



# A BIBLIOMETRIC ANALYSIS; CATEGORIZING LITERATURE FROM 2004-2024 ON MICROFIBRES FROM TEXTILES IN DIFFERENT ENVIROMENTS

what are the dominant trends, gaps, and methodological challenges in the current literature?

## INTRODUCTON

Microfibres are tiny synthetic fibers, typically less than 5 mm long and a few µm in diameter. They are considered a subset of microplastics when composed of synthetic polymers such as polyester, nylon, or acrylic. Microfibres are released from textiles through washing, wearing, and weathering, and pass through wastewater treatment into the environment. They persist in ecosystems and carry harmful chemicals or microorganisms, raising concerns about environmental and human health.

Literature on microfibre and microplastic has greatly increased. this attention to the pollution from textile microfibres is needed. Conducting a literature search, and then sorting and categorizing these articles shows that the reasearch is mainly review based and lab experiments and field work is missing.

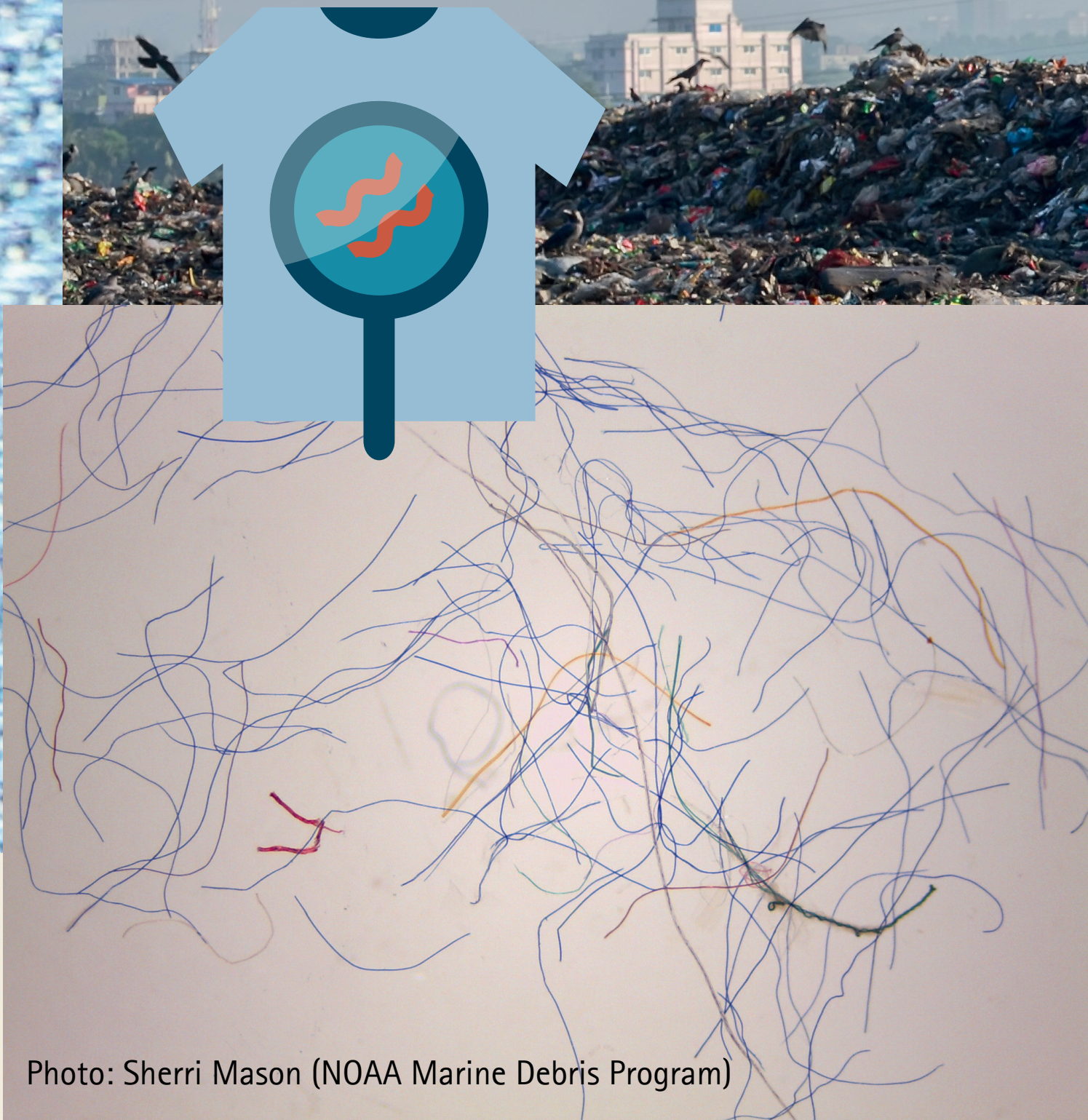


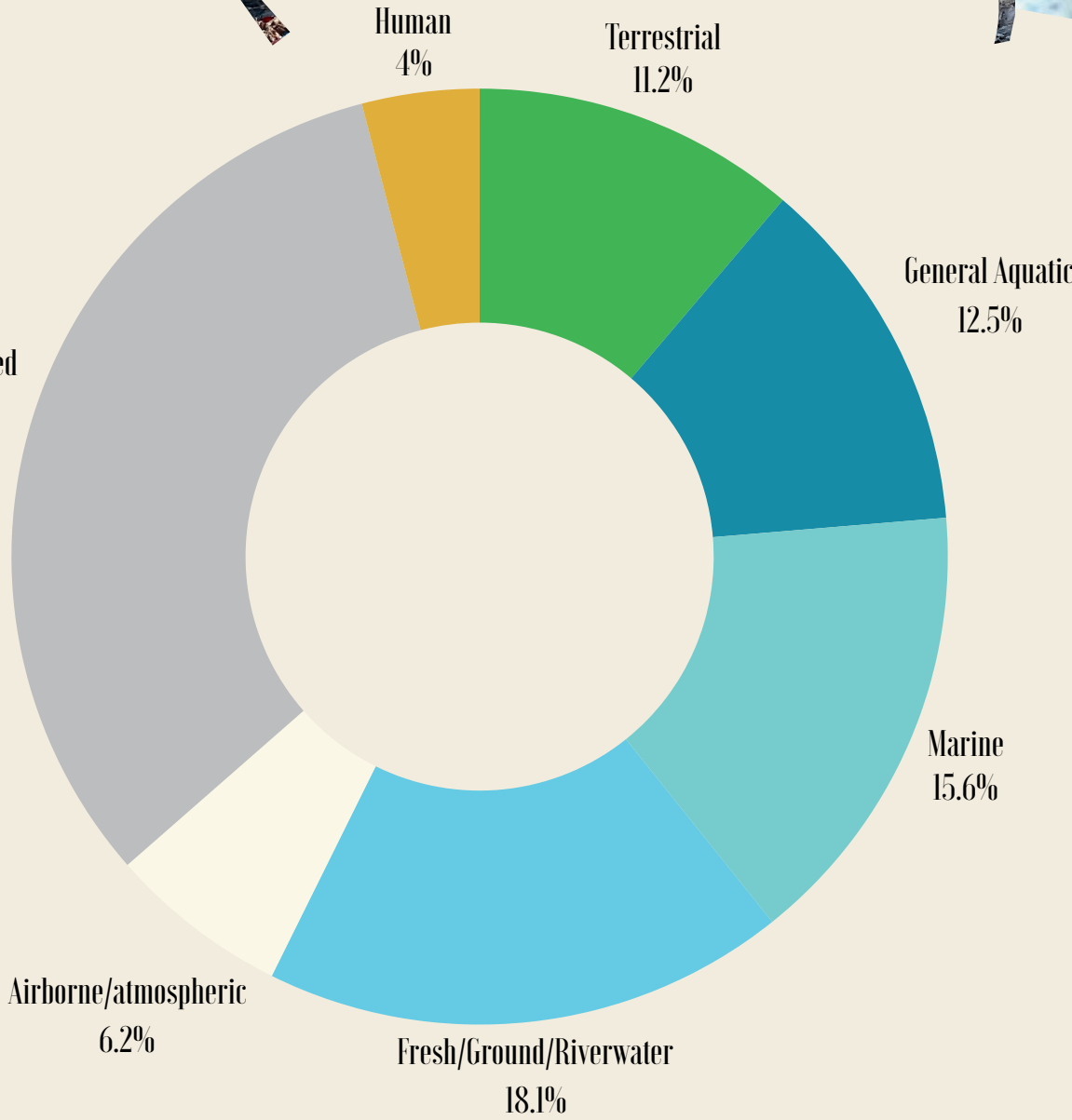
Photo: Sherri Mason (NOAA Marine Debris Program)



## RESULTS

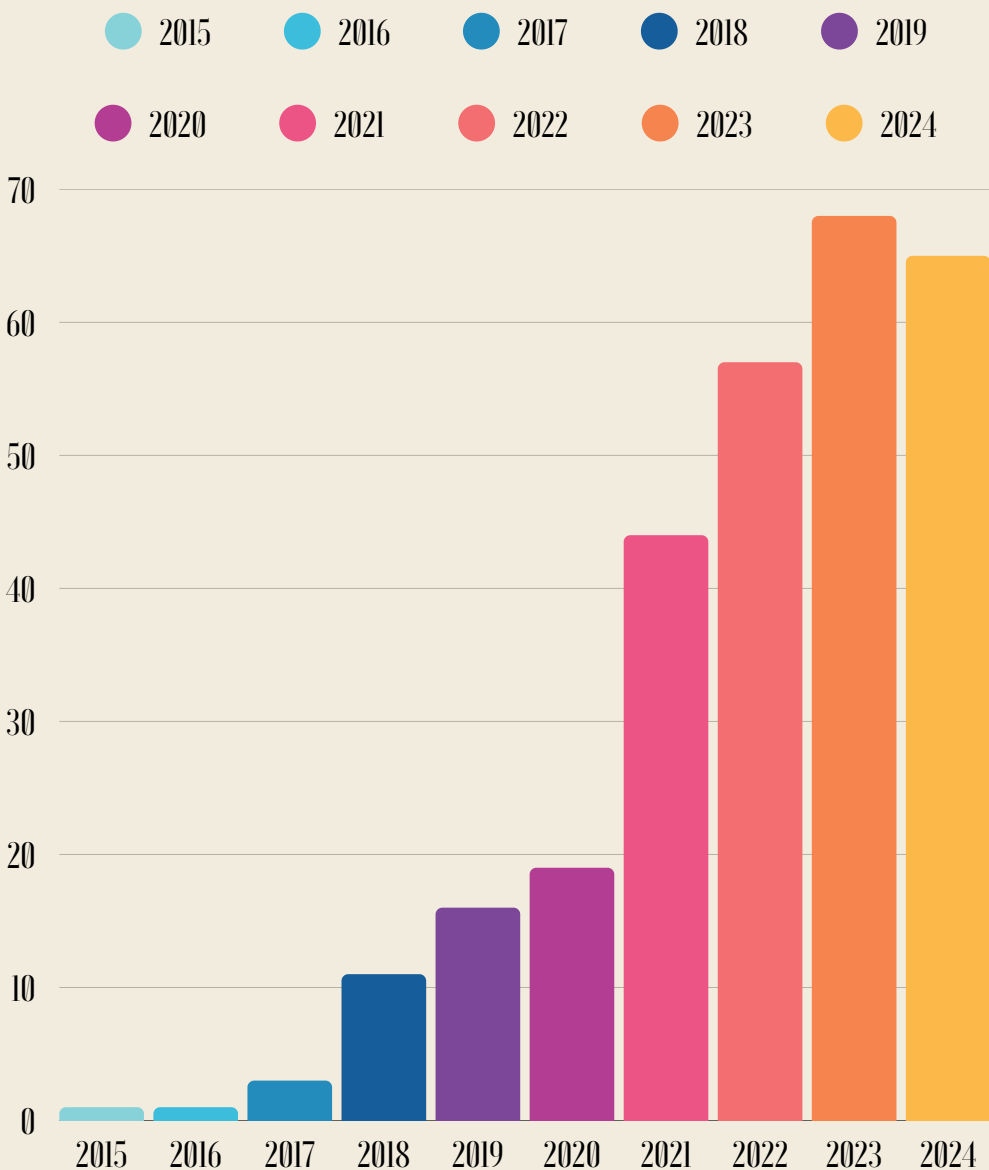
Articles categorised by:

Environment;  
marine, freshwater, aquatic  
general, terrestrial, atmospheric,  
All/unspecified, Human



Among the articles that specified an environment, studies focused on freshwater were the most common. Overall, water-related research (including freshwater and marine environments) dominated the results. In contrast, studies on microfibres in air and in relation to human exposure were much less represented.

The results show a sharp increase in the number of publications on microfibres after 2020, indicating a growing scientific interest in the topic in recent years.



GREAT INCREASE IN MICROFIBRE LITERATURE

## ! KEY CHALLENGE IDENTIFIED: LACK OF STANDARD METHODS

During the analysis, many articles pointed out the lack of standardized methods for measuring and identifying microplastics and microfibres. This makes it difficult to compare results across studies and limits our understanding of their environmental and health impacts. Developing consistent, widely accepted methods is essential for improving research quality and supporting effective regulation.

## METHODS

- WOS database tool: sort and identify literature within a sarch string
- Read abstracts and remove irrelevant literature
- Limits: 2004-2024, english, peer reviewed, Published



search string: Microplastic fibre OR microplastic fiber OR microfibres OR microfiber OR synthetic fabric OR microfibers OR textile microplastic)



SEARCH RESULTS  
(N=625)

ARTICLES SCREENED ON BASIS OF TITLE AND ABSTRACT AND SORTED OUT THE RESULTS THAT WHEREBY RELEVANT  
RELEVANT ARTICLES (N=302)

SORT AND CATEGORISE

## CONCLUSION

This bibliometric analysis reveals a rapidly growing scientific interest in textile-derived microfibres. Research has primarily focused on aquatic environments, with freshwater studies being most common, while air and human health impacts remain underexplored. Notably, all but one of the included articles were reviews, suggesting that the current literature is dominated by secondary research. This points to a need for more primary studies conducted in the field and laboratory. However, this finding may also reflect limitations in the search strategy, which could have excluded relevant experimental studies.

UN Sustainable development goals related to microfibres:



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