

12th International SedNet Conference (online) - from 28 June to 2 July 2021

**“Sediment Challenges and Opportunities due to Climate Change and Sustainable Development”**

in partnership with BRGM and the Hauts de France Region



Simultaneous event with I2SM 7th International Symposium on Sediment Management

**CONFERENCE STRUCTURE**

|                          |  |  |
|--------------------------|--|--|
| 28 June 2021 p.m.        | Icebreaker (to be confirmed)   |  |
| 29 June 2021 a.m.        | Opening session  |  |
| 29 June 2021 p.m.        | Session “Circular Economy”   | Session “Sediments in coastal-marine management and EU strategies”                         |
|                          |  | Session “(Re)Using sediment to create, keep or restore habitats”                           |
| 30 June 2021 a.m.<br>(*) | Session “Circular economy” – continued   | Session “Impacts of disturbed sediment continua and mitigation measures?”                  |
|                          |  | Poster session “Sediment assessment and management - concepts and policies”                |
| 30 June 2021 p.m.<br>(*) | Session “Sediment assessment and management - concepts and policies”             | Session “How to deal with emerging substances / PFAS / Microplastics”                      |
| 1 July 2021 (*)          | On-line excursions (videos of sites, pilots, technologies)                       |  |
| 2 July 2021 a.m.         | Session “Sediment assessment and management - concepts and policies” – continued | Session “Climate change and sediments: direct and indirect consequences and opportunities” |
| 2 July 2021 p.m.         | Session “Sediment assessment and management - concepts and policies” - continued |  |
|                          | Closing session  |  |

(\*) There is a possibility that the day-programmes of 30 June and 1 July will be swapped

## CONFIRMED PRESENTATIONS

### Session “Circular Economy”

Beneficial Sediment Use and Nature-Based Solutions: opportunities for sustainable and circular developments

Luca Sittoni, Ecoshape / Deltares, NL

Assessing circularity of inland dredging activities: a new tool for the Dutch Water Authorities to pave the way towards a circular economy of dredged sediments

Eldert Besseling, NETICS - The Sediment Engineers, NL

Recycling of river sediments to produce raw materials for construction sector – Upscaling of mineral processing techniques to supply a large batch of sediment

Mathieu Henry, Centre Terre et Pierre, Belgium

On-site analyses as a decision support tool for dredging and sustainable sediment management

Bruno Lemière or Valérie Laperche, BRGM, France

Morphological changes and organic´s removal by electrokinetic remediation of a dredged marine sediment

Marta Castellote, Institute of Construction Science Eduardo Torroja (IETcc-CSIC), Spain

Mass stabilization processing of impounded sediments in dam removals promoting ecological river restoration and upland beneficial use

Eric Stern, Tipping Point Resources Group, LLC, USA

Recovery and environmental recycling of sediments: CNR-IRET Pisa experience

Cristina Macci, CNR-IRET, Italy

Cleanup of Rivers and Harbors: The Uncertain Promise of Circular Economy

Philip Spadaro, TIG Environmental, USA

Horizontal permeable reactive Barriers for contaminated Sediments in marine Environments

Stefan Niewerth, HUESKER Synthetic GmbH, Germany

Sustainability Conceptual Site Model (SustCSM) and the Project Cycle: Linking Management, Restoration, Re-Use and Resilience in a Changing World

Sabine Apitz, SEA Environmental Decisions Ltd., UK

Developing pattern in *Prunus laurocerasus* grown on sediment enriched substrates (LIFE SUBSED 17 ENV/IT/000347)

Stefania Nin, CREA, Research Centre for Vegetables and Ornamental Crops, Italy

Dredged sediments as a plant-growing substrate: Potential source of nutrients

Laura Ferrans, Linnaeus University, Sweden

Economic Modelling and Assessment of the Economic Benefits of Beneficial Use of Dredged Sediment

Joe Harrington, Munster Technological University, Ireland

### Posterflashes

The applicability of river sediment for the production of clay bricks

Vilma Ducman, Slovenian National Building and Civil Engineering Institute, Slovenia

Calcined clays from dredging as cement constituent – impact of fluvial sediments from the Scheldt basin (Belgium, France) on composite cement hydration

Ruben Snellings, VITO, Belgium

[GEOWALL® technology as the key for unlocking the value of dredged sediments by reuse in civil structures and infrastructure](#)

Hugo Ekkelenkamp, NETICS - The Sediment Engineers, NL

[Reactivity of calcined river sediments](#)

Katja Traven, Slovenian National Building and Civil Engineering Institute, Slovenia

[A molecular dynamics study about water adsorption in expansive clays](#)

Wenlong Chen, Cranfield University, UK

[Remediation of contaminated sediments by mineral additives and thermal processing](#)

Agnieszka Baran, University of Agriculture in Krakow, Poland

### **Session “Sediments in coastal-marine management and EU strategies”**

[Sustainable sediment management in coastal infrastructures through the innovative ejectors plant technology](#)

Marco Pellegrini, University of Bologna, Italy

[Bio-Engineering for Sediment Management And Removal of Turbidity Technologies: introduction, need, and research - implementation gap](#)

Miguel de Lucas Pardo, Deltares, NL, and Renaat De Sutter, Haedes, Belgium

[Water Injection Dredging for Innovative Sediment Management](#)

Katherine Cronin, Deltares, NL

### **Posterflashes**

[Multiple Stress Factors affecting Sediments in the Estuaries of Elbe and Odra](#)

Safia El Toum, Hamburg University of Applied Science, Germany

[Quality assessment in wild strawberry fruit and basil leaf from plants cultivated on dredged remediated sediment” \(LIFE SUBSED 17 ENV/IT/000347\)](#)

Stefania Nin, CREA, Research Centre for Vegetables and Ornamental Crops, Italy

[Distribution of Heavy Metals in Core Sediment at the Montenegrin coast](#)

Danijela Joksimović, University of Montenegro

### **Session “(Re)Using sediment to create, keep or restore habitats”**

[Annual dynamics of river bed clogging in a second order stream forms hyporheic community patterns](#)

Heide Stein, University of Koblenz-Landau, Germany

[Desalination of dredged sediments for circular reuse: two Eems-Dollard cases](#)

Maria Barciela Rial, HAN University of Applied Sciences, NL

[Restoring Estuarine and Coastal Habitats Using Dredged Sediments Handbook](#)

William Manning, Cefas, UK (*tentatively accepted*)

### **Session “Impacts of disturbed sediment continua and mitigation measures?”**

[Reactive mat on river bed catches groundwater contaminants and replaces sediment](#)

Tobias Praamstra, TAUW, NL

Testing water injection dredging for regular port maintenance  
Alex Kirichek, Delft University of Technology / Deltares, NL

Sediment accumulation and national heritage: the Chantilly case study  
Eric Masson, University Lille, France

Cross-border sediment relocation pilot to prevent sediment disbalance in the Scheldt estuary  
Eline van Malderen, Flemish Government, Belgium

### Session “Sediment assessment and management - concepts and policies”

Disproportionate or unavoidable - which costs are reasonable? - Socio-economic approach to find and finance the most cost-effective combination of measures in the international Elbe river basin  
Ilka Carls, Ministry of Environment, Climate, Energy and Agriculture, Germany

First Flemish Sediment Management Concept of the River Basin Districts of Scheldt & Meuse – 2022-2027  
Edward Van Keer, Flemish Government, Belgium

Acknowledging the Fragility of Sediment-Starved Deltas  
Mathias Kondolf, University of California Berkeley, USA

Reuse of sediments – Policy framework in Flanders  
Dirk Dedecker, OVAM - Public Waste Agency of Flanders, Belgium

Exploring the remediation of contaminated sediments  
Wim Clymans, VITO, Flemish Institute for Technological Research, Belgium

Focus on Contaminated Sediment Management in Sweden  
Yvonne Ohlsson, Swedish Geotechnical Institute, Sweden

Prioritization of valorization scenarios for sediment deposits management – VALSE project  
Olivier Bour, Ineris, France

Intensive historical evaluation and sampling campaigns to validate potential sediment contamination hotspots related with (former) risk activities)  
Dorien Gorteman, Arcadis, Belgium

Assessing Sediment Status in Europe: Frameworks, Standards and Approaches, an Expanded Review  
Sabine Apitz, SEA Environmental Decisions Ltd., UK

Comparing conventional and integrated sediment-quality assessment of three North Sea region waterways  
Sonja Faetsch, Hamburg University of Applied Sciences, Germany

The Sediment Quality Index - Integrative classification and assessment system  
Ilka Carls, Ministry of Environment, Climate, Energy and Agriculture, Germany

Action Level Review for dredge material management  
Claire Mason, Cefas, UK

Statistical procedures for checking compliance with rules of conformity in the course of disposal of dredged material in the German Bight  
Uwe Hentschke, Federal Institute of Hydrology, Germany

Use of rare earth elements and optical cable to quantify the sedimentation from different sediment sources in Port of Rotterdam

Arjan Wijdeveld, Deltares, NL

Development of a software tool to analyse the effect of soil management scenarios on soil erosion and sediment transport in Flanders

Sacha Gobeyn, Fluves, Belgium

Historical trends of the heavy metals in the marine sediments from southern part of the Adriatic Sea coastal area

Günseli Yaprak, Ege University, Turkey

Comparative analysis of radionuclide and potentially toxic element accumulation in sediments from the Northern Bulgarian Black Sea coast

Lyuben Dobrev, Institute of Oceanology - Bulgarian Academy of Sciences

Spatiotemporal characterization and evaluation of petroleum hydrocarbons in small craft harbour sediments in Nova Scotia, Canada

Myriam Mora, Dalhousie University, Canada

Age dating of recent tidal sediments by means of Cesium 137 and micropollutants

Arne Wick, Federal Institute for Hydrology, Germany

A large-scale laboratory column experiment to evaluate the effectiveness of capping fiberbank sediments in reducing contaminant transport

Anna-Karin Dahlberg, Swedish University of Agricultural Sciences, Sweden

### Posterflashes

Towards electrochemical measurements in the field of labile Cu, Pb and Zn in sedimentary particles

Gabriel Billon, University Lille, France

Integration of the erosion and sediment transport model WaTEM/SeDEM in the nutrient emission model NEMO used to support river nutrient management in Flanders

Daan Renders, Fluves, Belgium

Impact of organic matter on rheological behavior of fine-grained sediment

Ahmad Shakeel, Delft University of Technology, NL

Assessment of the chemical quality of sediments in the maritime port of Réunion

Julie Droit, Cerema, France

Rare earth elements detection in dredging sediments: ICP-MS versus pXRF

Gabriel Billon, University Lille, France

Controls on the effect of organic matter decay on sediment rheological properties

Florian Zander, Delft University of Technology, NL

Novel washing agents for efficient sediment remediation; selection, comparison and optimization study

Ana Robba, University of Ljubljana, Slovenia

Original, rapid and in situ colorimetric method for Acid Volatile Sulfide determination in sediment using a smartphone camera

Ludovic Lesven, Université Lille 1, France

Demonstrate and evaluate innovative sediment reuse solutions for flood and erosion protection - XRF quick scan of sediment composition

Valérie Laperche, BRGM, France

#### Fluid mud monitoring using optical fibers combined with DAS and DTS

Menno Buisman, Delft University of Technology / Port of Rotterdam Authority, NL

#### Ba concentrations and availability in floodplain sediments

Valérie Cappuyns, KU Leuven, Belgium

#### LIFE NARMENA: Nature based remediation techniques for heavy metals in sediment - constructed wetlands and bacteria-assisted phytostabilization

Jan De Vos, ABO, Belgium

#### Using of growing medium based on bottom sediment as a source of nutrients and an agent for improving soil properties

Agnieszka Baran, University of Agriculture in Krakow, Poland

### **Session “How to deal with emerging substances / PFAS / Microplastics”**

#### Sediment quality assessment framework for PFAS: results from a preparatory study and regulatory implications

Carmen Casado Martinez, Ecotox Centre Eawag-EPFL, Switzerland

#### Can we use theoretical approaches from natural sediment to describe the transport behaviour of microplastics?

Kryss Waldschläger, Wageningen University and Research, NL

#### “SPlasH! - Stop to plastic in H2O!” An EU Project to investigate the port environment: results on microlitter contamination in seawater, sediment, and biotic samples

Anna Reboa, University of Genoa – DISTAV, Italy

#### Landscaping with PFAS contaminated Soil and thin permeable Barriers

Stefan Niewerth, HUESKER Synthetic GmbH, Germany

#### Dealing with microplastics pollution in sediments – technologies for prevention and remediation

Jens Laugesen, Det Norske Veritas (DNV GL), Norway

#### Contaminants of emerging concern reuse of sediment

Ruth Cartuyvels, Witteveen+Bos, Belgium

#### Distribution and characterization of microplastics in the marine sediments from the Montenegrin coast

Neda Bošković, University of Montenegro

### **Posterflashes**

#### 3D Computer Tomography for Microplastics Analysis

Jasmina Obhodas, Ruder Boškovic Institute, Croatia

#### Chronic impacts of REE in a benthic-pelagic food web

Chantal van Drimmelen, Hamburg University of Applied Science / University of the West of Scotland, Germany/UK

### **Session “Climate change and sediments: direct and indirect consequences and opportunities”**

#### Case study of the possible future impacts of climate change on sediment yield for a semi-arid catchment in South Africa

Gerrit Basson, Stellenbosch University, South Africa

Impact of climate changes on sediment delivery and deposition in a dammed reservoir  
Ewa Szalinska, AGH University of Science and Technology, Poland

Beneficial use of river sediments as topsoil for passive carbon capture and storage during land restoration and energy crop production – A Net Zero management option?  
Richard Lord, University of Strathclyde, UK

The role of sediments in regulating the Earth's climate  
Andrija Vinković, Ruder Boskovic Institute, Croatia

Seasonal changes in the suspended sediment concentration and bathymetry of the NWW, the impact of low and high river discharge on sediment transport and sedimentation  
Arjan Wijdeveld, Deltares, NL

Effect of alternating redox conditions on organic matter decay in sediments  
Julia Gebert, Delft University of Technology, NL

### **Posterflashes**

Changes of sediment flux of secondary branches at pan-Arctic deltas  
Elena Dolgoplova, Russian Academy of Sciences, Russia

Extreme gas production from fibrous sediments - a potential overlooked greenhouse gas source  
Alizée Lehoux, Uppsala University, Sweden