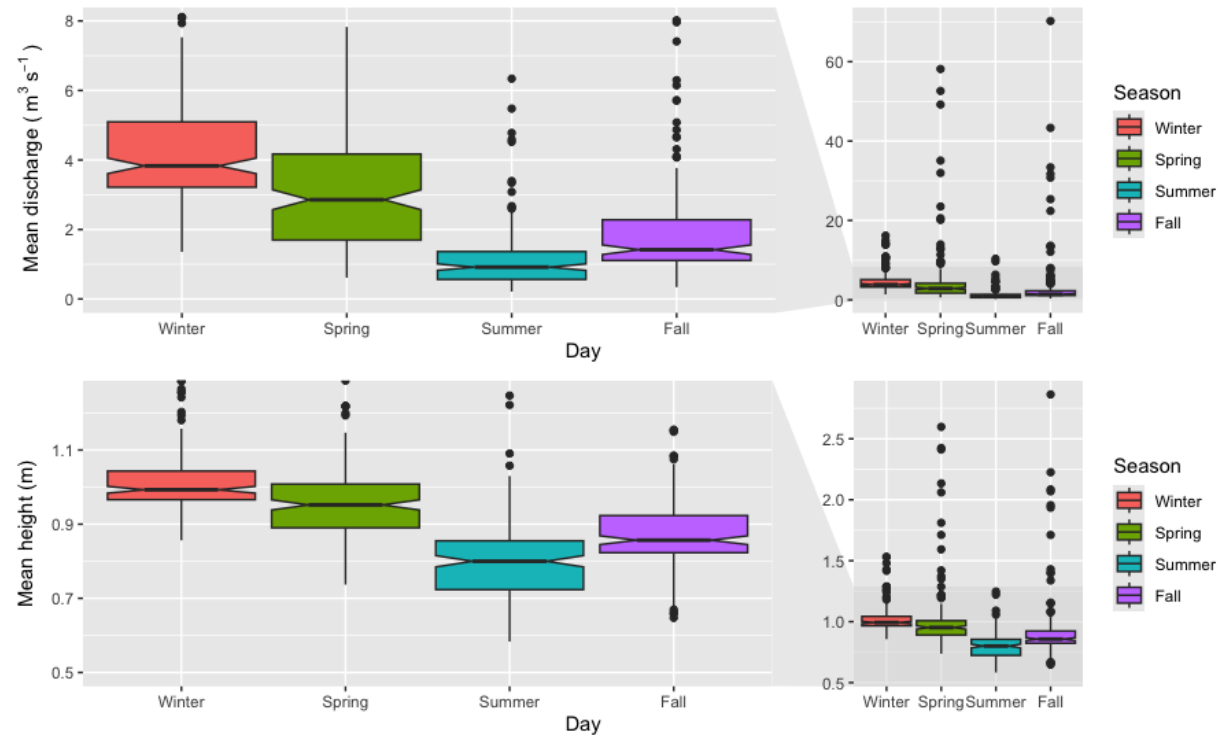


Fig. S2. Mean seasonal discharge (top) averaged over 15 minute increments and (bottom) mean seasonal water height averaged over 15 minute increments.

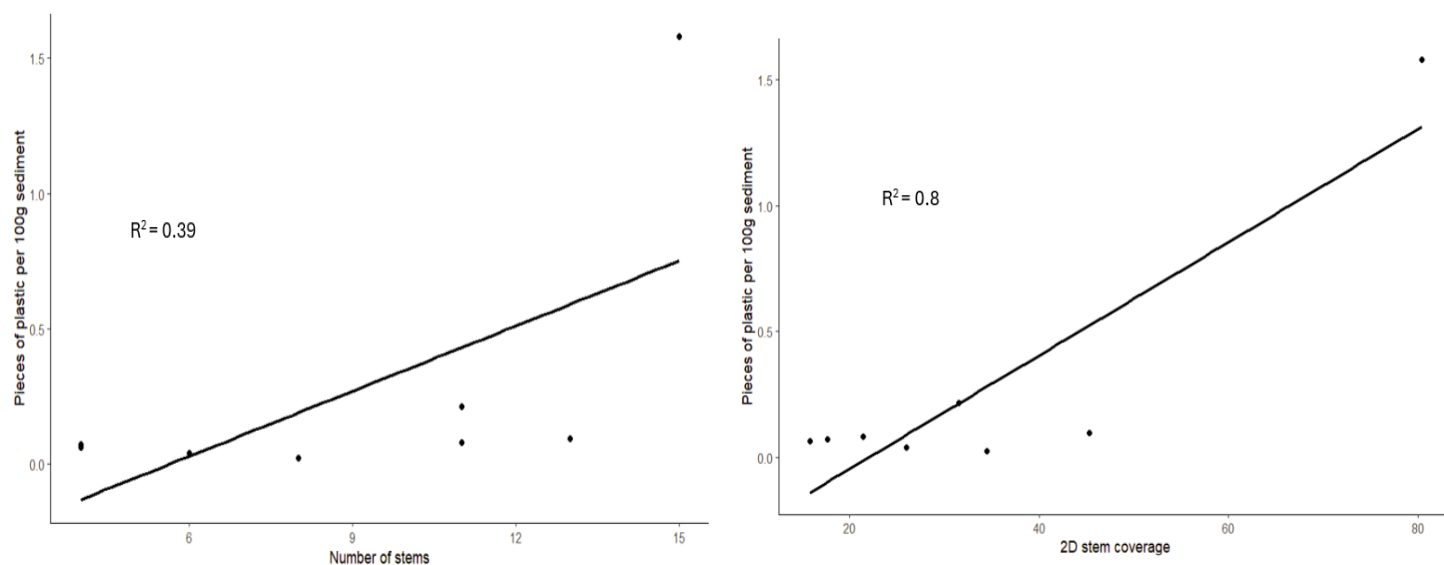


Fig. S3. Correlation between sedimentary microplastic concentration and (left) number of stems and (right) two-dimensional stem coverage calculated by the area of a circle based on measured diameter and number of stems.