



Navigating the Turbulent Waters: Environmental Issues Affecting Drinking Water Quality

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Abstract:

¹Access to clean and safe drinking water remains a critical global concern amidst mounting environmental challenges. This article examines the multifaceted environmental issues impacting drinking water quality, with a focus on pollution, contamination, and depletion of freshwater sources. It explores the ramifications of industrial waste, agricultural runoff, and urbanization on water ecosystems, highlighting their adverse effects on human health and biodiversity. Additionally, the article discusses emerging threats such as climate change-induced water scarcity and the spread of contaminants due to extreme weather events. Understanding these complexities is crucial for implementing effective policies and sustainable practices to safeguard our most precious resource – drinking water.

Keywords:- Drinking water quality, Environmental issue, Pollution, Contamination, Water scarcity

Introduction:

Access to clean drinking water is a fundamental human right, yet it's increasingly under threat due to a myriad of environmental issues. From pollution to climate change, various factors are

compromising the quality and availability of this precious resource. In this article, we'll delve into some of the critical environmental issues affecting drinking water globally, and the urgent need for proactive measures to address them.

Pollution:

One of the foremost concerns regarding drinking water safety is ²pollution. Industrial discharge, agricultural runoff, and improper waste disposal contaminate water sources with harmful chemicals, heavy metals, and pathogens. These pollutants not only degrade water quality but also pose significant health risks to communities reliant on contaminated water supplies. Addressing pollution requires stringent regulations, robust monitoring systems, and sustainable practices across industries.

Plastic Pollution:

The pervasive problem of plastic pollution extends to drinking water sources as well. Micro plastics, resulting from the breakdown of larger plastic debris, infiltrate water bodies and eventually find their way into drinking water supplies. Studies have shown that micro plastics can absorb and release toxic substances, posing health hazards to humans. Mitigating plastic pollution demands concerted efforts to reduce plastic usage, improve waste management infrastructure, and promote eco-friendly alternatives.

Climate Change:

Climate change³ exacerbates existing challenges to drinking water safety. Rising temperatures alter precipitation patterns, leading to droughts in some regions and floods in others. These extreme weather events disrupt water availability and quality, causing shortages and contamination. Additionally, warming temperatures accelerate the spread of waterborne diseases, further jeopardizing public health. Adapting to climate change requires resilience-building

² *Pollution: Contamination Risks*

³ *Climate Change: Adaptation Imperative*

measures such as efficient water management, conservation strategies, and infrastructure upgrades to withstand future impacts.

Deforestation and Land Degradation:

Deforestation and land degradation contribute to sedimentation and nutrient runoff, impairing water quality. Without tree cover to stabilize soil and regulate water flow, erosion intensifies, carrying sediment and pollutants into waterways. Moreover, loss of vegetative cover diminishes the natural filtration capacity of watersheds, exacerbating contamination issues. Reforestation efforts, coupled with sustainable land management practices, are essential for safeguarding drinking water sources and preserving ecosystem integrity.

Urbanization and Population Growth:

Rapid urbanization and population growth strain water resources, leading to over-extraction and depletion of aquifers. In urban areas, inadequate sanitation infrastructure and improper waste disposal exacerbate pollution, compromising water quality. Furthermore, marginalized communities often bear the brunt of inadequate access to safe drinking water, exacerbating social inequalities. Sustainable urban planning, investment in water infrastructure, and equitable water management are vital for addressing the challenges posed by urbanization and population growth.

Conclusion:

The environmental issues surrounding drinking water are multifaceted and interconnected, requiring holistic solutions that address root causes and promote sustainability. Governments, businesses, and communities must collaborate to enact policies, implement technologies, and adopt practices that safeguard water resources for present and future generations. Only through concerted action can we ensure universal access to clean and safe drinking water, fulfilling the basic human right to water and securing the health and well-being of all.