

The potential dangers postured by micro nano plastics to the security of sanitized drinking water

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Description

Micro plastics, the tiny particles of plastic less than 5 millimetres in size, have become a pervasive and concerning environmental issue. These minute fragments of plastic, originating from various sources, have infiltrated water bodies worldwide. The environmental impact of micro plastics in water is far-reaching and affects aquatic ecosystems, wildlife, and ultimately, human health. This article delves into the consequences of micro plastics on the environment, highlighting the urgent need for concerted efforts to mitigate this silent peril. Micro plastics pose a grave threat to aquatic life in water bodies. The ingestion of micro plastics by marine organisms, ranging from zooplankton to large marine mammals, can have detrimental effects. The tiny particles can block the digestive systems, leading to malnutrition, reduced reproductive success, and ultimately death. Additionally, micro plastics can accumulate in tissues, potentially causing long-term toxicity and disrupting physiological processes. This disruption extends throughout the food chain, affecting entire ecosystems and their delicate balance. Micro plastics have the potential to disrupt aquatic ecosystems in various ways. These particles can alter the physical and chemical properties of water, affecting its transparency, temperature, and oxygen levels. This, in turn, can impact the survival and behaviour of aquatic organisms. Micro plastics can also provide surfaces for the attachment of toxic pollutants, such as heavy metals and persistent organic pollutants. As a result, micro plastics act as vectors, facilitating the transport of harmful substances to different organisms, amplifying their toxic effects within the ecosystem. The environmental impact of micro plastics extends to biodiversity loss. Micro plastics can directly harm organisms, leading to population declines or even extinction of vulnerable species. The alteration of habitats due to micro plastic accumulation can disrupt breeding grounds and affect the overall ecological balance. Moreover, the long-term consequences of micro

plastic exposure on genetic diversity and adaptability of species remain largely unknown, raising concerns about the potential cascading effects on biodiversity at a global scale. Micro plastics have a detrimental impact on water quality. The accumulation of these particles in water bodies contributes to visual pollution, affecting the aesthetic value of natural environments. Moreover, micro plastics can leach out harmful additives and chemicals, further degrading water quality and posing risks to both aquatic organisms and human populations reliant on these water sources. The presence of micro plastics in drinking water sources raises concerns about potential health risks for human consumption. Micro plastics can disrupt crucial habitat structures, such as coral reefs and seagrass beds, which provide essential ecosystems services. The entanglement of micro plastics in these habitats can inhibit the growth and survival of these delicate organisms. Additionally, micro plastics can impair the functioning of key ecological processes, such as nutrient cycling and primary production, with far-reaching consequences for entire ecosystems. The environmental impact of micro plastics in water is a complex and urgent issue that requires immediate attention.

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Conflict of Interest

The author declares there is no conflict of interest in publishing this article.

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