



11th 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 the participation 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:

Acceleration of sedimentation rate in the Black Sea revealed in radiometrically dated by 210Pb sediment cores

Gennady Laptev, Ukrainian HydroMeteorological Institute, Ukraine

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)

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

Georg Reifferscheid, Federal Institute of Hydrology, Germany

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

Microplastics in the sediments of the Norwegian continental shelf

Arne Pettersen, Norwegian Geotechnical Institute, Norway

11:50-12:10

River Tyne – development of catchment scale conceptual model and contaminant mitigation

Campbell Stewart, EnviroCentre Ltd., UK

Preliminary research of microplastic from cave sediments, Croatia

Neven Cukrov, Ruđer Bošković Institute, Croatia

12:10-12:30

Legislative reflection on sediment policy and management

Lidia Balan, Geological Institute of Romania, Romania

Investigation into the migration of microplastics through soil

Linda Heerey, University College Dublin, Ireland

12:30-14:00 *Lunch*

14:00-14:20

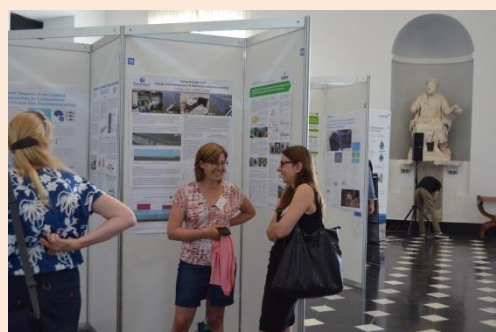
The role of contaminated sediment monitoring for dredging management in the Elbe estuary

Carmen Kleisinger, Federal Institute of Hydrology, Germany

SPLasH! - Stop to plastic in H2O! An EU project to investigate the state of the port environment

Anna Reboa, University of Genoa, Italy

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

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 **Using Sediment As a Resource (USAR): 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:
Sediment quality assessment criteria: new approaches and views
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
Cristian Mugnai, ISPRA, 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	Baseline monitoring at a pilot site for sediment reuse Bruno Lemière, BRGM, France	Interreg project Sullied Sediments: set-up of decision support system for remediation techniques for contaminated sediments Anissa Smits, Witteveen+Bos, Belgium
12:20-12:40	Using Sediment As a Resource (USAR): Brightonsea harbour dredging and restoration project William Coulet, Exo Environmental Ltd, UK	Trace elements distribution and mobility in estuarine sediments of the Krka River (Croatia) Nuša Cukrov, Ruđer Bošković Institute, Croatia
12:40-14:00	<i>Lunch</i>	
14:00-14:20	The valorization of marine sediments in a context of circular economy and sustainable management Pascal Grégoire, Port de Dunkerque, France	Sweden's industrial legacy of contaminated, fibrous sediments: Properties relevant to management Ian Snowball, Uppsala University, Sweden
14:20-14:40	USAR Project: New optimization software for the formulation and the treatment of dredged sediments for valorization in civil engineering Ahmed Zeraoui, IMT Lille Douai, France	Quaternary phosphonium compounds: new toxic compounds present in sediments and suspended matter Thomas Ternes, Federal Institute of Hydrology, Germany
14:40-15:00	Design of a remediation approach to heavy metals contaminated sediments in the Great Backa Canal (Serbia) Jelena Tričković, University of Novi Sad, Serbia	Application of particle transport modeling and chemical forensic analysis in sediment contamination source evaluation Philip Spadaro, TIG Environmental, USA Katherine Cronin, Deltares, NL
15:00-15:20	Environmental monitoring at a sediment source site to qualify for reuse Valérie Laperche, BRGM, France	Characterization and spatial distribution of organic contaminated sediment from historical industrial effluents to inform remediation decisions Tony Walker, Dalhousie University, Canada
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
Katrien Van der Biest, 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><u>Keynote presentation:</u> Disturbed sediment continuum of the Mekong, its impacts and proposed mitigation measures Mat Kondolf, University of California Berkeley, USA</p>	<p>Dating of marine sediments for historical trends of the heavy metal concentrations in the Candarli Gulf of Turkey Günseli Yaprak, Ege University, Turkey</p>
12:00-12:20	<p>Assessing success of gravel feeding and long term river management measures with respect to sediment budget and hydromorphology Stefan Vollmer, Federal Institute of Hydrology, Germany</p>	<p>High resolution investigation of the geochemical and mineralogical composition of 1 Ky old euxinic sediments of the Western Black Sea Octavian Dului, Bucharest University, Romania</p>
12:20-12:40	<p>Soil erosion in East Africa: an interdisciplinary approach to realising land management change Maarten Wynants, Plymouth University, UK</p>	<p>Development of electrochemical methods for field detection of trace metals in sediments Marija Margus, Université Lille, France</p>
12:40-13:00	Discussion	<p>Nuclear analytical techniques used to study bottom sediments Marina Frontasyeva, Joint Institute for Nuclear Research, Russian Federation</p>
13:00-14:00	<i>Lunch</i>	
14:00-15:30	<p>Special session: “Cooperation – a question of common sense. Can legal steps help to enforce?”</p> <p>Chairs: Henrich Röper (Hamburg Port Authority, Germany) and Ilka Carls (Ministry of Environment and Energy, Germany)</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>Special Session: “Using Sediment As a resource”</p> <p>Chair: William Coulet (Exo Environmental Ltd, UK)</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.

