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Newsletter - December 2014

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Impact of Fine Sediment on Ecology

Additional Call for Abstracts for a Special Session during the SedNet 2015 Conference in Krakow, Poland, 23-26 September 2015

In **addition** to the First Announcement and Call for Abstracts that was published in October (see www.sednet.org and/or article below) we wish to draw your attention to a Special Session that we are keen to organize at our 2015 conference in Krakow. We invite you to also consider sending in abstracts dedicated to this session.

Title of the Special Session

Assessing the impact of excessive fine sediment on aquatic ecology with a view to supporting improved catchment management

Convenors

- Prof Adrian Collins,
SedNet Steer Group member
Rothamsted Research, UK
- Dr Iwan Jones
QMUL, UK
- one EU author from the selected abstracts

Background

Excessive fine sediment loadings delivered to rivers from a variety of sources including agriculture have detrimental impacts on aquatic ecology and thereby degrade the ecological status of freshwater as well as estuarine and marine environments. Therefore there is a need to improve knowledge of the linkages between excess fine sediments and aquatic organisms in order to develop revised targets for guiding catchment management. These targets can be used to assess compliance to the WFD and other environmental policies and should be accepted by Member States. This Special Session will review recent work examining the impact of excessive fine sediment loads on freshwater as well as estuarine/marine biology (fish, macroinvertebrates, diatoms, macrophytes) and the development of frameworks for supporting

targeted decision-making for fine sediment management. A possible outcome may be a proposal for how to advance the scientific state-of-the-art in this field.

Call for Abstracts

SedNet would – additional to the topics indicated in our call of October (see next article) – be very pleased to receive abstracts for oral or poster presentation, addressing the topic described above.

Abstracts will be selected by the SedNet Steering Group either for platform presentation or for poster presentation.

The template for submission of abstracts can be found on www.sednet.org.

Deadline

Deadline for submission of abstracts is **15 January 2015**.

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Reminder

9th International SedNet Conference, 23-26 September 2015, Krakow, Poland

“Solving societal challenges; working with sediments”

The conference is hosted and co-organized by the Faculty of Geology, Geophysics and Environmental Protection, AGH University of Science and Technology.

Call for Abstracts

SedNet would be pleased to receive abstracts for oral or poster presentation, addressing one or more of the following topics:

- Sediments and society
- Valuing sediments and their services
- Sediment quality and perception
- Understanding sediment fluxes and budgets on a river basin scale
- Restoring sediment continuity (WFD)
- Best practices in sediment management
- Dredged material management in rivers and lakes
- Building with dredged material
- Sediment management in mountainous regions
- Sediment in historical and recent mining areas
- Sediment issues in Poland

Abstracts on these topics will preferably point out the link between society and sediments and relate to its ecosystem functions. Also process-related studies of sediment transport and budget in rivers are welcome that help to understand the sediment-water-soil system. The meaning of effect-oriented research will be a topic as well as the identification of future challenges and perspectives.

Abstracts will be selected by the SedNet Steering Group either for platform presentation or for poster presentation.

Please see www.sednet.org for the full text of the [Call](#) and the [template](#) for abstracts.

Deadline

Deadline for submission of abstracts is **15 January 2015**.

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Sediments: putting the ‘morph’ into WFD hydromorphology

After more than 10 years, the EU-level Common Implementation Strategy

(CIS) through which Water Framework Directive implementation issues are discussed and agreed is still very active. Working Groups under this process are open to both Member State and stakeholder representatives, who work collaboratively to facilitate information exchange (e.g. through workshops) and in some cases to produce guidance documents.

Current Working Groups under the WFD CIS 2013 – 2015 Work Programme include those dealing with:

- ecological status
- groundwater
- chemicals
- ecological flows
- programmes of measures (PoMs)
- floods
- agriculture
- economics
- data/information sharing.

The [PIANC-led WFD Navigation Task Group](#) *inter alia* provides an opportunity for representatives of the wider navigation sector to participate in relevant activities under the CIS process. Over the years, the Task Group has been represented in a number of CIS Working Groups. It is currently represented in a corresponding or participating capacity in four: ecological status, chemicals, ecological flows, and programmes of measures.

CIS programmes of measures activity

In addition to having a mandate from Water Directors to address the specific topics of water re-use, leakage, and natural water retention measures, an aim of the PoMs Working Group is to help improve understanding of the links between WFD 'pressures' and 'measures'.

Two of the most significant pressures in most Member States first round River Basin Management Plans were hydromorphology and diffuse pollution. Notwithstanding the aims of the Working Group, however, by mid-2014:

- there had been very little discussion about hydromorphological issues, and on the occasions when reference was made to activities ongoing elsewhere in the CIS process (for example, on e-flows) the focus was almost inevitably on hydrology. The difference between hydrology and morphology seemed to be poorly understood; and
- any references made to sediments during Group discussions - for example in the context of measures to be reported in the second round RBMPs or the work on natural water retention measures - were inevitably made in the context of materials in suspension being a contaminant. The need for measures to manage (reduce) sediment in run-off from agricultural or urban areas was commonly cited.

The role of sediments as a vital component in many natural aquatic ecosystems, in turn supporting the delivery of the WFD's hydromorphology objectives, was simply not acknowledged.

Sediments in the WFD

Following her umpteenth intervention highlighting the essential role of sediments in natural physical systems, Jan Brooke (the Navigation Task Group representative on the PoMs Working Group) was invited to prepare a presentation on sediments for the Working Group's October 2014 meeting.

In the context of the discussions that had (or rather had not!) taken place in the Working Group meetings, Jan's non-technical presentation had two simple objectives:

1. to redress the negative perception of sediments by providing a simple but logical explanation of the role of sediments in the natural aquatic systems of interest to the WFD;
2. at the same time highlighting the need for more attention to hydromorphology, notably morphology, within the WFD implementation process.

Jan's presentation – which was developed with the support of, and draws on previous presentations delivered by, SedNet members - can be accessed [here](#).



Emerging pollutants may be posing a significant ecological and human health risk through their presence in water bodies. We do not know enough of them to assess and manage this risk. The EU 7th Framework Programme project SOLUTIONS addresses this issue. [1]. The project targets the development of evidence-based environmental policies with regard to water quality and its protection against contamination. SOLUTIONS combines monitoring and modelling-based approaches towards the prioritisation of emerging contaminants and the assessment of abatement options.

Sediment being a relevant carrier and “destination” of chemicals, SOLUTIONS will be addressing emerging compounds in suspended particulate matter (SPM) and in aquatic sediments as well. Modeling the emissions and fate & transport of a mixtures of emerging compounds (in the order of 10,000s) in all European River Basins will provide insights in the quantities emerging compounds ending up in SPM and aquatic sediments, and how substances properties, emission patterns and basin characteristics affect this. On top, SOLUTIONS will develop novel Chemical Analytical Tools and Ecological Assessment Tools suited for the investigation of aquatic sediments in the field.

SOLUTIONS has just started the second out of 5 project years. Keep track of progress on www.solutions-project.eu.



*Working on SOLUTIONS during the Joint Danube Survey 3
(Photo: André Künzelmann, UFZ Public Relations Department on behalf of SOLUTIONS)*

Reference:

[1] W. Brack and 48 co-authors. *The SOLUTIONS project: Challenges and responses for present and future emerging pollutants in land and water resources management*. Science of The Total Environment, Volumes 503–504, Pages 22–31, 15 January 2015.

A module “Sediment” for sediment quality assessment in Switzerland

From January 2015 the Swiss Centre for Applied Ecotoxicology together with the Swiss Federal Institute of Aquatic Science and Technology (EAWAG) and the Federal Office of the Environment (FOEN) will work to upgrade the framework of the modular monitoring procedure for surface waters with adapted methods for the assessment of the quality of sediments from Swiss water bodies.

According to the Swiss Water Protection Act of 24.1.1991, surface waters must be protected from negative influences -including pollution- in order to fulfil their numerous functions as habitats for plants and animals and ecosystem services. This legal instrument stems from the concept of

comprehensive protection and, to achieve its goal, requires the assessment of a broad range of ecosystem functions and pollution sources. In practice, it is accomplished through surveys at three different intensity levels - regional, water course, and section level - using a modular monitoring procedure (www.modul-stufen-konzept.ch). Modules include hydrology, ecomorphology, biology (banks and surrounding vegetation, higher water and marsh plants, algae, makrozoobenthos, fish), water chemistry and ecotoxicology. The cantonal services are in charge of implementing monitoring programmes through harmonised methodologies developed for each module.

The Swiss Water Protection Ordinance of 28.10.1998 stated that sediments must not contain accumulated persistent pollutants to ensure the protection of aquatic life but only some cantons have considered sediments within their monitoring programmes for surface waters. The absence of guidance documents for sediment quality assessment is preventing further implementation. From January 2015 the Swiss Centre for Applied Ecotoxicology together with the Swiss Federal Institute of Aquatic Science and Technology (EAWAG) and the Federal Office of the Environment (FOEN) will develop adapted methods for the assessment of the quality of sediments from Swiss water bodies within the framework of the modular monitoring procedure for surface waters. The project will develop a module "Sediment" conceived to aid cantonal and private services and to support the cantonal water protection institutions to fulfil their obligations regarding water protection. The module will complement the existing modules allowing a more comprehensive assessment of Swiss surface waters.

The first phase of the project will deliver recommendations for the assessment of the chemical state of sediments together with a guidance for sampling and analysis. It will also recommend sediment quality criteria for the assessment of sediment quality and an evaluation system in line with the modular monitoring procedure.

Further information: Carmen Casado (Carmen.Casado@centrecotox.ch); Benoit Ferrari (Benoit.Ferrari@centrecotox.ch).

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Contaminated sediments – a good practice guidance

Call for project partners

It Sediments play multiple roles in the environment. They may carry contaminants, a habitat and a resource or indeed all three. Contaminated sediments have the potential to pose a risk to human health and the environment and to impact commercial, recreational, and navigational uses of waterways.

Management of large-scale contaminated sediment, remedial investigations and remediation projects can be resource-intensive. In the US investigative efforts often cost tens of millions of dollars. Several of the larger superfund cleanups in the USA are now approaching in excess of \$500M, and these include some high profile project e.g. the Housatonic River, Passaic River, and Lower Duwamish River.

In the past decade, numerous guidance and reports were published in the US, Canada, Australia and Europe on different aspects of contaminated sediments management - both for the marine and inland waters. Almost 20 years ago, CIRIA publication R 175 Guidance on the disposal of dredged material in land has provided some guidance in sampling and which was then valid clean up standard for contaminated sediments (ICRCL). More recently in the UK, CEFAS, SEPA, EA, DEFRA etc. have also produced guidance on dealing with sediments.

These guidance documents and projects are very country/region/sector specific. There are few comparative studies to determine how these could be relevant to UK. In addition, the majority of the publications are about dredging and disposal activities.

In the UK, recently there have been more dredging to mitigate flooding but as

the country got the capacity to deal with increasing volume particularly if the materials are contaminated?

CIRIA proposal 2943 *Contaminated sediments – a good practice guidance for the UK industry 2014* will:

- develop a unified framework for implementing a risk based approach for contaminated sediments in inland waters and marine environment which will allow practitioners in UK to perform options appraisals when dealing with contaminated sediments.
- create a level playing field about how deals with contaminated sediments
- sign post and show people what and where existing and recent studies and publications
- a gap analysis to show these work cover and not cover.
- further improve sampling and analysis of sediments.
- As freshwater (esp. rivers, ports, harbour and canals) - there have been calls for more dredging in some parts of the UK to mitigate flooding. What implications will this have on the biota and the wider environment if the sediments are contaminated and how dredging could be carried out sustainably?
- As for *marine environment* - what are the different options other than dredging – what are their cost and benefits
- show case good practice including examples and cost benefits analysis in UK and other countries e.g. US

Would you like to receive further information? Or are you interested to join the projectteam?

Please contact: Joanne Kwan, CIRIA, UK

Ph +44 20 7549 3300, Email joanne.kwan@ciria.org.

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Upcoming events

11-14 December 2014: IAHS/ICCE 2014 international symposium – Sediment Dynamics: From the Summit to the Sea, New Orleans, USA.
www.mr.lsu.edu

12-15 January 2015: Battelle 8th International Conference on Remediation and Management of Contaminated Sediments, New Orleans, Louisiana USA.
www.battelle.org

22-27 February 2015: ASLO – Aquatic Sciences Meeting, Granada, Spain. Special Session (SS114) on Multiple stressors in river ecosystems: challenges for conservation and management.
<http://sgmeet.com/aslo/granada2015/>

8-13 March 2015: ContaSed - International scientific conference on Contaminated Sediments: Environmental Chemistry, Ecotoxicology and Engineering, Switzerland.
Further information: www.contased.org

3-7 May 2015: SETAC Europe 25th Annual Meeting in Barcelona.
More info: www.barcelona.setac.org

4-5 June 2015: Marine sand and gravel - finding common ground; [EMSAGG 2015 Conference](#) in Delft, the Netherlands

9-12 June 2015: 13th International AquaConSoil Conference on sustainable use and management of soil, sediment and (ground)water resources, Copenhagen, Denmark
Further information: www.aquaconsoil.org

22-26 June 2015: IS.RIVERS - International conference Integrative Sciences and sustainable development of rivers - ZABR - Lyon, FRANCE, organised by GRAIE and ZABR
Call for abstracts is now open.
Full details about the conference can be found at: www.isrivers.org

24-25 June 2015: Final Conference ARCH (Architecture and Roadmap to Manage Multiple Pressures on Lagoons), Newcastle University, UK. Deadline to submit abstracts is **20th February 2015**. Participation is free, registration at conferences.ncl.ac.uk/arch. For more info about the conference contact paul.cowie@ncl.ac.uk. More info about ARCH on www.arch-fp7.eu.

6-9 September 2015: ECSA 55 – Unbounded boundaries and shifting baselines: Estuaries and coastal seas in a rapidly changing world, London, UK. Abstracts for presentations can be submitted until **27 March 2015**. www.estuarinecoastalconference.com

7-11 September 2015: PIANC-SMART Rivers Conference in Buenos Aires, Argentina. Conference Topics are: information services and technology for inland waterway transport, international and transboundary collaboration in inland waterway transport and river management, integration of inland waterway transport in the inter modal supply chain, inland waterway transport and the environment (including climate change), inland ports and waterways, hydraulic structures, multi purpose use of river systems (e.g. transport, energy, etc.), operational management & maintenance of waterways, case studies of big fluvial navigation systems, inland recreational navigation and waterfront areas
Call for abstracts closes **January 1, 2015**.
See www.pianc.org.ar or contact smartrivers2015@aadip.org.ar for any questions regarding PIANC-SMART Rivers 2015.

23-26 September 2015: 9th International SedNet Conference: Solving societal challenges: working with sediments, Kraków, Poland. Including Special Session on the **Impact of Fine Sediment on Ecology**. Hosted and co-organised by AGH University of Science and Technology, Kraków, Poland.
Deadline for submitting abstracts: **15 January 2015**.
[More info here.](#)

Preliminary dates 2016

27-28 September 2016: the 9th Rostock dredged material seminar will be held prospectively on 27 to 28 September 2016, Rostock, Germany. Documents about the previous seminar can be found at www2.auf.uni-rostock.de

October 2016: International Magdeburger Seminar on River Protection, to be held in in the city of Dresden, Germany. Main topics will be urban waters and its management.
www.ikse-mkol.org

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