

Supplementary Material

Distributions of Microplastics in Surface Water, Fish, and Sediment in the Vicinity of a Sewage Treatment Plant

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Table S1. Size distribution of microplastic in upstream, effluent, Yangjaechon and downstream of Tanchon stream, South Korea.

	Sites	Period (2019)	Size				Total
			0.1–0.3 mm	0.3–0.6 mm	0.6–1.0 mm	1.0–5.0 mm	
Upstream	Water	Apr	11(22.0)	9(18.0)	6(12.0)	2(4.0)	50(100)
		Aug	11(22.0)	5(10.0)	3(6.0)	3(6.0)	
	Fish	Apr	22(43.1)	21(41.2)	4(7.8)	4(7.8)	51(100)
	Sediment	Apr	49(66.2)	19(25.7)	4(5.4)	2(2.7)	74(100)
Effluent	Water	Apr	16(15.7)	2(2.0)	-	-	102(100)
		Aug	26(25.5)	26(25.5)	20(19.6)	12(11.8)	
Yangjaechon	Water	Apr	16(29.1)	6(10.9)	1(1.8)	2(3.6)	55(100)
		Aug	14(25.5)	13(23.6)	-	3(5.5)	
Downstream	Water	Apr	34(16.2)	18(8.6)	8(3.8)	3(1.4)	210(100)
		Aug	53(25.2)	66(31.4)	19(9.0)	9(4.3)	
	Fish	Apr	37(42.5)	34(39.1)	10(11.5)	6(6.9)	87(100)
	Sediment	Apr	28(54.9)	8(15.7)	10(19.6)	5(9.8)	51(100)

Table S2. Shape distribution of microplastic in upstream, effluent, Yangjaechon and downstream of Tanchon stream, South Korea.

	Sites	Period (2019)	Shape			Total
			bead	fiber	fragment	
Upstream	Water	Apr	1(2.0)	3(6.0)	24(48.0)	50(100)
		Aug	-	1(2.0)	21(42.0)	
	Fish	Apr	-	3(5.9)	48(94.1)	51(100)
	Sediment	Apr	-	3(4.1)	71(95.9)	74(100)
Effluent	Water	Apr	1(1.0)	1(1.0)	16(15.7)	102(100)
		Aug	-	8(7.8)	76(74.5)	
Yangjaechon	Water	Apr	-	5(9.1)	20(36.4)	55(100)
		Aug	-	2(3.6)	28(50.9)	
Downstream	Water	Apr	-	3(1.4)	60(28.6)	210(100)
		Aug	-	7(3.3)	140(66.7)	
	Fish	Apr	-	1(1.1)	86(98.9)	87(100)
	Sediment	Apr	-	1(2.0)	50(98.0)	51(100)

Table S3. Chemical compositions of microplastic in upstream, effluent, Yangjaechon and downstream of Tanchon stream, South Korea.

	Sites	Period (2019)	Polymer											Total	
			PE ^a	PP ^b	polyester	PO ^c	PTFE ^d	PVC ^e	PS ^f	PARA ^g	alkyl	acrylic	SI ^h		etc
Upstream	Water	Apr	7(14.0)	7(14.0)	1(2.0)	-	-	9(18.0)	-	-	-	-	-	4(8.0)	50(100)
		Aug	7(14.0)	6(12.0)	2(4.0)	-	-	-	1(2.0)	-	-	-	-	6(12.0)	
	Fish	Apr	16(31.4)	7(13.7)	4(7.8)	3(5.9)	1(2.0)	-	-	9(17.6)	2(3.9)	-	-	9(17.6)	51(100)
	Sediment	Apr	36(48.6)	12(16.2)	5(6.8)	7(9.5)	2(2.7)	-	-	-	-	4(5.4)	2(2.7)	6(8.1)	74(100)
Effluent	Water	Apr	4(3.9)	6(5.9)	-	-	-	6(5.9)	1(1.0)	-	-	-	-	1(1.0)	102(100)
		Aug	33(32.4)	23(22.5)	14(13.7)	-	-	2(2.0)	12(11.8)	-	-	-	-	-	
Yangjaechon	Water	Apr	5(9.1)	4(7.3)	-	1(1.8)	-	-	-	-	-	4(7.3)	6(10.9)	5(9.1)	55(100)
		Aug	12(21.8)	14(25.5)	1(1.8)	-	1(1.8)	-	-	-	-	-	-	2(3.6)	
Downstream	Water	Apr	54(25.7)	19(9.0)	1(0.5)	-	-	23(11.0)	-	-	-	-	1(0.5)	4(1.9)	210(100)
		Aug	48(22.9)	34(16.2)	3(1.4)	10(4.8)	9(4.3)	-	1(0.5)	-	-	1(0.5)	-	2(1.0)	
	Fish	Apr	36(41.4)	7(8.0)	14(16.1)	1(1.1)	6(6.9)	6(6.9)	-	5(5.7)	6(6.9)	-	-	6(6.9)	87(100)
	Sediment	Apr	36(70.6)	4(7.8)	1(2.0)	3(5.9)	-	-	-	-	-	-	1(2.0)	6(11.8)	51(100)

^a polyethylene, ^b polypropylene, ^c polyolefin, ^d polytetrafluoroethylene, ^e polyvinyl chloride, ^f polystyrene, ^g polyacryl amide, ^h silicon