

# Trace Elements in Waterlogged Soils and Sediments

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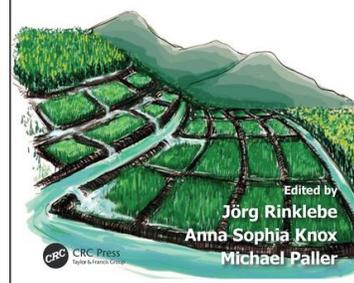
Many wetlands around the world act as sinks for pollutants, in particular for trace elements. In comparison to terrestrial environments, wetlands are still far less studied. A collaborative effort among world experts, this book brings the current knowledge concerning trace elements in temporary waterlogged soils and sediments together. It discusses factors controlling the dynamics and release kinetics of trace elements and their underlying biogeochemical processes. It also discusses current technologies for remediating sites contaminated with trace metals, and the role of bioavailability in risk assessment and regulatory decision making. This book is intended for professionals around the world in disciplines related to contaminant bioavailability in aquatic organisms, contaminant fate and transport, remediation technologies, and risk assessment of aquatic and wetland ecosystems.

## SELECTED CONTENTS

Understanding and Processes. Release Kinetics of Metals in Floodplain Soils. Physicochemical Factors Controlling Stability of Heavy Metal and Metalloids in Wetland Soils and Sediments. Adsorption-Desorption Of Metals in Waterlogged Soils and Sediments. Nanomaterials in Estuarine and Riverine Floodplain Soils and Sediments. Fate of Mercury in Sediments after In Situ Treatment or Capping. Rare Earth Elements in Waterlogged Soils and Sediments. Concomitant Reduction and Immobilization of Chromium In Relation To Its Bioavailability in Soils. Geochemical Controls of Uranium in Sediments. Examination of U Interactions with Co-Contaminants in Subsurface Sediments from Rifle, CO. Bioavailability & Remediation. Bioavailability of Metals in Dredge Sediments. Understanding the Relationship Between Metal Bioavailability In Contaminated Sediments And Biological Receptors. The Application Of Passive Sampler (DGT) Technology For Improved Understanding Of Metal Behavior And Contaminant Management At Marine Disposal Sites In The UK. Soil-Plant-Interactions Of Metals In Temporary Waterlogged Soils. Phytoremediation Of Trace Elements Of Waterlogged Soils And Sediments. Active Media For In-Situ Remediation Of Contaminated Sediments. Remediation And Management Of Contaminated Sediments.



## Trace Elements in Waterlogged Soils and Sediments



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# Trace Elements in Waterlogged Soils and Sediments

## Key Features

- Provides a comprehensive overview and covers the risks of trace metals in paddy soils and sediments.
- Contributes to a better understanding of geochemical processes of metals including bioavailability and remediation
- Presents innovative remediation and management approaches for contaminated sites
- Examines the results of various case studies from around the world
- Written by international experts who explain bioavailability, geochemical processes, management, and remediation approaches for contaminated soils and sediments

## Reviews

"This book not only fills an important gap in advancing our understanding of the environmental behavior of trace elements in waterlogged soils and sediments, but also gives valuable advice for those applying this knowledge in risk assessment, remediation and management of contaminated wetlands and aquatic environments."

— Rainer Schulin, ETH Zürich, Switzerland

"In *Trace Elements in Waterlogged Soils and Sediments*, a recent offering from CRC Press, editors Rinklebe, Knox and Paller have assembled contributions from an impressive list of accomplished researchers actively working in the field of trace element biogeochemistry as it pertains to waterlogged environmental systems. The book is composed of eighteen chapters roughly divided into three sections focused on fundamental processes, bioavailability, and remediation options. While providing some specific case studies related to a diverse range of contaminated systems, the chapters also contain significant fundamental material that make it equally beneficial to students and more experienced practitioners with interest in this field of study."

— John C. Seaman, University of Georgia, USA

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