



11<sup>th</sup> International SedNet Conference  
**Sediment as a dynamic natural resource  
from catchment to open sea**

**3-5 April 2019**

**Hotel Dubrovnik Palace, Dubrovnik, Croatia**

*co-organised by Ruđer Bošković Institute and University of Dubrovnik  
with support of IAEA*



## **Preliminary programme**

### **Tuesday 2 April 2019 - Pre-conference programme**

09:00-10:30	Meeting SedNet Working Group Sediments in Circular Economy	Meeting SedNet Working Group Sediment Quantity
10:30-11:00	<i>Coffee break</i>	
11:00-12:30	Meeting SedNet Working Group Sediments in Circular Economy <i>(continued)</i>	Meeting SedNet Working Group Sediment Quantity <i>(continued)</i>
12:30-13:30	<i>Lunch</i>	
13:30-15:00	Meeting SedNet Working Group Sediments in Circular Economy <i>(continued)</i>	Meeting SedNet Working Group Sediment Quantity <i>(continued)</i>
15:00-15:30	<i>Coffee break</i>	
15:30-17:30	Joint session SedNet Working Groups	
20:00-22:00	<i>Icebreaker / Conference registration</i>	

## Conference day 1: Wednesday 3 April 2019

08:30-09:00 Registration

### Plenary opening session

**Chair: Marc Eisma, chairman SedNet (Port of Rotterdam Authority, NL)**

09:00-09:20 Welcome by chairman and by local organisers

09:20-09:50 Keynote presentation:

#### **Indicators of methane hydrates occurrence in the deep Adriatic Sea**

Jasmina Obhodas, Ruder Boškovic Institute, Croatia

09:50-10:20 Keynote presentation:

#### **Deep sea sediments**

*speaker to be confirmed*

10:20-11:00 *Coffee break*

### **Session “Sediment management concept and sediment policy”**

**Chairs: Edward Van Keer (Flemish Government, Belgium) and Henrich Röper (Hamburg Port Authority, Germany)**

### **Session “The impact and transport of microplastics”**

**Chairs: Katherine Cronin (Deltares, NL) and Georg Reifferscheid (Federal Institute of Hydrology, Germany)**

11:00-11:30 Keynote presentation:

#### **Sediment management in the Sava River Basin**

Samo Grošelj, International Sava River Basin Commission (ISRBC)

Keynote presentation:

*to be confirmed*

11:30-11:50 **DanubeSediment – an EU project aiming to the restoration of the sediment balance in the Danube River**

Helmut Habersack, BOKU University of Natural Resources and Life Sciences, Austria

**(Micro)plastics in sediment and water samples of the rivers Elbe and Lahn, Germany**

Georg Reifferscheid, Federal Institute of Hydrology, Germany

11:50-12:10 **River Tyne – development of catchment scale conceptual model and contaminant mitigation**

Campbell Stewart, EnviroCentre Ltd., UK

**Microplastics in the sediments of the Norwegian continental shelf**

Arne Pettersen, Norwegian Geotechnical Institute, Norway

12:10-12:30 **Legislative reflection on sediment policy and management**

Lidia Balan, Geological Institute of Romania, Romania

**Preliminary research of microplastic from cave sediments, Croatia**

Neven Cukrov, Ruđer Bošković Institute, Croatia

12:30-14:00 *Lunch*

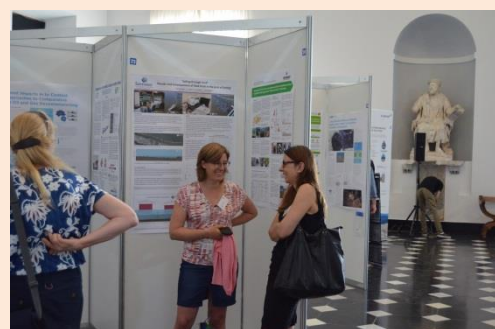
14:00-14:20 **The role of contaminated sediment monitoring for dredging management in the Elbe estuary**

Carmen Kleisinger, Federal Institute of Hydrology, Germany

**Investigation into the migration of microplastics through soil**

Linda Heerey, University College Dublin, Ireland

14:20-14:40	<b>The unpleasant need of going to court - Legal options of a downstream state to bring upstream partners to action</b> Ilka Carls, Ministry of Environment and Energy, Germany	<b>SPlasH! - Stop to plastic in H2O! An EU project to investigate the state of the port environment</b> Anna Reboa, University of Genoa, Italy
14:40-15:00	<b>Overview of the assessment of contaminated marine sediments in the Nordic countries and their remediation</b> Alizée Lehoux, Uppsala University, Sweden	<b>Methods for measuring plastic transport in large rivers and downstream of hydropower plants</b> Marcel Liedermann, BOKU University of Natural Resources and Life Sciences, Austria
15:00-15:20	<b>Towards a Swedish agenda on management of contaminated sediments – an action for increased cooperation between relevant governmental agencies</b> Yvonne Ohlsson, Swedish Geotechnical Institute, Sweden	<b>Numerical modelling of plastic transport and accumulation at the Austrian Danube River</b> Sebastian Pessenlehner, BOKU University of Natural Resources and Life Sciences, Austria
15:20-16:00	<i>Coffee break</i>	
	<b>Session “Sediment management concept and sediment policy” - <i>continued</i></b>	<b>Session “Ballast water and sediments – BWM Convention”</b>  <b>Chair: Jasmina Obhodas (Ruder Boškovic Institute, Croatia)</b>
16:00-16:20	<b>Contaminated sediments as hot-spots of wide-scale marine pollution: a need to re-think sediment management and policy</b> Stella Tamburrino, Institute for Coastal and Marine Environment (IAMC-CNR), Italy	<u>Keynote presentation:</u> <i>to be confirmed</i>
16:20-16:40	<b>Investigating the infrastructure-induced legacy sediments on 3 bypassed areas along the Rhône River (France)</b> Sophia Vauclin, University of Lyon, France	<b>Monitoring for implementation of the international convention for control and management of ships’ ballast water and sediments</b> Richard Wenning, Ramboll Environ, USA
16:40-17:00	<b>Introduction and first results within the project “Nautical Depth” in Hamburg</b> Nino Ohle, Hamburg Port Authority, Germany	<b>Sediment in the ship’s ballast water tank: A forgotten problem</b> Vladivoj Valković, SAGITTARIUS Consulting, Croatia
17:00-20:00	<i>Reception and Poster Session</i>	



## Conference day 2: Thursday 4 April 2019

### Session “Circular economy – sediment as a resource”

**Chairs: Bruno Lemièr (BRGM, France) and Goedele Vanacker (OVAM, Belgium)**

09:00-09:30 Keynote presentation:  
**System thinking: drawing causal loops for sediment**  
Dirk Halet, VLAKWA/VITO, Belgium

09:30-09:50 Keynote presentation:  
*to be confirmed*

09.50-10:10 **Mineral processing techniques dedicated to the recycling of river sediments to produced raw materials for the construction sector**  
Mathieu Henry, Centre Terre et Pierre, Belgium

10:10-10:30 **Renovation of a controlled flood area in the Scheldt estuary using dredged material from the Durme River**  
Mark van Straaten, Witteveen+Bos, Belgium

10:30-11:00 *Coffee break*

11:00-11:20 **Sediments feed and conserve soil**  
Jan Willem Berendsen, Royal HaskoningDHV, NL

11:20-11:40 **Sustainable sediment solutions: Stabilization of contaminated sediment**  
Tim Olean, O'Brien & Gere, USA

11:40-12:00 **Stabilization and beneficial use of contaminated sediments applying mobile pneumatic flow tube mixing for a circular economy**  
Eric Stern, Tipping Point Resources Group, LLC, USA

### Session “Sediment quality guidance, sediment quality assessment”

**Chairs: Susanne Heise (Hamburg University of Applied Sciences, Germany) and Elena Romano (ISPRA, Italy)**

Keynote presentation:  
**The evolution of sediment quality assessment criteria in the last years. How much decision makers have been facilitated in this process?**  
Mario Sprovieri, Institute for Coastal and Marine Environment (IAMC-CNR), Italy

**Assessing sediment chemical status in Europe: frameworks, standards and approaches, now and into the future**  
Sabine Apitz, SEA Environmental Decisions Ltd., UK

**A methodological proposal for the ecotoxicological characterization of continental and marine sediments for recovery**  
Tristan Lecomte, IMT Lille Douai, France

**Application of weighted criteria and integrated approach to assess sediment quality in marine and freshwater ecosystems**  
Francesco Regoli, Università Politecnica delle Marche, Italy

**Conflicting outcomes of integrated approach for sediment quality assessment in Sardinian coastal area subjected to mining activities**  
Elena Romano, ISPRA - National Institute for Environmental Protection and Research, Italy

**Development of marine sediment quality guidelines for evaluation of heavy metals contamination in Croatia**  
Josip Gregac, Association Lijepa Naša, Croatia

**First steps towards a new approach for interpretation of ecotoxicological data for sediment and dredged material classification**  
Susanne Heise, Hamburg University of Applied Sciences, Germany

12:00-12:20	<b>Baseline monitoring at a pilot site for sediment reuse</b> Bruno Lemière, BRGM, France	<b>Interreg project Sullied Sediments: set-up of decision support system for remediation techniques for contaminated sediments</b> Anissa Smits, Witteveen+Bos, Belgium
12:20-12:40	<b>Using Sediment As a Resource (USAR): Brightonsea harbour dredging and restoration project</b> William Coulet, Exo Environmental Ltd, UK	<b>Trace elements distribution and mobility in estuarine sediments of the Krka River (Croatia)</b> Nuša Cukrov, Ruđer Bošković Institute, Croatia
12:40-14:00	<i>Lunch</i>	
14:00-14:20	<b>The valorization of marine sediments in a context of circular economy and sustainable management</b> Pascal Grégoire, Port de Dunkerque, France	<b>Sweden's industrial legacy of contaminated, fibrous sediments: Properties relevant to management</b> Ian Snowball, Uppsala University, Sweden
14:20-14:40	<b>USAR Project: New optimization software for the formulation and the treatment of dredged sediments for valorization in civil engineering</b> Ahmed Zeraoui, IMT Lille Douai, France	<b>Quaternary phosphonium compounds: new toxic compounds present in sediments and suspended matter</b> Thomas Ternes, Federal Institute of Hydrology, Germany
14:40-15:00	<b>Design of a remediation approach to heavy metals contaminated sediments in the Great Backa Canal (Serbia)</b> Jelena Tričković, University of Novi Sad, Serbia	<b>Application of particle transport modeling and chemical forensic analysis in sediment contamination source evaluation</b> Philip Spadaro, TIG Environmental, USA Katherine Cronin, Deltares, NL
15:00-15:20	<b>Environmental monitoring at a sediment source site to qualify for reuse</b> Valérie Laperche, BRGM, France	<b>Comparing estrogenic and ecdysonic disruption potential of sediment samples by applying cell-based hormone-receptor reporter gene assays</b> Sonja Faetsch, Hamburg University of Applied Sciences, Germany
15:20-16:00	<i>Coffee break</i>	
16:00-18:00	Poster Session	
18:00-19:00	<i>Drinks</i>	
19:00-22:00	<i>Conference dinner + poster prize</i>	



### Conference day 3: Friday 5 April 2019

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

Chair: Pieter de Boer (Ministry of Infrastructure and Water Mngt, NL)

- 09:00-09:30 Keynote presentation:  
**Sediments as the redox paleo-record**  
Elvira Bura Nakic, Ruđer Bošković Institute, Croatia
- 09:30-09:50 **Mud transport in the Upper Sea Scheldt under climate change: from 2013 to 2050**  
Qilong Bi, Flanders Hydraulics Research, Belgium
- 09:50-10:10 **The Living Lab for Mud two years later: update on the ongoing pilots that integrate sediment management and building with nature**  
Luca Sittoni, Ecoshape, NL
- 10:10-10:30 **Sediment quantity modelling in a climate change context**  
Ewa Szalinska, AGH University of Science and Technology, Poland
- 10:30-10:50 *Coffee break*
- 10:50-11:10 **Innovations in modeling & monitoring to optimize sediment management in Flanders, Belgium**  
Daan Renders, Fluves, Belgium

#### Session “How can sediment management influence ecosystem services provision?”

Chair: Jos Brils (Deltares, NL)

- Keynote presentation:  
**SMARTSEDIMENT project: ready-to-use and tested spatially explicit GIS tool to estimate effects of sediment management on ecosystem services**  
Annelies Boerema, University of Antwerp, Belgium
- Beneficial use of muddy dredged sediment to support sediment budgets, coastal resilience, and ecosystem restoration**  
Joseph Gailani, US Army Corps of Engineers, USA
- Restoration of the Lake St Lucia Estuarine mouth for more natural functioning of the system**  
Gerrit Basson, Stellenbosch University, South Africa
- Ecologically effective colmation by fine sediment input and its measurement**  
Thomas Zumbroich, Planning Office Zumbroich & University Bonn, Germany
- Evaluating quantitative morphological changes of the Lower Rhine with regard to ecosystem services**  
Frauke Koenig, Federal Institute of Hydrology, Germany

*Coffee break*

#### Session “Nuclear and isotopic analytical techniques in sediment analysis”

Chair: Jasmina Obhodas (Ruđer Bošković Institute, Croatia)

- 11:10-11:30 **Projected climate change impacts on rainfall erosivity over Nepal: a step towards the estimates of future soil loss**  
Rocky Talchabhadel, Department of Hydrology and Meteorology, Nepal
- Keynote presentation:  
**Enhancing coastal management in the Adriatic and the Black Sea by using nuclear analytical techniques**  
Sylvia Sander, IAEA

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

**Chair: Helmut Habersack (BOKU, University of Natural Resources and Life Sciences, Austria)**

11:30-12:00	<p><b>Keynote presentation:</b>  <b>Disturbed sediment continuum of the Mekong, its impacts and proposed mitigation measures</b>                      Mat Kondolf, University of California Berkeley, USA</p>	<p><b>Dating of marine sediments for historical trends of the heavy metal concentrations in the Candarli Gulf of Turkey</b>                      Günseli Yaprak, Ege University, Turkey</p>
12:00-12:20	<p><b>Assessing success of gravel feeding and long term river management measures with respect to sediment budget and hydromorphology</b>                      Gudrun Hillebrand, Federal Institute of Hydrology, Germany</p>	<p><b>High resolution investigation of the geochemical and mineralogical composition of 1 Ky old euxinic sediments of the Western Black Sea</b>  <i>speaker to be confirmed</i></p>
12:20-12:40	<p><b>Soil erosion in East Africa: an interdisciplinary approach to realising land management change</b>                      Maarten Wynants, Plymouth University, UK</p>	<p><b>Development of electrochemical methods for field detection of trace metals in sediments</b>                      Marija Margus, Université Lille, France</p>
12:40-13:00	Discussion	<p><b>Nuclear analytical techniques used to study bottom sediments</b>                      Marina Frontasyeva, Joint Institute for Nuclear Research, Russian Federation</p>
13:00-14:00	Lunch	
14:00-15:30	<p><b>Special session:</b>  <b>“Cooperation – a question of common sense. Can legal steps help to enforce?”</b></p> <p><b>Chairs: Henrich Röper (Hamburg Port Authority, Germany) and Ilka Carls (Ministry of Environment and Energy, Germany)</b></p> <p>In many river basins, notwithstanding the WFD’s imperative of cause-effect consideration and cooperation at river basin scale, the planning of measures is often still dominated by sectoral political, administrative and economic interests and restrictions. Obtaining the required level of cooperation between the different responsible authorities, the Government and between the States remains difficult. As a consequence, management decisions are often taken out solely from a single State or particular point of view, sometimes with considerable problem shifts in the river basin.</p>	<p><b>Special Session:</b>  <b>“Using Sediment As a resource”</b></p> <p><b>Chair: William Coulet (Exo Environmental Ltd, UK)</b></p> <p>Using Sediment As a resource (USAR) is a project funded by the European Union’s Interreg 2seas Programme (2016-2020). Partners from the Netherlands, Belgium, France and the United Kingdom are working together to promote a resource-efficient approach based on the potential for re-use of dredged sediments. This session will summarise the learning outcomes of the project and present the tools developed for water management authorities to adopt this circular approach.</p>

The preparation for the third management cycle is the reason to check what challenges and needs influence the implementation process for suitable sediment remediation measures, which possible solutions exist? and which legal options are available to enforce the requirements of the WFD?

15:30-16:00 **Plenary closing session**

16:00-16:30 *Goodbye drink*

### Saturday 6 April 2019

09:30-15:00 **Excursion to Mali Ston**

Located in the Dubrovnik-Neretva county, the bay of Mali Ston has been famous for seashell cultivation since the days of the Roman Empire as it hosts the largest oyster cultivation facilities in the Adriatic.

During the visit to the bay, researchers from Dubrovnik University will explain about the water conditions for cultivating oysters, and you will get the chance to taste oysters (and some local wine).

Departure from hotel at 09:30 hrs, back at the hotel at approx. 15:00 hrs.

