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Freshwater Salinization Syndrome: Emerging Global Problem and Risk Management

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Freshwater salinization is an emerging global issue impacting safe drinking water, ecosystem health and biodiversity, and infrastructure. The complex interrelationships between salt ions and chemical, biological, and geologic parameters and consequences on the natural, social, and built environment are called Freshwater Salinization Syndrome (FSS). We analyze and discuss the expanding magnitude and scope of FSS including its discovery of widespread geographic importance in humid regions and connections to human-accelerated weathering and mobilization of 'chemical cocktails.' We also present empirical data analyses illustrating changes in FSS and its water quality impacts across time and space. We outline several frontiers in FSS research, and we also identify new management strategies and tradeoffs.