

Microplastics Occurrence in Fish from Tocagua Lake, Low Basin Magdalena River, Colombia

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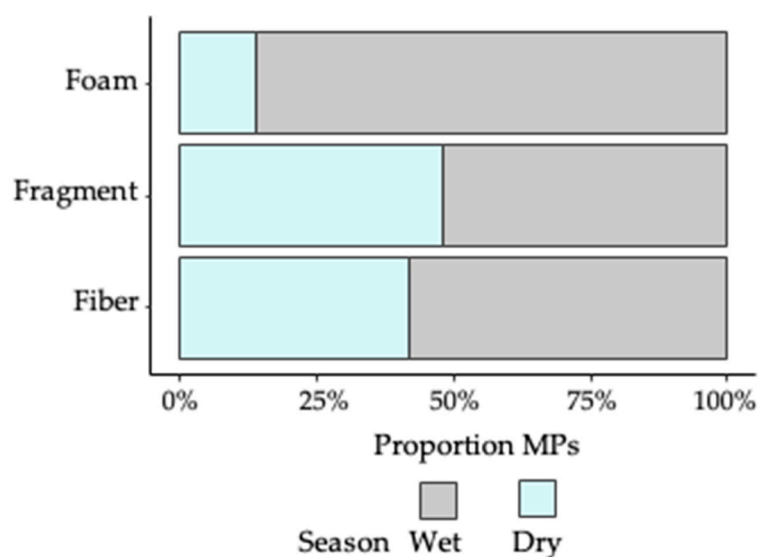


Figure S1. Proportion of the distribution of the shapes of microplastics identified in the water from Tocagua Lake in the wet and dry seasons.

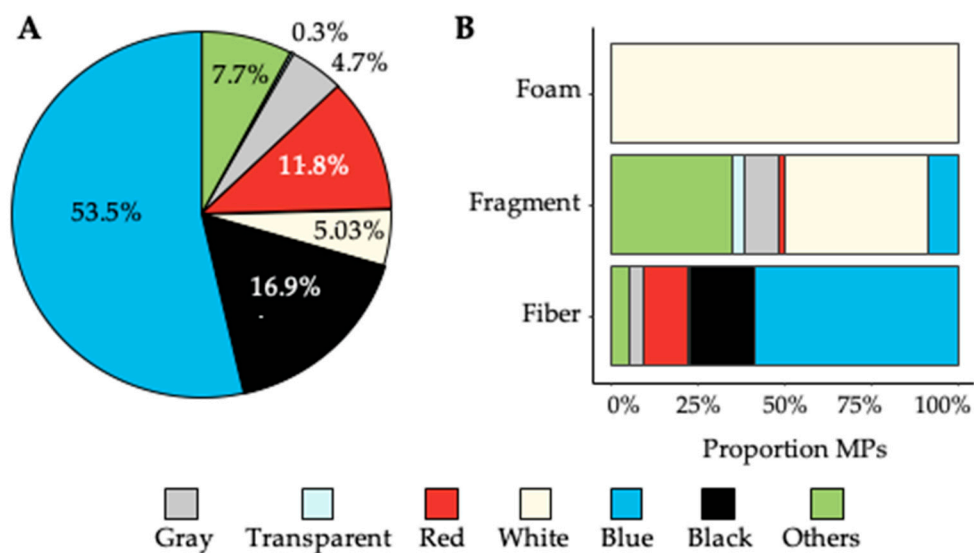


Figure S2. Typological characteristics of the MPs found in the water of Tocagua Lake in dry season. A: Color and B: Shape.

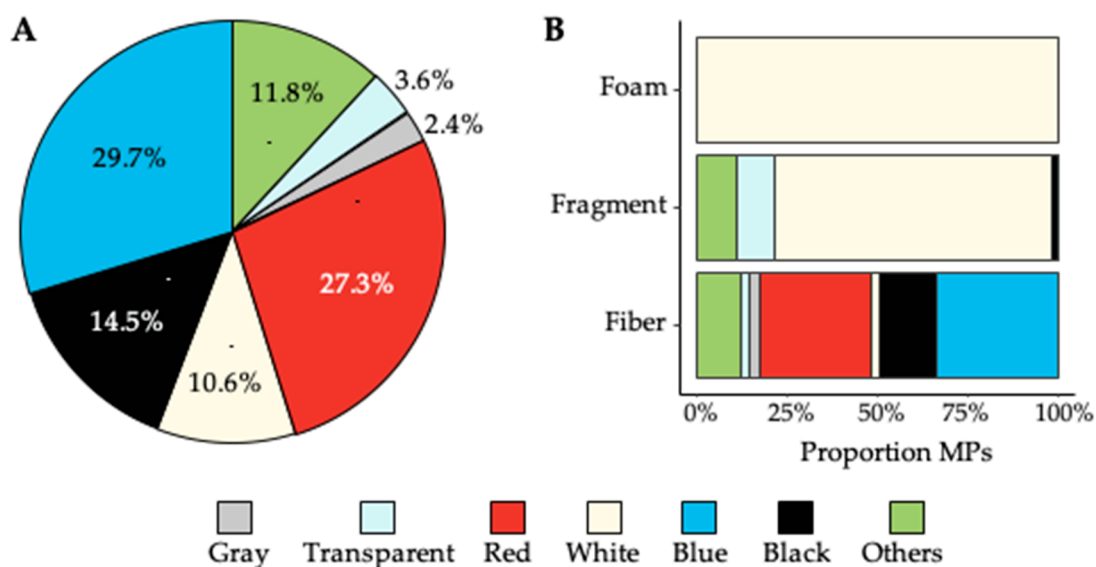


Figure S3. Typological characteristics of the MPs found in the water of Tocagua Lake in dry season. A: Color and B: Shape.

Table S1. Results of the negative binomial regression models to determine the association between the abundance of microplastics per individual according to the species and diet per season. No significant differences were observed.

term	estimate	std.error	statistic	p-value
(Intercept)	1.24	0.13	9.75	0
Dry season	-0.20	0.19	-1.09	0.279
<i>Astyanax magdalenae</i> specie	0.04	0.29	0.13	0.899
<i>Caquetaia krausii</i> specie	-0.29	0.21	-1.36	0.176
<i>Mugil liza</i> specie	-0.38	0.27	-1.38	0.170
<i>Oreochromis niloticus</i> specie	-0.10	0.23	-0.42	0.672
<i>Poecilia gilli</i> specie	-0.27	0.18	-1.50	0.135
(Intercept)	1.21	0.11	11.21	0
Dry Season	-0.20	0.19	-1.05	0.293
Omnivorous–carnivorous diet	-0.27	0.2	-1.30	0.193
Detritivorous–microalgae diet	-0.35	0.27	-1.32	0.188
Omnivorous–insectivorous diet	0.07	0.28	0.23	0.816

Table S2. General description of studies on microplastics ingestion by fish from freshwater lake ecosystems. %FO: is the percentage of fish with at least one microplastic particle in the gastrointestinal tract.

Country	Lake	Type	Lake area (km ²)	Depth (m)	Season	Fish species	N° Fish	N° MPs	%FO	Mean MPs/Ind	MP shape	Mean particle size	MP composition	Color	Reference
Colombia	Lake Tocagua	Rural	3	2	Dry	Andinoacara latifrons, Caquetaia krausii, Mugil liza, Oreochromis niloticus, Poecilia gilli	45	104	73.3	2.3 ± 3.6	Fiber 68.9%, Fragment 31.1%	2320 ± 1254	-	blue 33%, transparent 24.3%, white 27.2%, red 1.9%, black 6.8%, Others 6.8%	Present study
					Wet	Andinoacara latifrons, Astyanax magdalenae, Caquetaia krausii, Mugil liza, Oreochromis niloticus, Poecilia gilli	183	544	86.3	3 ± 2.5	Fiber 97.8%, Fragment 2.2%	1980 ± 1123)	-	blue 53.1%, transparent 5.1%, white 1.7%, red 5%, black 24.8%, gray 3.9%, Others 6.4%	
Alemania	Lake Constance	Urban	539	90	-	15 Fish species	331	-	16.5	0.2 ± 0.5	Fiber 25%, Fragment 75%	715 ± 981	-	blue 11.3%, clear 1.1%, yellow 5.8%, grey 8.7%, green 16.7%, red 13.2%, black 11.4%, white 27.3%, other 2.5%	[74]
Suiza	Lake Geneva	Rural	581.3	154	-	Alburnus alburnus, Perca fluviatilis, Rutilus rutilus, Leuciscus leuciscus	40	34	7.5	0.85 ± 4.9	Fiber 91.2%, Fragment 8.8%		-	-	[78]
Tanzania	Lake Victoria	Rural-Urban	68,800	40	-	Lates niloticus, Oreochromis niloticus	40	-	20	-	-	<250 um	PE/PPC, PE, PS, PUR, silicone rubber	-	[73]

Ethiopia	Lake Ziway	Rural	442	2.5 a 9	Dry	Oreochromis niloticus, Clarias gariepinus, Cyprinus carpio and Carassius carassius	180		30.5	4.4 ± 3.6	Fragment 57.5%, Fiber 42.5%,	4037 ± 3600	PE 44%, PP48%, AV8%	blue transparent white 3.6%, green, black, pink	37%, red, black, pink	[33]
					Wet	Oreochromis niloticus, Clarias gariepinus, Cyprinus carpio and Carassius carassius	180	414	38.8	3		3957 ± 3400				
China	Lake Chao	Rural-Urban	770	3.06	Dry	Hypophthalmichthys molitrix, Hyporhamphus intermedius, Cyprinus carpio, Carassius auratus, Culter alburnus	58	118	100	11.71 ± 6.58	Fiber 88%, Debris 11.5%, Film0.5%	<500	PP 29%, PET 28%, LDPE 6%,HDPE 5%, PE 20%, Others 1%, PVC 3%, PS 8%	blue transparent white 2%, green 1%, black 46%, grey 23%	20%, red 1%, grey	[75]
					Wet	Hypophthalmichthys molitrix, Hyporhamphus intermedius, Cyprinus carpio, Carassius auratus, Culter alburnus	60		100	9.07 ± 5.89	Fiber 82%, Debris 12%, Film 6%	<500	PP 48%, PET 25%, LDPE 2%,HDPE 7%, PE 9%, Others 2%, PVC 4%, PS 8%	blue transparent white 2%, green 1%, black 34%, grey 19%	24%, 13%, red 1%, grey	
China	Lake Chao	Urban	760	5.5	-	Culter alburnus, Culter dabryi, Culter mongolicus, Tachysurus fulvidraco, Carassius aurato, Cyprinus carpio, Pseudolaubuca sinensis, Coilia brachygnathus,	259	-	99.6	9.03 ± 5.70	Fiber 83.5%, Fragment 9.7%, film 6.3%, microspher e 0.5%	>1000	PP 45.9%, PET 26.1%, LDPE 2.6%,HDPE 2.9%, PE 8.2%, Others 1.7%, PVC 4.7%, PS 8%	blue transparent , white 2.5%, green 0.7%, black 35.6%, gray 14.2%	23,5%, 16.2%, red 0.7%, gray	[76]

						Hypophthalmichthys molitrix, Hypophthalmichthys nobilis, Hyporhamphus intermedius											
China	Lake Poyang	Urban-Rural	Dry 1000, Wet 3000	8	-	Carassius auratus	11	84	91	0–18	Fiber 54%, Fragment 25%, 14%, 7%	500–1000 film pellet	No	white 17%, black 10.55%, coloured 45%, transparent 27%	[77]		

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