

Supplementary Material

Microplastics contributed much less than organic matter to the burial of polycyclic aromatic hydrocarbons by sediments in the past decades: A case study from an urban lake

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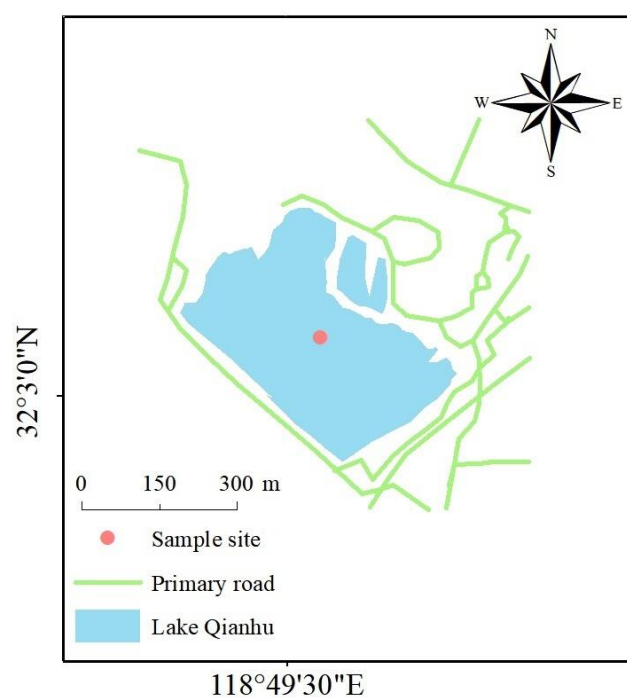
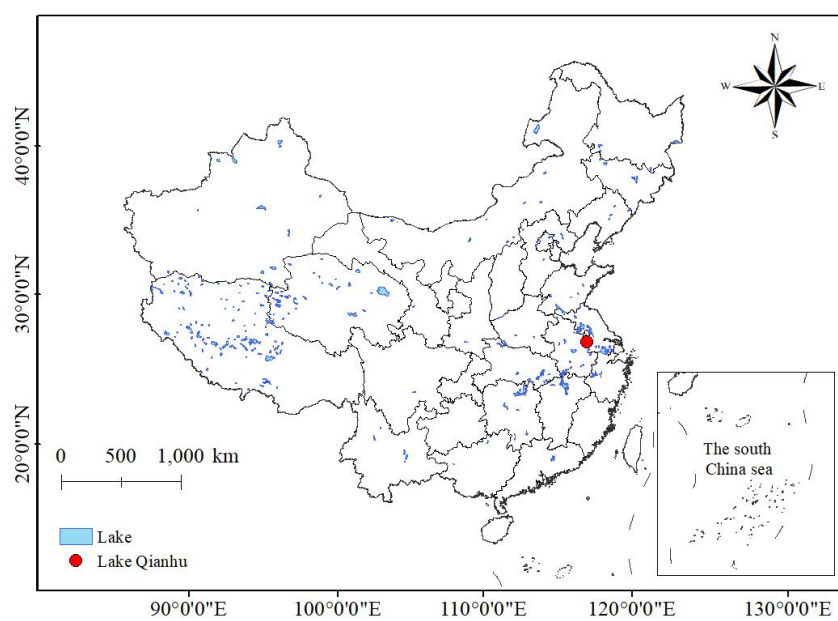


Fig. S1 The sampling site and location of Lake Qianhu in China.

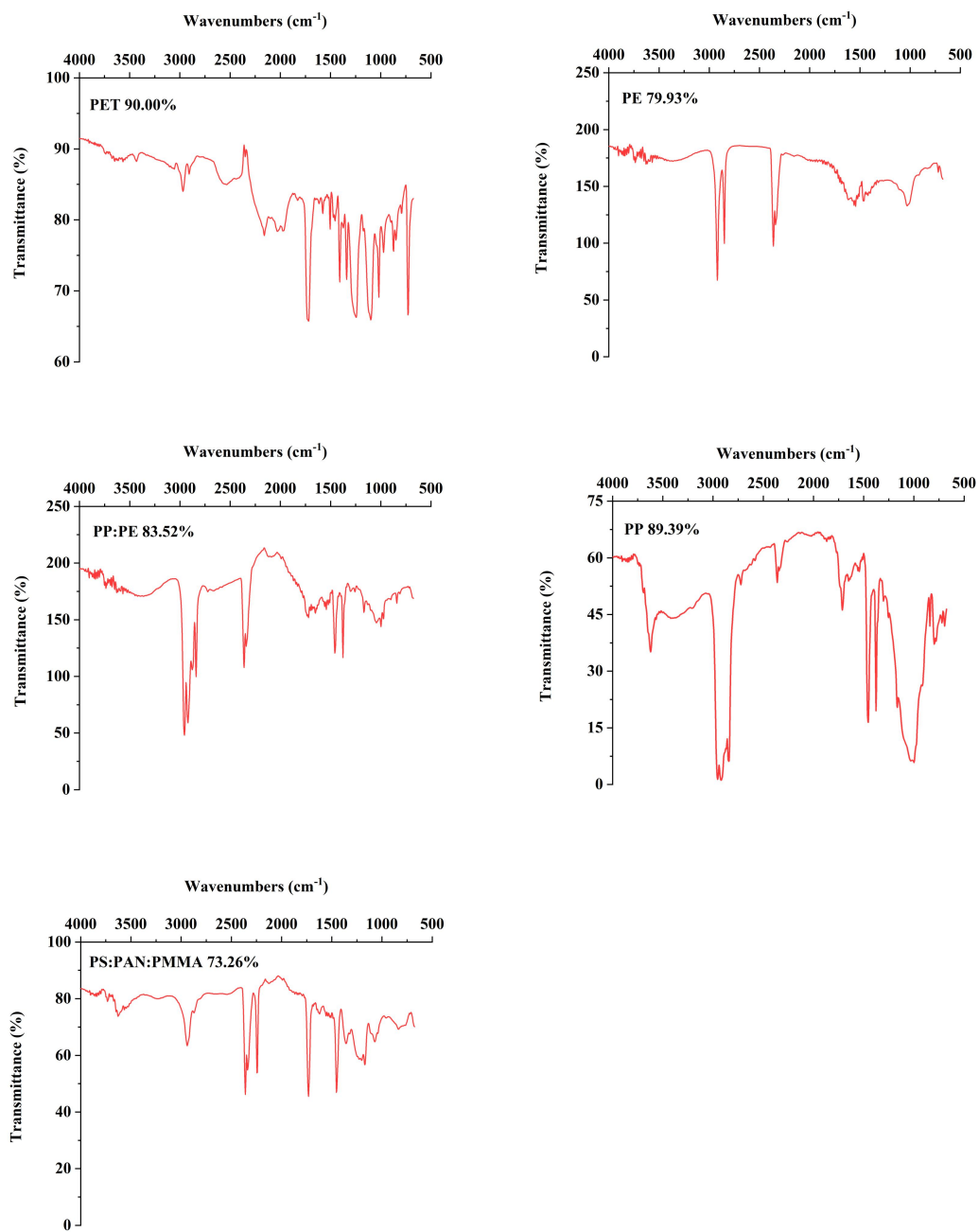


Fig. S2 The Fourier transform infrared spectrometer (FTIR) spectroscopy for the dominant components of microplastics in the sediments of Lake Qianhu in the period from 1975 to 2018.

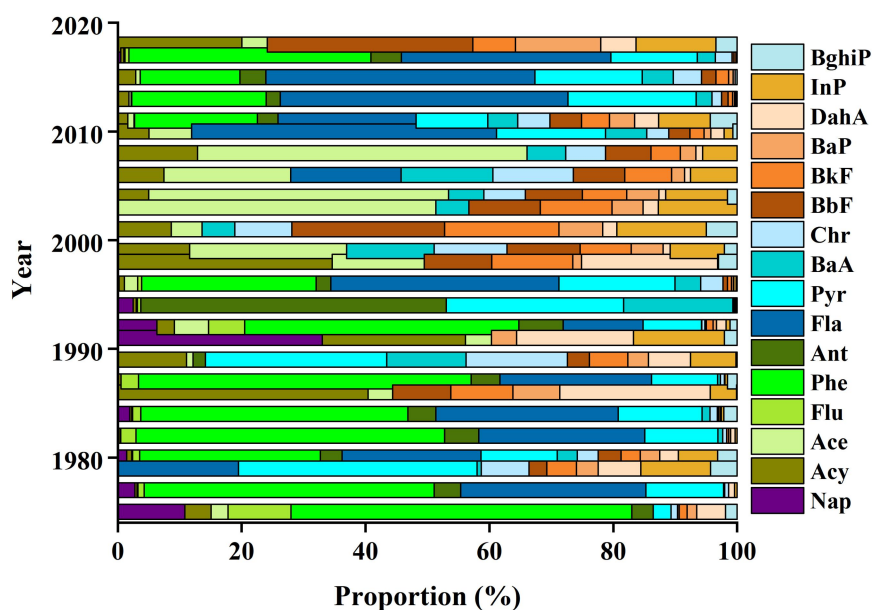
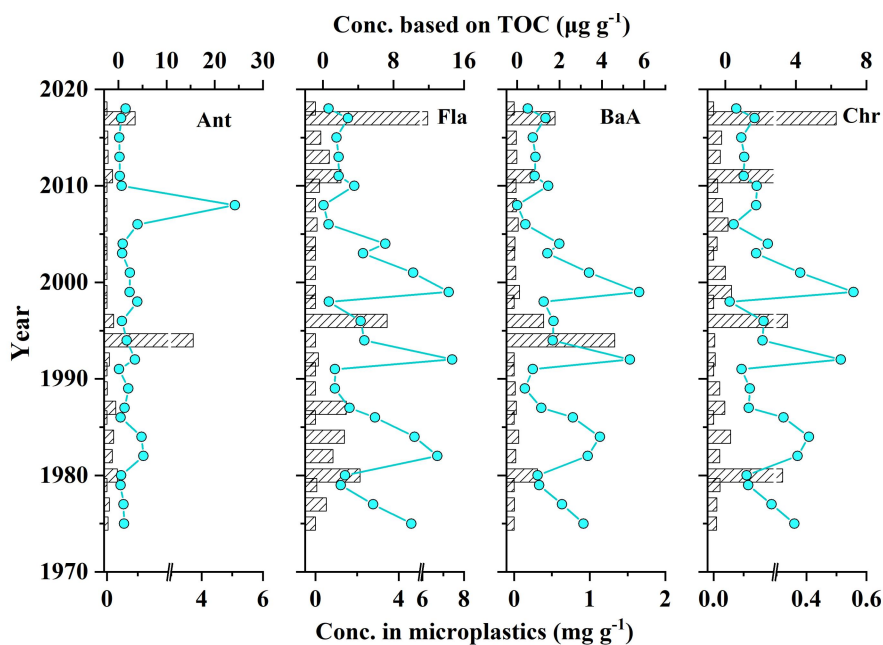
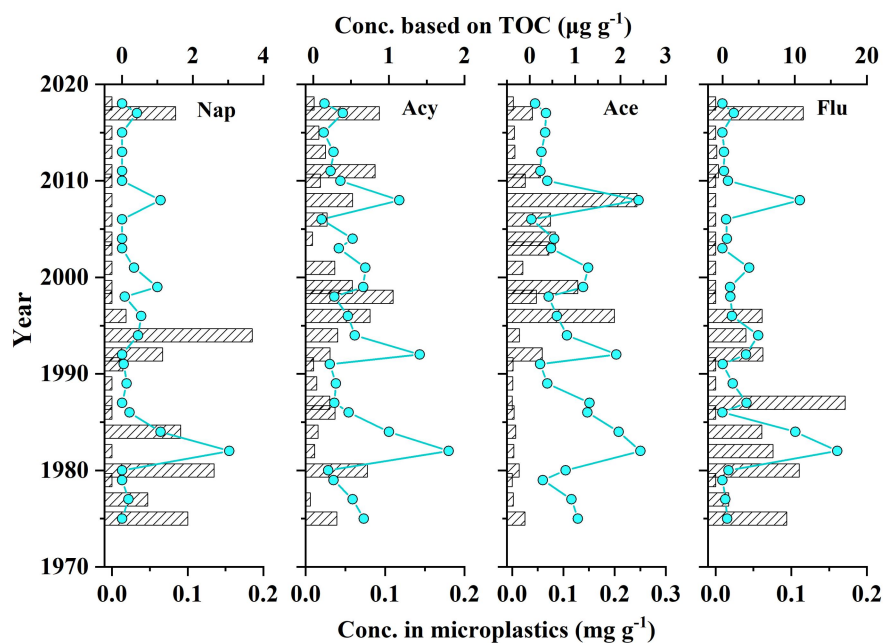


Fig. S3 Proportion of 16 polycyclic aromatic hydrocarbons (PAHs) adsorbed by microplastics in the sediments of Lake Qianhu in the period from 1975 to 2018. Nap: naphthalene, Acy: dihydroacenaphthene, Ace: acenaphthene, Flu: fluorene, Phe: phenanthrene, Ant: anthracene, Fla: fluoranthene, Pyr: pyrene, BaA: benzo [*a*] anthracene, Chr: chrysene, BbF: benzo [*b*] fluoranthene, BkF: benzo [*k*] fluoranthene, BaP: benzo [*a*] pyrene, DahA: dibenzo [*a, h*] anthracene, InP: indeno [*1, 2, 3 - c, d*] pyrene, and BghiP: benzo [*g, h, i*] perylene.



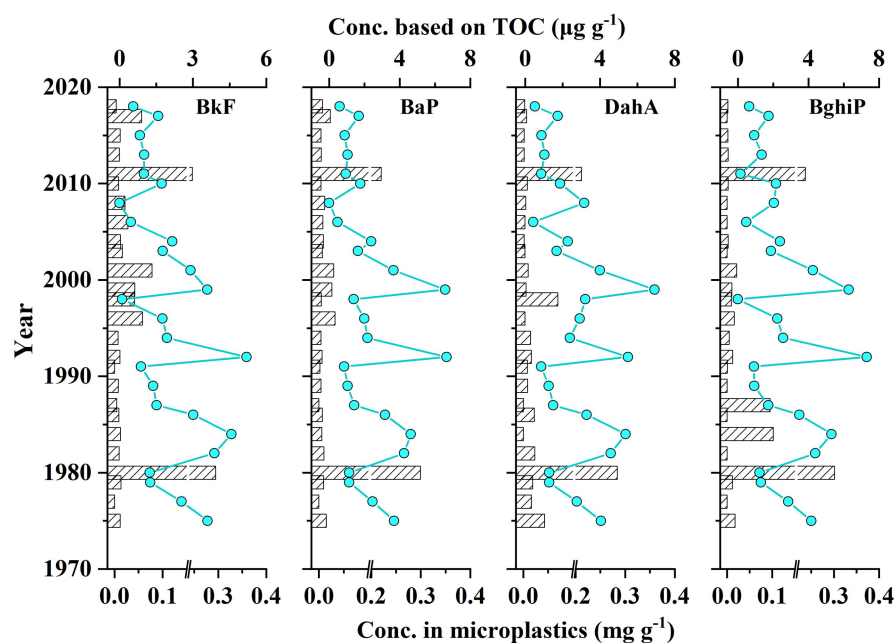
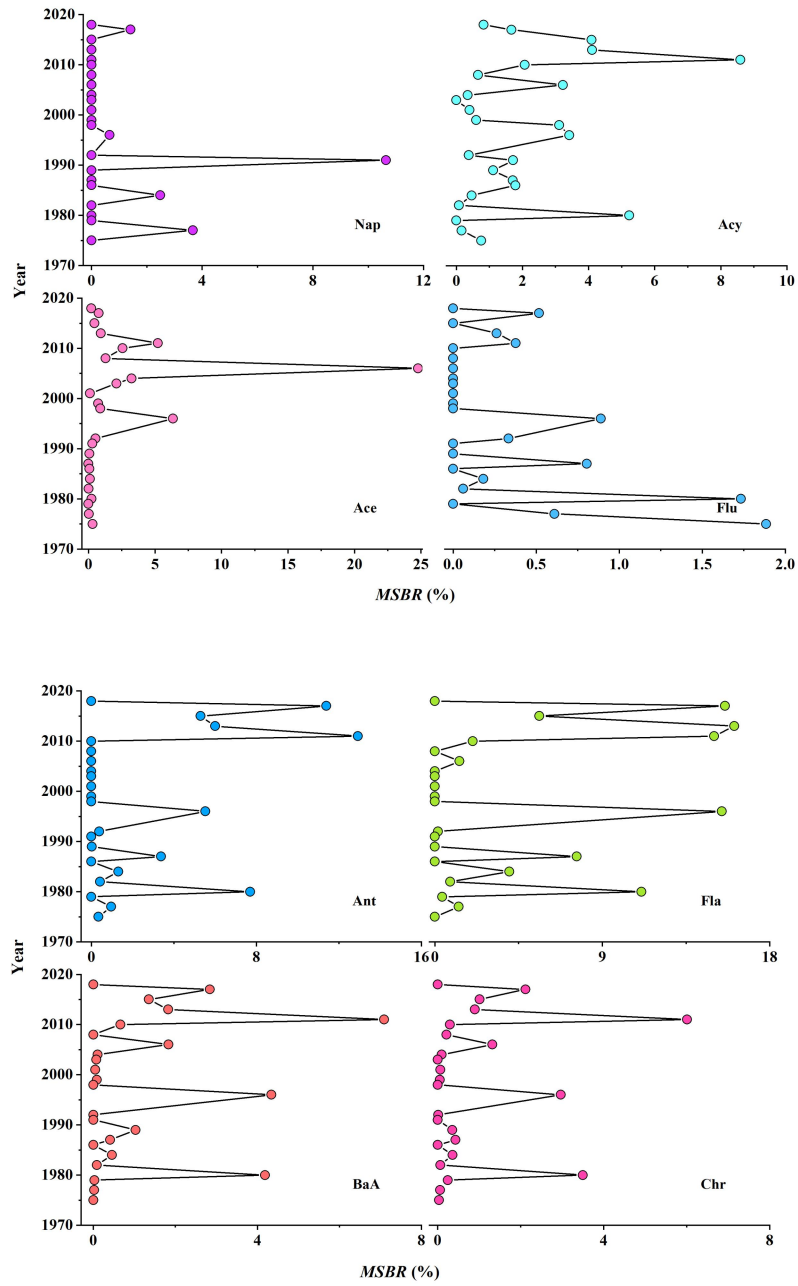


Fig. S4 Concentrations of PAHs adsorbed by microplastics (shown with bars) and total organic carbon (TOC) (shown with cycles) in the sediments of Lake Qianhu in the period from 1975 to 2018.



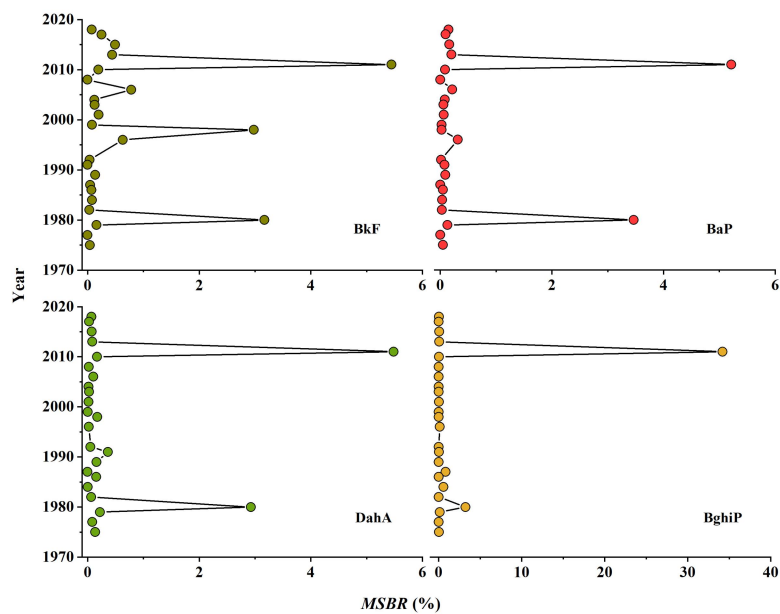


Fig. S5 Microplastic Sediment Burial Ratio (*MSBR*) of individual PAH adsorbed by microplastics in the sediments of Lake Qianhu in the period from 1975 to 2018.

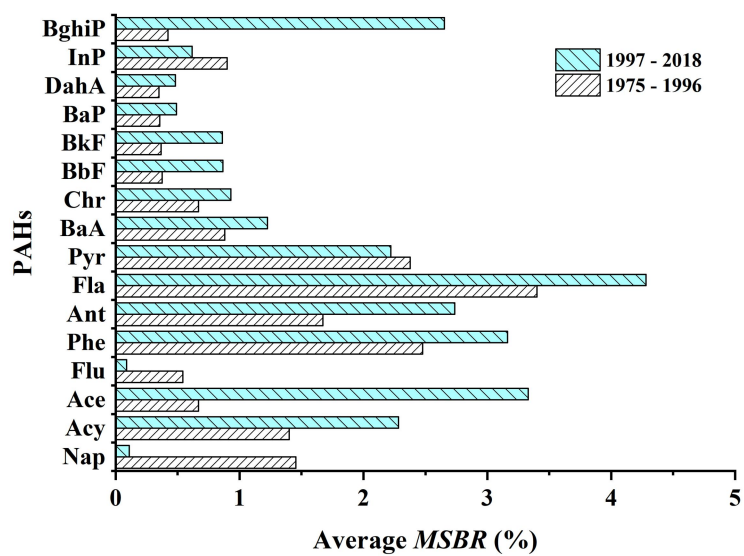


Fig. S6 The average *MSBR* of individual PAH adsorbed by microplastics in the sediments of Lake Qianhu in the periods from 1975 to 1996 and from 1997 to 2018.

Table S1 Concentrations of PAHs adsorbed by microplastics in water or sediments from different areas (References were shown in the Supplementary Material)

Area	ΣPAH_{16} ($\mu\text{g g}^{-1}$) adsorbed by microplastics	Composition of microplastics
Southwestern coast, Taiwan	0.10 - 3.6 ¹	Polyethylene, polypropylene
Beijiang River	0.28 - 0.43 ²	Polyethylene, polypropylene, polystyrene, expanded polystyrene, polyvinyl chloride, Polyethylene terephthalate (PET)
Eastern Guangdong beaches	0.010 - 7.7 ³	-
Sediment in Hong Kong	0.070 - 1.5 ⁴	-
Coast of Sao Paulo State	0.10 - 27.7 ⁵	-
Gulf of Guinea	0 - 0.32 ⁶	Polyethylene, polypropylene, polystyrene, Polyethylene terephthalate (PET)
southern coastline of Paraná Stat	1.5 - 6.0 ⁷	-
Lake Qianhu, China	43.7 - 18494 (This study)	Polyethylene, polyethylene terephthalate (PET), polypropylene, polystyrene : polyacrylonitrile : polymethyl methacrylate (PS : PAN : PMMA), low-density polyethylene (LDPE)

References

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