Natural and Constructed Wetlands

Jan Vymazal
Editor

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Nutrients, heavy metals and energy cycling, and flow

Springer

Editor
Jan Vymazal
Faculty of Environmental Sciences
Czech University of Life Sciences Prague
Praha, Czech Republic

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Preface

Wetlands are extremely diverse not only for their physical characteristics and geographical distribution but also due to the variable ecosystem services they provide. Wetlands provide many important services to human society but are at the same time ecologically sensitive and adaptive systems. The most important wetland ecological services are flood control, groundwater replenishment, shoreline stabilization and protection, sediment and nutrient retention, water purification, biodiversity maintenance, wetland products, cultural and recreational values, and climate change mitigation and adaptation. The ecosystem services are provided by natural wetlands but also by constructed wetlands. Constructed wetlands utilize all natural processes (physical, physicochemical, biological) that occur in natural wetlands but do so under more controlled conditions. The constructed wetlands have primarily been used to treat various types of wastewater, but water retention, enhanced biodiversity, and wildlife habitat creation are the important goals as well. The necessity of bridging knowledge on natural and constructed wetlands was the driving force behind the organization of the International Workshop on Nutrient Cycling and Retention in Natural and Constructed Wetlands which was first held at Třeboň, Czech Republic, in 1995. The workshop was very successful and naturally evolved in a continuation of this event in future years.

The ninth edition of the workshop was held at Třeboň on March 25–29, 2015. The workshop was attended by 36 participants from 15 countries of Europe, North America, Asia, and Australia. This volume contains a selection of papers presented during the conference. The papers dealing with natural wetlands are aimed at several important topics that include the role of riparian wetlands in retention and removal of nitrogen, decomposition of macrophytes in relation to water depth, and consequent potential sequestration of carbon in the sediment and a methodological discussion of an appropriate number of sampling for denitrification or occurrence of the genus *Potamogeton* in Slovenian watercourses. The topics dealing with the use constructed wetlands include among others removal of nutrients from various types of wastewater (agricultural, municipal, industrial, landfill leachate) on local as well as catchment scale and removal of heavy metals and trace organic compounds. Two

papers also deal with the effect of wetlands in the mitigation of global warming and the effect of drainage and deforestation in climate warming.

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Praha, Czech Republic Jan Vymazal
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Contents

Contributors

Dario Ortega Anderez Science and Technology, Nottingham Trent University, Nottingham, UK

Hannele Auvinen Laboratory of Industrial Water and Ecotecnology, Ghent University Campus Kortrijk, Kortrijk, Belgium

Laboratory of Analytical Chemistry and Applied Ecochemistry, Ghent University, Ghent, Belgium

Stanisław Baran Faculty of Agrobioengineering, Institute of Soil Science, Engineering and Environmental Engineering, University of Life Science in Lublin, Lublin, Poland

Carmelo Basile Fattoria della Piana, Reggio Calabria, Italy

Herbert John Bavor Water Research Laboratory, University of Western Sydney – Hawkesbury, Penrith, Australia

Anne-Grete Buseth Blankenberg Environment and Climate Division, NIBIO – Norwegian Institute of Bioeconomy Research, Aas, Norway

Riccardo Bresciani IRIDRA S.r.l., Florence, Italy

Tereza Dvořáková Březinová Faculty of Environmental Sciences, Department of Applied Ecology, Czech University of Life Sciences in Prague, Praha, Czech Republic

Aliana Britson Geography Department, Penn State University, University Park, PA, USA

Yi Chen Faculty of Environmental Sciences, Department of Applied Ecology, Czech University of Life Sciences in Prague, Praha, Czech Republic

Zhongbing Chen College of Resources and Environment, Huazhong Agricultural University, Wuhan, China

Faculty of Environmental Sciences, Department of Applied Ecology, Czech University of Life Sciences in Prague, Praha, Czech Republic

Johannes Deelstra Environment and Climate Division, NIBIO – Norwegian Institute of Bioeconomy Research, Aas, Norway

Gijs Du Laing Laboratory of Analytical Chemistry and Applied Ecochemistry, Ghent University, Ghent, Belgium

M. Siobhan Fennessy Biology Department, Kenyon College, Gambier, OH, USA

Alenka Gaberščik Biotechnical Faculty, Department of Biology, University of Ljubljana, Ljubljana, Slovenia

Magdalena Gajewska Faculty of Civil and Environmental Engineering, Department of Water and Wastewater Technology, Gdańsk University of Technology, Gdańsk, Poland

Joan García GEMMA-Group of Environmental Engineering and Microbiology, Department of Civil and Environmental Engineering, Universitat Politècnica de Catalunya-BarcelonaTech, Barcelona, Spain

Mateja Germ Biotechnical Faculty, Department of Biology, University of Ljubljana, Ljubljana, Slovenia

Magdalena Gizińska-Górna Faculty of Production Engineering, Department of Environmental Engineering and Geodesy, University of Life Sciences in Lublin, Lublin, Poland

Ketil Haarstad Environment and Climate Division, NIBIO – Norwegian Institute of Bioeconomy Research, Aas, Norway

David Harper University of Leicester, Leicester, UK

Patrick Hawes ARM Ltd, Rugeley, Staffordshire, UK

Guro Hensel Environment and Climate Division, NIBIO – Norwegian Institute of Bioeconomy Research, Aas, Norway

Petra Hesslerová ENKI, o.p.s. Dukelská 145, Třeboň, Czech Republic

Diana Hewitt Institute of Sanitary Engineering and Water Pollution Control, University of Natural Resources and Life Sciences, Vienna (BOKU University), Vienna, Austria

Theodore Hughes-Riley Science and Technology, Nottingham Trent University, Nottingham, UK

Hanna Huryna ENKI, o.p.s. Dukelská 145, Třeboň, Czech Republic

Krzysztof Jóźwiakowski Faculty of Production Engineering, Department of Environmental Engineering and Geodesy, University of Life Sciences in Lublin, Lublin, Poland

Katarzyna Kołecka Faculty of Civil and Environmental Engineering, Department of Water and Wastewater Technology, Gdańsk University of Technology, Gdańsk, Poland

Alina Kowalczyk-Juśko Faculty of Production Engineering, Department of Environmental Engineering and Geodesy, University of Life Sciences in Lublin, Lublin, Poland

Robert Kufel "Ceramika Kufel" Robert Kufel, Kraśnik, Poland

Urška Kuhar Biotechnical Faculty, Department of Biology, University of Ljubljana, Ljubljana, Slovenia

Peter Kuschk Department of Environmental Biotechnology, Helmholtz Centre for Environmental Research–UFZ, Leipzig, Germany

Pawan K. Labhasetwar CSIR – National Environmental Engineering Research Institute (NEERI), Nagpur, Maharashtra, India

Günter Langergraber Institute of Sanitary Engineering and Water Pollution Control, University of Natural Resources and Life Sciences, Vienna (BOKU University), Vienna, Austria

Trond Mæhlum Environment and Climate Division, NIBIO – Norwegian Institute of Bioeconomy Research, Aas, Norway

Arkadiusz Malik Faculty of Production Engineering, Department of Environmental Engineering and Geodesy, University of Life Sciences in Lublin, Lublin, Poland

Michał Marzec Faculty of Production Engineering, Department of Environmental Engineering and Geodesy, University of Life Sciences in Lublin, Lublin, Poland

Fabio Masi IRIDRA S.r.l., Florence, Italy

Erik Meers Laboratory of Analytical Chemistry and Applied Ecochemistry, Ghent University, Ghent, Belgium

Katie Meinhold ttz Bremerhaven, Bremerhaven, Germany

Korneliusz Miksch Faculty of Power and Environmental Engineering, Environmental Biotechnology Department, Silesian University of Technology, Gliwice, Poland

Centre for Biotechnology, Silesian University of Technology, Gliwice, Poland

Jessica Moon Biology Department, University of Arkansas, Fayetteville, AK, USA

Robert H. Morris Science and Technology, Nottingham Trent University, Nottingham, UK

Michael I. Newton Science and Technology, Nottingham Trent University, Nottingham, UK

Sandra Nicolics Institute of Sanitary Engineering and Water Pollution Control, University of Natural Resources and Life Sciences, Vienna (BOKU University), Vienna, Austria

Hanna Obarska-Pempkowiak Faculty of Civil and Environmental Engineering, Department of Water and Wastewater Technology, Gdańsk University of Technology, Gdańsk, Poland

Dayanand Panse Ecosan Service Foundation, Pune, Maharashtra, India

Lisa Paruch Environment and Climate Division, NIBIO – Norwegian Institute of Bioeconomy Research, Aas, Norway

Adam M. Paruch Environment and Climate Division, NIBIO – Norwegian Institute of Bioeconomy Research, Aas, Norway

Jan Pokorný ENKI, o.p.s. Dukelská 145, Třeboň, Czech Republic

Girish R. Pophali CSIR – National Environmental Engineering Research Institute (NEERI), Nagpur, Maharashtra, India

Jaume Puigagut GEMMA-Group of Environmental Engineering and Microbiology, Department of Civil and Environmental Engineering, Universitat Politècnica de Catalunya-BarcelonaTech, Barcelona, Spain

Aneta Pytka Faculty of Production Engineering, Department of Environmental Engineering and Geodesy, University of Life Sciences in Lublin, Lublin, Poland

Anacleto Rizzo IRIDRA S.r.l., Florence, Italy

Diederik P.L. Rousseau Laboratory of Industrial Water and Ecotecnology, Ghent University Campus Kortrijk, Kortrijk, Belgium

Marco Schmidt Technische Universität Berlin, Berlin, Germany

Batdelger Shinen Hygiene and Human Ecology Sector, National Center of Public Health, Ulaanbaatar, Mongolia

Adam Sochacki Faculty of Power and Environmental Engineering, Environmental Biotechnology Department, Silesian University of Technology, Gliwice, Poland

Centre for Biotechnology, Silesian University of Technology, Gliwice, Poland

Bożena Sosnowska Faculty of Food Science and Biotechnology, Department of Biotechnology, Human Nutrition and Food Commodity, University of Life Sciences in Lublin, Lublin, Poland

Enrica Uggetti GEMMA-Group of Environmental Engineering and Microbiology, Department of Civil and Environmental Engineering, Universitat Politècnica de Catalunya-BarcelonaTech, Barcelona, Spain

Jan Vymazal Faculty of Environmental Sciences, Department of Applied Ecology, Czech University of Life Sciences in Prague, Praha, Czech Republic

Denice H. Wardrop Geography Department, Penn State University, University Park, PA, USA

Yue Wen College of Environmental Science and Engineering, Tongji University, Shanghai, People's Republic of China

Qi Zhou College of Environmental Science and Engineering, Tongji University, Shanghai, People's Republic of China