## REFERENCES

- ADB, 2004. Institutional Strengthening of Chittagong Port Authority in Environmental Management. 2: 177
- Anderson JC, Park BJ, Palace VP. 2016. Microplastics in aquatic environments: Implications for Canadian ecosystems. Environmental Pollution. 218: 269–280.
- Andrady AL. 2003. Plastics and the environment. New York: John Wiley and Sons.
- Atwood EC, Falcieri FM, Piehl S, Bochow M, Matthies M, Franke J, Carneil S, Sclavo M, Laforsch C, Siegert F. 2019. Coastal accumulation of microplastic particles emitted from the Po River, Northern Italy: comparing remote sensing and hydrodynamic modelling with in situ sample collections. Marine Pollution Bulletin. 138: 561–574.

Bangladesh Meteorological Department, 2021-2022

Bangladesh waste database, 2014. Dhaka: Waste Concern. Retrieved June, 29, 2019.

- Bergmann M, Gutow L, and Klages M. 2015. Marine anthropogenic litter. Springer Nature. 3: 447.
- Blettler MC, Abrial E, Khan FR, Sivri N, Espinola LA. 2018. Freshwater plastic pollution: Recognizing research biases and identifying knowledge gaps. Water Research. 143: 416-424.
- Boerger CM, Lattin GL, Moore SL, Moore CJ. 2010. Plastic ingestion by planktivorous fishes in the North Pacific Central Gyre. Marine Pollution Bulletin. 60(12): 2275-2278.
- Browne MA, Crump P, Niven SJ, Teuten E, Tonkin A, Galloway T, Thompson R. 2011. Accumulation of microplastic on shorelines woldwide: sources and sinks. Environmental Science & Technology. 45(21): 9175-9179.
- Browne MA, Galloway T, Thompson R. 2007. Microplastic an emerging contaminant of potential concern. Integrated Environmental Assessment and Management. 3(4): 559-561.
- Campanale C, Stock F, Massarelli C, Kochleus C, Bagnuolo G, Reifferscheid G, Uricchio VF. 2020. Microplastics and their possible sources: the example of Ofanto river in southeast Italy. Environmental Pollution. 258: 113284

- Carpenter EJ, Anderson SJ, Harvey GR, Miklas HP, Peck BB. 1972. Polystyrene spherules in coastal waters. Science. 178(4062): 749-750.
- Carson HS, Colbert SL, Kaylor MJ, McDermid KJ. 2011. Small plastic debris changes water movement and heat transfer through beach sediments. Marine Pollution Bulletin. 62(8): 1708-1713.
- Castro RO, da Silva ML, Marques MR, de Araújo FV. 2020. Spatio-temporal evaluation of macro, meso and microplastics in surface waters, bottom and beach sediments of two embayments in Niterói, RJ, Brazil. Marine Pollution Bulletin.160: 111537.
- Chen H, Jia, Q, Zhao X, Li L, Nie Y, Liu H, Ye J. 2020. The occurrence of microplastics in water bodies in urban agglomerations: impacts of drainage system overflow in wet weather, catchment land-uses, and environmental management practices. Water Research. 183: 116073.
- Cole M, Lindeque P, Halsband C, Galloway TS. 2011. Microplastics as contaminants in the marine environment: a review. Marine Pollution Bulletin. 62(12): 2588-2597.
- Coppock RL, Cole M, Lindeque PK, Queirós AM, Galloway TS. 2017. A small-scale, portable method for extracting microplastics from marine sediments. Environmental Pollution. 230: 829-837.
- Crawford CB, Quinn B 2017. 5-Microplastics, standardisation and spatial distribution. Microplastic Pollutants. 203: 101-130.
- De Carvalho AR, Garcia F, Riem-Galliano L, Tudesque L, Albignac M, Ter Halle A, Cucherousset J. 2021. Urbanization and hydrological conditions drive the spatial and temporal variability of microplastic pollution in the Garonne River. Science of the Total Environment. 769: 144479.
- De Sá LC, Oliveira M, Ribeiro F, Rocha TL, Futter MN. 2018. Studies of the effects of microplastics on aquatic organisms: what do we know and where should we focus our efforts in the future. Science of the total environment. 645: 1029-1039.
- Derraik J., 2002. The pollution of the marine environment by plastic debris: a review. Marine Pollution Bulletin. 44: 842–852.

- Dikareva N, Simon KS. 2019. Microplastic pollution in streams spanning an urbanisation gradient. Environmental Pollution. 250: 292-299.
- Dris R, Gasperi J, Rocher V, Tassin B. 2018. Synthetic and non-synthetic anthropogenic fibers in a river under the impact of Paris Megacity: sampling methodological aspects and flux estimations. Science of the Total Environment. 618: 157–164.
- Dris R, Imhof H, Sanchez W, Gasperi J, Galgani F, Tassin B, Laforsch C. 2015. Beyond the ocean: contamination of freshwater ecosystems with (micro) plastic particles. Environmental Chemistry. 12(5): 539-550.
- Duis K, Coors A. 2016. Microplastics in the aquatic and terrestrial environment: sources (with a specific focus on personal care products), fate and effects. Environmental Sciences Europe. 28(1): 1-25.
- Eerkes-Medrano D, Thompson R, Aldridge DC. 2015. Microplastics in freshwater systems: a review of the emerging threats, identification of knowledge gaps and prioritisation of research needs. Water Research. 75: 63-82.
- Egessa R, Nankabirwa A, Ocaya H, Pabire WG. 2020. Microplastic pollution in surface water of Lake Victoria. Science of The Total Environment. 741: 140201.
- Environment and Social Development Association (ESDO), 2016. Study Report: Microbeads! Unfold Health Risk and Environmental Pollutant. Accessed 24 January 2020.
- Eo S, Hong SH, Song YK, Han GM, Shim WJ. 2019. Spatiotemporal distribution and annual load of microplastics in the Nakdong River, South Korea. Water Research. 160: 228-237.
- Eriksen M, Lebreton LC, Carson HS, Thiel M, Moore CJ, Borerro JC, Galgani F, Ryan PG, Reisser, J. 2014. Plastic pollution in the world's oceans: more than 5 trillion plastic pieces weighing over 250,000 tons afloat at sea. PloS One. 9(12): e111913.
- Eriksen M, Mason S, Wilson S, Box C, Zellers A, Edwards W, Amato S. 2013. Microplastic pollution in the surface waters of the Laurentian Great Lakes. Marine Pollution Bulletin. 77(1-2): 177-182.

- Faure F, Demars C, Wieser O, Kunz M, De Alencastro LF. 2015. Plastic pollution in Swiss surface waters: nature and concentrations, interaction with pollutants. Environmental Chemistry. 12: 582–591.
- Ferreira GV, Barletta M, Lima AR, Morley SA, Justino AK, Costa MF. 2018. High intake rates of microplastics in a Western Atlantic predatory fish, and insights of a direct fishery effect. Environmental Pollution. 236: 706-717.
- Geyer R, Jambeck JR, Law KL. 2017. Production, use, and fate of all plastics ever made. Science Advances. 3(7): e1700782.
- Green, D.S., Boots, B., Blockley, D.J., Rocha, C., Thompson, R., 2015. Impacts of discardedplastic bags onmarine assemblages and ecosystem functioning. Environ. Sci. Technol.49, 5380–5389
- Gupta P, Saha M, Rathore C, Suneel V, Ray D, Naik A, Unnikrishnan K, Dhivya M, Daga K. 2021. Spatial and seasonal variation of microplastics and possible sources in the estuarine system from central west coast of India. Environmental Pollution. 288: 117665.
- Halden RU. 2015. Epistemology of contaminants of emerging concern and literature meta-analysis. Journal of Hazardous Materials. 282: 2-9.
- He B, Goonetilleke A, Ayoko GA, Rintoul L. 2020. Abundance, distribution patterns, and identification of microplastics in Brisbane River sediments, Australia. Science of the Total Environment. 700: 134467.
- Hidalgo-Ruz V, Gutow L, Thompson RC, Thiel M. 2012. Microplastics in the marine environment: a review of the methods used for identification and quantification. Environmental Science and Technology. 46(6): 3060-3075.
- Horton AA, Dixon SJ. 2018. Microplastics: an introduction to environmental transport processes. Wiley Interdisciplinary Reviews: Water. 5(2): e1268
- Horton AA, Jürgens MD, Lahive E, von Bodegom PM, Vijver MG. 2018. The influence of exposure and physiology on microplastic ingestion by the freshwater fish Rutilus (roach) in the River Thames, UK. Environmental Pollution. 236: 188-194.

- Hossain MB, Banik P, Nur AAU, Rahman T. 2021. Abundance and characteristics of microplastics in sediments from the world's longest natural beach, Cox's Bazar, Bangladesh. Marine Pollution Bulletin. 163: 111956.
- Hossain MS, Islam MS, Chowdhury MAT. 2005. Shore based pollution sources of the Karnafully River and the effects of oil-grease on the riverine environment. The Journal of Geo-Environment. 5: 55-66.
- Hossain MS, Rahman MS, Uddin MN, Sharifuzzaman SM, Chowdhury SR, Sarker S, Chowdhury MSN. 2020. Microplastic contamination in Penaeid shrimp from the Northern Bay of Bengal. Chemosphere. 238: 124688.
- Hossain MS, Sobhan F, Uddin MN, Sharifuzzaman SM, Chowdhury SR, Sarker S, Chowdhury MS, 2019. Microplastics in fishes from the Northern Bay of Bengal. Science of the Total Environment. 690: 821–830.
- Hurley R, Woodward J, Rothwell JJ. 2018. Microplastic contamination of river beds significantly reduced by catchment-wide flooding. Nature Geoscience. 11(4): 251-257.
- International Maritime Organization, IMO, 2015. Plastic particles in the ocean may be as harmful as plastic bags, report says. International Maritime Organization Press Briefing Archives. 27/04/2015.
- Isobe A, Kubo K, Tamura Y, Nakashima E, Fujii N. 2014. Selective transport of microplastics and mesoplastics by drifting in coastal waters. Marine Pollution Bulletin. 89(1-2): 324-330.
- Isobe A, Uchida K, Tokai T, Iwasaki S. 2015. East Asian seas: a hot spot of pelagic microplastics. Marine Pollution Bulletin. 101(2): 618-623.
- Ivar do Sul JAI, Costa MF. 2014. The present and future of microplastic pollution in the marine environment. Environmental Pollution. 185: 352-364.
- Karthik R, Robin RS, Purvaja R, Ganguly D, Anandavelu I, Raghuraman R, Hariharan G, Ramakrishna A, Ramesh R. 2018. Microplastics along the beaches of southeast coast of India. Science of the Total Environment. 645:1388-1399.
- Lambert S, Wagner M. 2018. Microplastics are contaminants of emerging concern in freshwater environments: an overview. Freshwater Microplastics. 209: 1-23.

- Leal FW, Saari U, Fedoruk M, Iital A, Moora H, Klöga M, Voronova V. 2019. An overview of the problems posed by plastic products and the role of extended producer responsibility in Europe. Journal of Cleaner Production. 214: 550-558.
- Lebreton L, Van Der Zwet J, Damsteeg JW, Slat B, Andrady A, Reisser J. 2017. River plastic emissions to the world's oceans. Nature communications, 8(1): 1-10.
- Lechner A, Keckeis H, Lumesberger-Loisl F, Zens B, Krusch R, Tritthart M, Glas M, Schludermann E. 2014. The Danube so colourful: a potpourri of plastic litter outnumbers fish larvae in Europe's second largest river. Environmental Pollution. 188: 177–181.
- Li S, Wang Y, Liu L, Lai H, Zeng X, Chen J, Liu C, Luo Q. 2021. Temporal and Spatial Distribution of Microplastics in a Coastal Region of the Pearl River Estuary, China. Water. 13(12): 1618.
- Lima ARA, Costa MF, Barletta M. 2014. Distribution patterns of microplastics within the plankton of a tropical estuary. Environmental Research. 132: 146-155.
- Lin L, Zuo LZ, Peng JP, Cai LQ, Fok L, Yan Y, Li HX, Xu XR. 2018. Occurrence and distribution of microplastics in an urban river: a case study in the Pearl River along Guangzhou City, China. Science of the total Environment. 644: 375-381.
- Lo HS, Xu X, Wong CY, Cheung SG. 2018. Comparisons of microplastic pollution between mudflats and sandy beaches in Hong Kong. Environmental Pollution. 236: 208-217.
- Lusher A, Pettersen R. 2021. Sea-based sources of microplastics to the Norwegian marine environment. NIVA-rapport.
- Magnusson K, Eliasson K, Fråne A, Haikonen K, Hultén J, Olshammar M, Stadmark J, Voisin A. 2016. Swedish sources and pathways for microplastics to the marine environment: a review of existing data. Swedish Environmental Protection Agency. 183: 65–72
- Mani T, Burkhardt-Holm P. 2020. Seasonal microplastics variation in nival and pluvial stretches of the Rhine River – from the Swiss catchment towards the North Sea. Science of the Total Environment. 707: 135579.
- Mani T, Hauk A, Walter U, Burkhardt-Holm P. 2015. Microplastics profile along the Rhine River. Scientific Reports. 5(1): 1-7.

- Masura J, Baker J, Foster G, Arthur C. 2015. Laboratory Methods for the Analysis of Microplastics in the Marine Environment: Recommendations for quantifying synthetic particles in waters and sediments.
- Menéndez-Pedriza A, Jaumot J. 2020. Interaction of environmental pollutants with microplastics: A critical review of sorption factors, bioaccumulation and ecotoxicological effects. Toxics. 8(2): 40.
- Moore CJ, Lattin GL, Zellers AF. 2011. Quantity and type of plastic debris flowing from two urban rivers to coastal waters and beaches of Southern California. Revista de Gestão Costeira Integrada-Journal of Integrated Coastal Zone Management. 11(1): 65-73.
- Parvin F, Jannat S, Tareq SM. 2021. Abundance, characteristics and variation of microplastics in different freshwater fish species from Bangladesh. Science of The Total Environment. 784: 147137.
- Peters CA, Bratton SP. 2016. Urbanization is a major influence on microplastic ingestion by sunfish in the Brazos River Basin, Central Texas, USA. Environmental Pollution. 210: 380–387.
- Plastics Europe, 2020. Plastics The Facts 2020: An Analysis of European Plastics Production, Demand and Waste Data. Plastics Europe, Belgium.
- Radhakrishnan K, Sivapriya V, Rajkumar A, Akramkhan N, Prakasheswar P, Krishnakumar S, Hussain SM. 2021. Characterization and distribution of microplastics in estuarine surface sediments, Kayamkulam estuary, southwest coast of India. Marine Pollution Bulletin. 168: 112389.
- Rakib M, Jahan R, Al Nahian S, Alfonso MB, Khandaker MU, Enyoh CE, Hamid FS, Alsubaie A, Almalki AS, Bradley DA, Mohafez H. 2021. Microplastics pollution in salt pans from the Maheshkhali Channel, Bangladesh. Scientific reports, 11(1): 1-10.
- Robin RS, Karthik R, Purvaja R, Ganguly D, Anandavelu I, Mugilarasan M, Ramesh R. 2020. Holistic assessment of microplastics in various coastal environmental matrices, southwest coast of India. Science of the Total Environment. 703: 134947.

- Rochman CM, Hoh E, Kurobe T, Teh SJ. 2013. Ingested plastic transfers hazardous chemicals to fish and induces hepatic stress. Scientific Reports, 3(1): 1-7
- Saha M, Naik A, Desai A, Nanajkar M, Rathore C, Kumar M, Gupta P. 2021. Microplastics in seafood as an emerging threat to marine environment: A case study in Goa, west coast of India. Chemosphere. 270: 129359.
- Schmidt C, Krauth T, Wagner S. 2017. Export of plastic debris by rivers into the sea. Environmental Science and Technology. 51(21): 12246-12253.
- Scircle A, Cizdziel JV, Missling K, Li, Vianello A. 2020. Single-pot method for the collection and preparation of natural water for microplastic analyses: Microplastics in the Mississippi River system during and after historic flooding. Environmental Toxicology and Chemistry. 39(5): 986-995.
- Sharma S, Chatterjee S. 2017. Microplastic pollution, a threat to marine ecosystem and human health: a short review. Environmental Science and Pollution Research. 24(27): 21530-21547.
- Shim WJ, Hong SH, and Eo S. 2018. Marine microplastics: abundance, distribution, and composition. In Microplastic Contamination in Aquatic Environments (pp. 1-26). Elsevier.
- Siddique MAM, Aktar M. 2012. Heavy metals in salt marsh sediments of porteresia bed along the Karnafully River coast, Chittagong. Soil and Water Research. 7(3): 117-123.
- Siegfried M, Koelmans AA, Besseling E, Kroeze C. 2017. Export of microplastics from land to sea. A modelling approach. Water Resarch. 127: 249–257.
- Sighicelli M, Pietrelli L, Lecce F, Iannilli V, Falconieri M, Coscia L, Di Vito S, Nuglio S, Zampetti G. 2018. Microplastic pollution in the surface waters of Italian Subalpine Lakes. Environmental Pollution. 236: 645-651.
- Singh R, Kumar R, Sharma P. 2022. Microplastic in the subsurface system: Extraction and characterization from sediments of River Ganga near Patna, Bihar. In Advances in Remediation Techniques for Polluted Soils and Groundwater (pp. 191-217). Elsevier.
- Song YK, Hong SH, Jang M, Han GM, Jung SW, Shim WJ. 2017. Combined effects of UV exposure duration and mechanical abrasion on microplastic

fragmentation by polymer type. Environmental Science and Technology. 51(8): 4368-4376.

- Sutton R, Mason SA, Stanek SK, Willis-Norton E, Wren IF, Box C. 2016. Microplastic contamination in the san francisco bay, California, USA. Marine Pollution Bulletin. 109(1): 230-235.
- Tajwar M, Yousuf Gazi M, Saha SK. 2022. Characterization and spatial abundance of microplastics in the coastal regions of Cox's Bazar, Bangladesh: An integration of field, laboratory, and GIS techniques. Soil and Sediment Contamination: An International Journal. 31(1): 57-80.
- Teuten EL, Saquing JM, Knappe DR, Barlaz MA, Jonsson S, Björn A, Rowland SJ, Thompson RC, Galloway TS, Yamashita R, Ochi D, Watanuki Y, Moore C, Viet PH, Tana TS. 2009. Transport and release of chemicals from plastics to the environment and to wildlife. Philosophical Transactions of the Royal Society B: Biological Sciences. 364(1526): 2027-2045.
- UNEP United Nations Environment Program, 2016. NEP Frontiers, 2016. Report: Emerging Issues of Environmental Concern. United Nations Environment Programme, Nairobi (77 p)
- Van Eygen E, Feketitsch J, Laner D, Rechberger H, Fellner J. 2017. Comprehensive analysis and quantification of national plastic flows: The case of Austria. Resources, Conservation and Recycling. 117: 183-194.
- Van Wijnen J, Ragas AM, Kroeze C. 2019. Modelling global river export of microplastics to the marine environment: Sources and future trends. Science of the Total Environment. 673: 392-401.
- Villegas L, Cabrera M, Capparelli MV. 2021. Assessment of microplastic and organophosphate pesticides contamination in fiddler crabs from a Ramsar site in the estuary of Guayas River, Ecuador. Bulletin of Environmental Contamination and Toxicology. 107(1): 20-28.
- Viršek MK, Palatinus A, Koren Š, Peterlin M, Horvat P, Kržan A. 2016. Protocol for microplastics sampling on the sea surface and sample analysis. Journal of Visualized Experiments. 118: e55161.

- Wagner M, Scherer C, Alvarez-Muñoz D, Brennholt N, Bourrain X, Buchinger S, Fries E, Grosbois C, Klasmeier J, Marti T, Rodriguez-Mozaz, S. 2014. Microplastics in freshwater ecosystems: what we know and what we need to know. Environmental Sciences Europe. 26(1): 1-9.
- Wagner S, Klöckner P, Stier B, Römer M, Seiwert B, Reemtsma T, Schmidt C. 2019. Relationship between discharge and river plastic concentrations in a rural and an urban catchment. Environmental Science and Technology. 53(17): 10082-10091.
- Waldschläger K, Schüttrumpf H. 2019. Erosion behavior of different microplastic particles in comparison to natural sediments. Environmental Science and Technology. 53(22): 13219-13227.
- Wang G, Lu J, Li W, Ning J, Zhou L, Tong Y, Liu Z, Zhou H, Xiayihazi N. 2021. Seasonal variation and risk assessment of microplastics in surface water of the Manas River Basin, China. Ecotoxicology and Environmental Safety. 208: 111477.
- Wang T, Zou X, Li B, Yao Y, Zang Z, Li Y, Yu W, Wang W. 2019. Preliminary study of the source apportionment and diversity of microplastics: taking floating microplastics in the South China Sea as an example. Environmental Pollution. 245: 965-974.
- Wang, W, Ndungu A.W, Li Z, Wang J. 2017. Microplastics pollution in inland freshwaters of China: a case study in urban surface waters of Wuhan, China. Science of the Total Environment. 575: 1369–1374.
- Wardrop P, Shimeta J, Nugegoda D, Morrison PD, Miranda A, Tang M, Clarke BO. 2016. Chemical pollutants sorbed to ingested microbeads from personal care products accumulate in fish. Environmental Science and Technology. 50(7): 4037-4044.
- Warrier AK, Kulkarni B, Amrutha, K, Jayaram D, Valsan G, Agarwal P. 2022. Seasonal variations in the abundance and distribution of microplastic particles in the surface waters of a Southern Indian Lake. Chemosphere. 300: 134556.

- Wicaksono EA, Werorilangi S, Galloway TS, Tahir A. 2021. Distribution and seasonal variation of microplastics in tallo river, makassar, eastern indonesia. Toxics. 9(6): 129.
- Wong G, Löwemark L, Kunz A. 2020. Microplastic pollution of the Tamsui River and its tributaries in northern Taiwan: Spatial heterogeneity and correlation with precipitation. Environmental Pollution. 260: 113935.
- Wong JKH, Lee KK, Tang KHD, Yap PS. 2020. Microplastics in the freshwater and terrestrial environments: Prevalence, fates, impacts and sustainable solutions. Science of the total Environment. 719: 137512.
- Wright SL, Kelly FJ. 2017. Plastic and human health: a micro issue? Environmental Science Technology. 51(12): 6634-6647.
- Wright SL, Thompson RC, and Galloway TS. 2013. The physical impacts of microplastics on marine organisms: a review. Environmental Pollution. 178: 483-492.
- Xia W, Rao Q, Deng X, Chen J, Xie P. 2020. Rainfall is a significant environmental factor of microplastic pollution in inland waters. Science of the Total Environment. 732: 139065
- Xu P, Peng G, Su L, Gao Y, Gao L, Li D. 2018. Microplastic risk assessment in surface waters: A case study in the Changjiang Estuary, China. Marine Pollution Bulletin. 133: 647-654.
- Zhang J, Zhang C, Deng Y, Wang R, Ma E, Wang J, Bai J, Wu J, Zhou Y. 2019. Microplastics in the surface water of small-scale estuaries in Shanghai. Marine Pollution Bulletin.149: 110569.
- Zhang K, Gong W, Lv J, Xiong X, Wu C. 2015. Accumulation of floating microplastics behind the Three Gorges Dam. Environmental Pollution. 204: 117-123.
- Zhang K, Xiong X, Hu H, Wu C, Bi Y, Wu Y, Zhou B, Lam PK, Liu J. 2017. Occurrence and characteristics of microplastic pollution in Xiangxi Bay of Three Gorges Reservoir, China. Environmental Science and Technology. 51(7): 3794-3801.

- Zhang, W., Zhang, S., Wang, J., Wang, Y., Mu, J., Wang, P., Lin, X. and Ma, D., 2017. Microplastic pollution in the surface waters of the Bohai Sea, China. Environmental pollution, 231, pp.541-548.
- Zheng K, Fan Y, Zhu Z, Chen G, Tang C, Peng X. 2019. Occurrence and speciesspecific distribution of plastic debris in wild freshwater fish from the Pearl River Catchment. China. Environmental Toxicology and Chemistry. 38(7): 1504-1513.
- Ziccardi LM, Edgington A, Hentz K, Kulacki KJ, Kane Driscoll S. 2016. Microplastics as vectors for bioaccumulation of hydrophobic organic chemicals in the marine environment: A state-of-the-science review. Environmental Toxicology and Chemistry. 35(7): 1667-1676.