

International Symposium

ISEHCNC/2017 **ECOHYDROLOGY**



for the **Circular Economy**
and **Nature-Based Solutions**
towards mitigation/adaptation
to **Climate Change**

26 – 28 September 2017
LODZ. POLAND

FINAL PROGRAMME

MONDAY 25th September	
	Accommodation & Logistics
TUESDAY 26th September	
8.00 – 09:00	Registration
9:00 – 10:00	Welcome and Rationale Maciej Zalewski , <i>Chairman of the Symposium Steering Committee, Director of the European Regional Centre for Ecohydrology of the Polish Academy of Sciences u/a UNESCO and Department of Applied Ecology, University of Łódź, Poland</i> Jarosław Gowin , <i>Minister of Science and Higher Education of the Republic of Poland</i> Hanna Zdanowska , <i>President of the City of Łódź</i> Antoni Różalski , <i>Rector of the University of Łódź, Poland</i> Paweł Rowiński , <i>Vice-President of the Polish Academy of Science</i> Giuseppe Arduino , <i>Division of Water Sciences, UNESCO International Hydrological Programme</i> Giovanni Bidoglio , <i>European Commission, DG Joint Research Centre, Directorate Sustainable Resources</i>
10:00 – 10:30	Concert of classical music by the Students of the Music Academy of Łódź
	INTEGRATIVE KNOWLEDGE TOWARDS SUSTAINABLE SCIENCE
SESSION I	CHAIRS: PAWEŁ ROWIŃSKI , VICE-PRESIDENT OF THE POLISH ACADEMY OF SCIENCE YUN XIA , ACADEMICIAN OF CHINESE ACADEMY OF SCIENCES (CAS), CHAIR PROFESSOR & DIRECTOR OF THE RESEARCH INSTITUTE FOR WATER SECURITY (RIWS), WUHAN UNIVERSITY, CHINA
10:30 – 10:50	ECOHYDROLOGY UNESCO IHP: PAST, PRESENT AND FUTURE PERSPECTIVE FOR THE RESPONSIBLE, PROBLEM-SOLVING SCIENCE Giuseppe Arduino , <i>Division of Water Sciences, UNESCO International Hydrological Programme</i>
10:50 – 11:10	CLOSING THE WATER RESOURCES LOOP: GOING BEYOND SECTORAL ACTIVITIES Giovanni Bidoglio , <i>European Commission, DG Joint Research Centre, Directorate Sustainable Resources</i>
11:10 – 11:30	NATURE-BASED SOLUTIONS FOR WATER AND WASTEWATER MANAGEMENT IN A CIRCULAR ECONOMY Stefan Uhlenbrook , <i>United Nations World Water Assessment Programme (WWAP), Director of the Programme Office on Global Water Assessment</i>
11:30 – 11:50	WHOSE NATURE? WHAT SOLUTIONS? Peter Bridgewater , <i>Institute of Applied Ecology and Institute of Governance and Policy Analysis, University of Canberra, Australia</i>

11:50 – 12:20	COFFEE BREAK & POSTER SESSION
Session II	CHAIRS: GIUSEPPE ARDUINO, DIVISION OF WATER SCIENCES, UNESCO INTERNATIONAL HYDROLOGICAL PROGRAMME REBECA GONZÁLEZ VILLELA, MEXICAN INSTITUTE OF WATER TECHNOLOGY, MEXICO
12:20 – 12:40	FORESIGHT AS A TOOL SUPPORTING THE DEVELOPMENT OF CIRCULAR BIOECONOMY Anna Rogut , Entrepreneurship and Economic Development Research Institute; Chair of the Council of the National Center for Research and Development, Poland
12:40 – 13:00	BIOLOGICAL ASPECTS OF THE HYDROLOGICAL CYCLE UNDER THE SPECTER OF GLOBAL CHANGE Charles Vorosmarty , <i>Advanced Science Research Center, Environmental Sciences Initiative, City College of New York, USA</i>
13:00 – 13:20	CLASSIFICATION OF MACROHABITATS: A POWERFUL TOOL FOR COMPARATIVE STUDIES, SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL IMPACT ANALYSIS IN WETLANDS. Wolfgang Junk , <i>National Institute for Science and Technology in Wetlands (INCT-INAU), Federal University of Mato Grosso (UFMT), Cuiabá, MT, Brazil</i>
13:20 – 13:40	RESERVOIRS: CHALLENGES FOR ECOSYSTEM STUDIES AND INTEGRATION OF ENVIRONMENTAL MANAGEMENT Jose Tundisi , <i>International Institute of Ecology; Universidade Feevale, Novo Hamburgo, RGS; Instituto Acqua MCT/CNPQ, UFMG, Brazil</i>
13:40 – 14:00	PERSPECTIVE ON ECO-HYDROLOGY DEVELOPING STRATEGY IN CHINA Yun Xia , <i>Academician of Chinese Academy of Sciences (CAS), Chair Professor & Director of the Research Institute for Water Security (RIWS), Wuhan University, China</i>
14:00 – 14:40	LUNCH & POSTER SESSION (E&H Journal Stand – interested authors can discuss their papers with editor)
Session III	CHAIRS: SHAHBAZ KHAN, DIRECTOR OF THE REGIONAL SCIENCE BUREAU FOR ASIA AND THE PACIFIC, UNESCO JAKARTA STEFANO FAZI, IRSA-CNR WATER RESEARCH INSTITUTE, NATIONAL RESEARCH COUNCIL OF ITALY
14:40 – 15:00	HOW VEGETATION CAN AID US IN COPING WITH RIVER MANAGEMENT CHALLENGES? Paweł Rowiński , <i>Vice-President Of The Polish Academy Of Science</i>
15:00 – 15:20	RESERVOIR CARBON CYCLING AND MANAGEMENT IN CHINA'S LARGE HYDRO-PROJECTS - FROM THE PERSPECTIVE OF ECOHYDROLOGY Zhe Li , <i>Key Laboratory of Reservoir Environment, Chinese Academy of Sciences, Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences</i>
15:20 – 15:40	IEA TECHNOLOGY COLLABORATION PROGRAMME ON HYDROPOWER (IEA HYDRO) - GUIDELINES FOR QUANTITATIVE ANALYSIS OF NET GHG EMISSIONS FROM RESERVOIRS Niels Nielsen , <i>Executive Secretary, International Energy Agency Technology Collaboration Programme on Hydropower</i>
15:40 – 16:00	FOOD SECURITY: EVOLUTION OF BIOPHYSICAL REDUNDANCY AND FUTURE WATER, LAND AND PRODUCTIVITY REQUIREMENTS Marianela Fader , <i>International Centre for Water Resources and Global Change (UNESCO), Germany</i>
16:00 – 16:20	CLIMATE CHANGE IMPACTS ON WATER RESOURCES – CONSEQUENCES OF UNCERTAINTY FOR MANAGEMENT Zbigniew Kundzewicz , <i>Laboratory of Climate and Water Resources, Institute for Agricultural and Forest Environment of the Polish Academy of Sciences; Member of the Intergovernmental Panel on Climate Change (IPCC), Poland</i>
16:20 – 16:40	WATER DRAMA IN THE ANTHROPOCENE: ECOHYDROLOGY TOWARDS A RESILIENCE-BASED PERSPECTIVE ON WATER FOR MAN AND RIVER BASIN SUSTAINABILITY Edyta Kiedrzyńska , <i>European Regional Centre for Ecohydrology of the Polish Academy of Science, Poland</i>
16:40 – 17:00	BIOCOMMUNITIES AT HEART OF THE CIRCULAR SUSTAINABLE BIOECONOMY Andrzej Siemaszko , <i>Marshall office Liaison</i>
17:00 – 17:20	HEALTH EFFECTS OF CLIMATE CHANGE - THEIR CONTRIBUTION TO POVERTY AND HEALTH INEQUITIES Wojciech Hanke , <i>Nofer Institute of Occupational Medicine in Lodz, Poland</i>
	Summary of the first day
18:30 – 22:00	City Tours

WEDNESDAY 27th September

8.30 – 9:00	Registration	
9:00 – 10:30	Plenary lectures: ECOHYDROLOGY: A NATURE BASED SOLUTION FOR THE CIRCULAR ECONOMY CONCEPT - Luis CHICHARO , <i>University of Algarve, UNESCO-Chair in Ecohydrology: water for ecosystems and societies, CIMA, Faro, Portugal</i> THE SCHELDE FROM PAST TO FUTURE: AN INTEGRATED ECOHYDROLOGICAL APPROACH FOR RESTORATION - Patrick Meire , <i>University of Antwerp, Department of Biology, Ecosystem Management Research Group, Belgium</i> ASIAN PERSPECTIVE ON WATER, BIODIVERSITY, ECOSYSTEM SERVICES, RESILIENCE AND CULTURAL HERITAGE (WBSRC CONCEPT) - Shahbaz Khan , <i>Director Of The Regional Science Bureau For Asia And The Pacific, Unesco Jakarta</i>	
10:30 – 11:00	COFFEE BREAK & POSTER SESSION	
	4th symposium of Healthy Rivers and Sustainable Water Resource Management Reservoir carbon cycling and GHG fluxes: from the perspective of Ecohydrology for Mitigation and Adaptation to Climate Change CHAIRS: JINSON GUO, ZHE LI, MACIEJ ZALEWSKI	Water and Environment as a Critical Component of Circular Economy CHAIRS: GIOVANNI BIDOGLIO, CHARLES VOROSMARTY
11:00 – 11:20	A PRELIMINARY STUDY AND UNCERTAINTY OF CARBON BALANCE IN PENXI RIVER OF THE THREE GORGES RESERVOIR Zhe Li, Jinsong Guo , <i>Key Lab of Reservoir Water Environment, Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences</i>	SYSTEM DYNAMICS MODELLING FOR SUSTAINABLE WATER RESOURCES MANAGEMENT IN THE KOR-SIVAND RIVER BASIN Saeid Eslamian , <i>Isfahan University of Technology, Iran</i>
11:20 – 11:40	ENVIRONMENTAL RESEARCH TO SUPPORT SUSTAINABLE HYDROPOWER Niels Nielsen , <i>Executive Secretary, International Energy Agency Technology Collaboration Programme on Hydropower</i>	CAN WE TRIGGER GREEN GROWTH IN ANTHROPOCENE? APPLYING SOCIO-ECOLOGICAL LENS TO BLUE-GREEN SOLUTIONS Kinga Krauze , <i>European Regional Centre for Ecohydrology of the Polish Academy of Sciences</i>
11:40 – 12:00	MICROBIAL PATHWAYS WHEN PASSING FROM LOTIC TO LENTIC ENVIRONMENTS Stefano Fazi , <i>IRSA-CNR Water Research Institute, National Research Council of Italy</i>	APPLYING ECOHYDROLOGY AS A NEW IWRM TOOL FOR ENSURING WATER SECURITY, BIODIVERSITY, ECOSYSTEM SERVICES AND RESILIENCE IN AFRICA – A CASE OF ETHIOPIA Yohannes Zerihun Negusse , <i>Ecohydrology Coordination Office, Ministry of Water, Irrigation and Electricity, Ethiopia</i>
12:00 – 12:20	CARBON DIOXIDE EMISSIONS FROM THE SHUIBUYA RESERVOIR OVER THE QINGJIANG RIVER BASIN, CHINA Tan Debao , <i>Changjiang River Scientific Research Institute, Hubei Key Laboratory of Water Resources & Eco-Environment Science, China</i>	WATER FOOTPRINT CALCULATION AS A STRATEGY TO REDUCE THE THREATS RELATED TO AN INDUSTRIAL SECTOR. STUDY CASE: TROUT PRODUCTION Isabel Hurtado , <i>Instituto Cinara de la Universidad del Valle, Cali, Colombia</i>
12:20 – 12:40	EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENTAL FLOWS IN THE CONCHOS RIVER (CHIHUAHUA. MEXICO) Rebeca González Villela , <i>Mexican Institute of Water Technology, Mexico</i>	BIOCHAR – POTENTIAL TOOL TO COMBAT CLIMATE CHANGE AND DROUGHT OUT Zbigniew Bis , <i>Department of Energy Engineering, Czestochowa University of Technology, Poland</i>
12:40 – 13:00	CARBON SEQUESTRATION IN A RESERVOIR ON THE YELLOW RIVER, CHINA Hong Yang , <i>State Key Laboratory of Water Resources and Hydropower Engineering Sciences, Wuhan University, China; Department of Geography and Environmental Science, University of Reading, UK</i>	THE KEY ROLE OF PAPYRUS IN THE ECOHYDROLOGY OF AFROTROPICAL SWAMPS Nick Pacini , <i>Department of Environmental and Chemical Engineering, University of Calabria, Italy</i>

13:00 – 13:30 COFFEE BREAK & POSTER SESSION		
4th symposium of Healthy Rivers and Sustainable Water Resource Management CHAIRS: MARIANELA FADER, TOMASZ OKRUSZKO		Water and Environment as a Critical Component of Circular Economy Session Supported by RPK H2020 CHAIRS: ANDRZEJ SIEMASZKO, JOLANTA PACURA, MICHAŁ KACZMAREK
13:30 – 13:50	FISH FAUNA RECOVERY AFTER LONG-TERM SEVERE DEGRADATION OF THE WARTA AND NER RIVERS Andrzej Kruk , <i>Department of Ecology and Vertebrate Zoology, Faculty of Biology and Environmental Protection, University of Łódź, Poland</i>	WATER SCARCITY IMPACT ASSESSMENT AND COMPANY WATER RESPONSIBILITY – APPLYING NEW METHODOLOGIES IN FINLAND Kirsi Usva , <i>Natural Resources Institute, Finland</i>
13:50 – 14:10	THE ECOHYDROLOGY OF THE MOUNTAIN PAMIR, CLIMATE ZONES AND THEIR METEOROLOGICAL FEATURES IN CONDITION OF THE CLIMATE CHANGE Parviz Normatov , <i>Institute of Water problems, Hydropower and Ecology of the Academy of Sciences of the Republic of Tajikistan</i>	DEFINING AND PILOTING A DECENTRALIZED, SUSTAINABLE AND COMPETITIVE OPERATING MODEL FOR THE GREEN ECONOMY Sirpa Kurppa , <i>Natural Resources Institute, Finland</i>
14:10 – 14:30	PHYSIOLOGICAL AND MORPHOLOGICAL RESPONSES OF TWO BLOOM-FORMING CYANOBACTERIA IN TURBULENT ENVIRONMENTS Yan Xiao , <i>CAS Key Laboratory on Reservoir Water Environment, Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences</i>	INCREASING THE QUALITY OF LIFE IN LATIN AMERICA AND CARIBBEAN: THE CASE STUDY OF THE WATERCLIMA LAC PROJECT Egle Juospaityte , <i>Europe for Business Ltd, London, UK</i>
14:30 – 14:50	INNOVATIVE TECHNIQUES TO DETECT THE EXISTENCE OF DISCONTINUITIES IN RIVER EMBANKMENTS DUE TO MAMMALIAN ACTION George N. Zaimes , <i>UNESCO CHAIR Con-E-Ect on Conservation and Ecotourism of Riparian and Deltaic Ecosystems, Eastern Macedonia and Thrace Institute of Technology, Greece</i>	REPAIR - RESOURCE MANAGEMENT IN PERI-URBAN AREAS: GOING BEYOND URBAN METABOLISM Małgorzata Grodzicka-Kowalczyk , <i>Pheno Horizon</i>
14:50 – 15:10	CONTROLLING HARMFUL ALGAL BLOOMS IN LAKE TAIHU AND THE THREE GORGES RESERVOIR, CHINA Dr. Jianrong Ma , <i>Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences</i>	SCREEN - SYNERGIC CIRCULAR ECONOMY ACROSS EUROPEAN REGIONS Marcin Podgórski / Ewa Gabryelak , <i>Marshal Office of Lodz Voivodeship, Poland</i>
15:10 – 16:00 LUNCH & POSTER SESSION (E&H Journal Stand – interested authors can discuss their papers with editor)		
4th symposium of Healthy Rivers and Sustainable Water Resource Management CHAIRS: LUIS CHICHARO, WOUTER VAN DE BUND		Water and Environment as a Critical Component of Circular Economy CHAIRS: JOSE TUNDISIS, KINGA KRAUZE
16:00 – 16:20	IMPACT OF MICROORGANISMS ON THE REGULATION OF MICROCYSTIN-PRODUCING CYANOBACTERIA Joanna Mankiewicz-Boczek , <i>European Regional Centre for Ecohydrology of the Polish Academy of Science, Department of Applied Ecology, Faculty of Biology and Environment Protection, University of Lodz, Poland</i>	CLIMATE PROJECTIONS FOR POLAND: UNDERSTANDING IMPACTS AND UNCERTAINTIES BEFORE ADAPTATION Mikołaj Piniewski , <i>Warsaw University of Life Sciences, Poland; Potsdam Institute for Climate Impacts Research, Germany</i>
16:20 – 16:40	ECOLOGICAL HEALTH ASSESSMENT OF THE SHATT AL-ARAB RIVER, IRAQ Abdul-Razak M. Mohamed , <i>Department of Fisheries and Marine Resources, College of Agriculture, University of Basrah, Iraq</i>	CIRCULAR BIOECONOMY - SOURCE OF NEW MATERIALS Danuta Ciechańska , <i>Institute of Biopolymers and Chemical Fibers, Lodz, Poland</i>
16:40 – 17:00	CO-VARIATIONS OF PHYTOPLANKTON AND BACTERIOPLANKTON IN A TRIBUTARY BACKWATER AREA OF THE YANGTZE INFLUENCED BY THE OPERATION OF CHINA'S THREE GORGES RESERVOIR Lunhui Lu , <i>Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences, China</i>	NITRATE REMOVAL FROM TILE DRAINAGE WATER USING WOODCHIP DENITRIFICATION BIOREACTORS Arvydas Povilaitis , <i>Aleksandras Stulginskis University, Lithuania</i>

17:00 – 17:20	<p>SPATIO-TEMPORAL DISTRIBUTION PATTERNS OF FISHES IN THE THREE GORGES DAM RESERVOIR AS RELATED TO ECOLOGICAL FACTORS</p> <p>Małgorzata Godlewska, <i>European Regional Centre for Ecohydrology of the Polish Academy of Science, Poland</i></p>	<p>BENEFICIAL MICROORGANISMS IMPROVING ORGANIC CULTIVATION OF HORTICULTURAL CROPS AND SOIL FERTILITY</p> <p>Paweł Trzciński, <i>Research Institute of Horticulture, Poland</i></p>
17:20 – 17:40	<p>EXTRACTION OF IRRIGATION AND DRAINAGE DITCHES BASED ON HIGH RESOLUTION REMOTE SENSING IMAGE—A CASE STUDY OF THE FARM AROUND HONGHE NATURE RESERVE</p> <p>Yunbao Fan, <i>College of Resource Environment and Tourism, Base of State Key Laboratory of Urban Environmental Process and Digital Simulation, Capital Normal University, China</i></p>	<p>BIOCHAR FLUID BRAND IN A SUSTAINABLE CIRCULAR ECONOMY</p> <p>– Presentation of the Symposium Partner</p>

19:00 – 22:00	GALA DINNER	
---------------	-------------	--

THURSDAY 28th September

9:00 – 10:00	<p>Panel Discussion: Reduction the barriers and building the bridges between science and management for the sustainable future</p> <p>Maciej Zalewski, Giuseppe Arduino: introduction and co-chairing Giovanni Bidoglio: European perspective for integration Circular Economy and Nature-Based Solutions for Sustainable Development Goals Yohannes Zerihun, Ecohydrology Coordination Office, Ministry of Water, Irrigation and Electricity Radosław Witkowski, President of the City of Radom (city with undergoing project ‘Adaptation to climate change through sustainable management of water of the urban area in Radom City’ EC Life Project) Gabriel Szkudlarek, Mayor of the City of Łask (development of reservoir that fulfill WBRSC all criteria) Radosław Łuczak, President of the Łódź Infrastructure Company Marcin Obijalski, Director of the Revitalisation Office of the City of Łódź Eryk Rawicki, Director of MOSIR, Łódź, Poland (EKOROB, EHREK – EC projects) Juliusz Szymczak-Gałkowski, Director of the International Cooperation Department, Ministry of Science and Higher Education Piotr Woldański, Bureau of the City of Łódź Architect (leader of city revitalization strategy) Elżbieta Królikowska-Kińska, Revitalization Advisor of the Marshal of Lodz Region Iwona Wagner, <i>FPP Enviro; Department of Applied Ecology, Faculty of Biology and Environment Protection, University of Lodz</i> Shahbaz Khan, <i>Director Of The Regional Science Bureau For Asia And The Pacific, UNESCO Jakarta</i></p>	
10:00 – 10:20	COFFEE BREAK & POSTER SESSION	
	<p>AMBER – Adaptative Management of Barriers in European Rivers (HORIZON 2020)</p> <p>CHAIRS: CARLOS GRACIA DE LEANIZ, MACIEJ ZALEWSKI</p>	<p>Ecohydrology, Nature-Based Solutions and Circular Economy for the City of Future and Landscape</p> <p>CHAIRS: ISABEL HURTADO & WOLFGANG JUNK</p>
10:20 – 10:40	<p>RECONNECTING EUROPE’S RIVERS: CHALLENGES & OPPORTUNITIES</p> <p>Carlos Garcia De Leaniz, <i>Swansea University, College of Science, Dept of BioSciences, CSAR, Swansea, UK</i></p>	<p>AMPLIFICATION OF THE SELF-PURIFICATION OF URBAN INTERMITTENT RIVERS IN COMPLEMENT TO FLOODING CONTROL</p> <p>Pascal Breil, <i>IRSTEA, France</i></p>
10:40 – 11:00	<p>METHODOLOGY AND PRACTICE OF THE INTEGRATED OPERATION OF WATER QUALITY, WATER QUANTITY AND WATER ECOLOGY IN HUAI RIVER BASIN, CHINA</p> <p>Jun Xia, <i>Research Institute for Water Security (RIWS), Wuhan Universit; Center for Water Resources Research, Chinese Academy of Sciences, China</i></p>	<p>HEAT WAVES IN THE CITY – IMPACT OF LOCAL SPATIAL DEVELOPMENT ON BIOCLIMATIC CONDITIONS</p> <p>Joanna Wibig, <i>University of Lodz, Poland</i></p>

11:00 – 11:20	LARGE-SCALE DATA FOR ADAPTIVE BARRIER MANAGEMENT: THE AMBER ATLAS Wouter Van De Bund , <i>European Commission DG Joint Research Centre, Ispra, Italy</i>	HYBRID SYSTEM FOR THE PURIFICATION OF STREET STORMWATER RUNOFF SUPPLYING URBAN RECREATION RESERVOIRS Tomasz Jurczak , <i>Department of Applied Ecology, Faculty of Biology and Environment Protection, University of Lodz, Poland</i>
11:20 – 11:40	ASSESSMENT OF TWO ECOHYDROLOGICAL ROLES OF THE RIVER CHANNEL CONNECTIVITY DISTURBED BY HUMAN BEINGS Demin Zhou , <i>College of Resource Environment and Tourism, Capital Normal University, China</i>	POTENTIAL RECOVERY OF THE QUERETARO RIVER FOR THE DEVELOPMENT OF AUTOMOTIVE INDUSTRIAL PARK Maria Antonieta Gomez-Balandra , <i>Instituto Mexicano de Tecnología del Agua, Mexico</i>
11:40 – 12:00	ECOHYDRAULIC MODELLING OF NESTOS RIVER DELTA UNDER LOW FLOW REGIMES Argyrios Sapounidis , <i>ELGO-Demeter, Fisheries Research Institute, Greece</i>	STORMWATER MANAGEMENT AND BLUE-GREEN INFRASTRUCTURE AS CLIMATE CHANGE ADAPTATION IN CITIES Iwona Wagner , <i>FPP Enviro; Department of Applied Ecology, Faculty of Biology and Environment Protection, University of Lodz, Poland</i>
12:00 – 12:20	ECOHYDROLOGICAL APPROACH, BASED ON LONG-TERM RESEARCH, TOWARDS MITIGATION, THROUGH ADAPTIVE MANAGEMENT, THE DAM EFFECT IN A LOWLAND PILICA RIVER, CENTRAL POLAND Piotr Frankiewicz , <i>European Regional Centre for Ecohydrology of the Polish Academy of Sciences; Department of Applied Ecology, Faculty of Biology and Environment Protection, University of Lodz, Poland</i>	UNDERSTANDING THE COMMUNITY IMPACTS OF URBAN LAKES AS STORMWATER MANAGEMENT SYSTEM IN WESTERN SYDNEY, AUSTRALIA Sai Kiran Natarajan , <i>Centre for Infrastructure Engineering, Western Sydney University, Australia</i>
12:20 – 12:40	AMBER PROJECT - WORK PACKAGE 2: IMPACTS OF BARRIERS ON STREAM HABITATS AND NATURAL CAPITAL Piotr Parasiewicz , <i>S. Sakowicz Inland Fisheries Institute, Poland</i>	GREEN ROOFS AS A COMPONENT OF SUSTAINABLE DRAINAGE SYSTEM Magdalena Gajewska , <i>Gdansk University of Technology, Faculty of Civil And Environmental Engineering Department Water and Waste-Water Technology, Poland</i>
12:40 – 13:00	RIPARIAN VEGETATION CHANGES IN THE NESTOS RIVER DELTA DUE TO THE CONSTRUCTION OF DAMS WITH THE USE OF VEGETATION INDICES George N. Zaimes , <i>UNESCO CHAIR Con-E-Ect on Conservation and Ecotourism of Riparian and Deltaic Ecosystems, Eastern Macedonia and Thrace Institute of Technology, Greece</i>	DENITRIFICATION BARRIERS/DEPOSITS AS A BIOTECHNOLOGY HYBRID TOOL FOR WATER PROTECTIONS AGAINST NITROGEN POLLUTION Agnieszka Bednarek , <i>European Regional Centre for Ecohydrology of the Polish Academy of Sciences, Department of Applied Ecology, Faculty of Biology and Environment Protection, University of Lodz</i>
13:00 – 13:20	USE OF UNMANNED AERIAL VEHICLES FOR MAPPING RIVER HABITATS Katarzyna Suska , <i>S. Sakowicz Inland Fisheries Institute, Poland</i>	COSTS AND BENEFITS OF RAINWATER HARVESTING AS CLIMATE CHANGE ADAPTATION OPTION IN RAIN FED POTOHAR REGION OF PAKISTAN Bareerah Fatima , <i>Pakistan Council of Research in Water Resources</i>
13:20 – 14:00	LUNCH & POSTER SESSION (E&H Journal Stand – interested authors can discuss their papers with editor)	
	Limnology and Ecohydrology for Nature-Based Solutions (SIL) CHAIRS: PATRICK MEIRE, ADRIANNA WOJTAL-FRANKIEWICZ	Ecohydrology, Nature-Based Solutions and Circular Economy for the City of Future and Landscape CHAIRS: PASCAL BREIL, IWONA WAGNER
14:00 – 14:20	NATURE-BASED SOLUTIONS FOR PROTECTION AND RESTORATION OF DEGRADED BIELSKO LAKE Ryszard Gołdyn , <i>Department of Water Protection, Adam Mickiewicz University, Poland</i>	SHALL WE USE SMALL WATER RETENTION MEASURES AS A TOOL TO OPTIMIZE SERVICES PROVIDED BY WATER SYSTEMS? Tomasz Okruszko , <i>Warsaw University of Life Sciences, Poland</i>

14:20 – 14:40	FROM LIMNOLOGY TO THE ECOHYDROLOGY - BIOLOGICAL INTERACTIONS AND THEIR MODIFICATIONS BY HYDROLOGICAL CONDITIONS IN THE DAM RESERVOIR Adrianna Wojtal-Frankiewicz , <i>Department of Applied Ecology, Faculty of Biology and Environment Protection, University of Lodz</i>	ENHANCED BUFFER ZONE AS AN IMPORTANT TOOL FOR REDUCTION OF DIFFUSE NITROGEN AND PHOSPHORUS POLLUTIONS Katarzyna Izydorczyk , <i>European Regional Centre for Ecohydrology of the Polish Academy of Sciences, Poland</i>
14:40 – 15:00	THE DIGITAL EXTRACTION OF THE FLOOD INUNDATION AREAS IN THE MARSH WETLAND OF HONGHE NATIONAL NATURAL RESERVE Lina Zhao , <i>College of Resource Environment and Tourism; Base of State Key Laboratory of Urban Environmental Process and Digital Simulation, Capital Normal University, China</i>	LAKE RESTORATION – HISTORICAL AND NEW APPROACHES Julita A. Dunalska , <i>Department of Water Protection Engineering, University of Warmia and Mazury in Olsztyn, Poland</i>
15:00 – 15:20	SPATIAL DISTRIBUTION AND ABUNDANCE OF FISH AND ZOOPLANKTON IN THE SULEJÓW RESERVOIR UNDER TOXIC CYANOBACTERIAL BLOOM AND NO BLOOM CONDITIONS Małgorzata Godlewska , <i>European Regional Centre for Ecohydrology, Polish Academy of Sciences</i>	ECO-WISE SOLUTION FOR ACHIEVING DRINKING WATER SECURITY IN UNDERPRIVILEGED TRIBAL REGION OF PAKISTAN Faizan ul Hasan , <i>Pakistan Council of Research in Water Resources (PCRWR)</i>
15:20 -15:40	INVENTORY OF APPARENT NITROGEN AND PHOSPHORUS BALANCE AND RISK OF POTENTIAL POLLUTION IN TYPICAL SLOPING CROPLAND OF PURPLE SOIL IN CHINA— A CASE STUDY IN THE THREE GORGES RESERVOIR REGION Wenjuan Ouyang , <i>Chongqing Institute of Green and Intelligent Technology, Chinese Academy of Sciences</i>	ACCELERATING IMPLEMENTATION OF SUSTAINABILITY GOALS IN SUBURBS THROUGH NEW DESIGN DEVELOPMENTS IN VFCWS Franciszek Bydątek , <i>University of Zielona Gora. Institute of Environmental Engineering, Poland</i>
15:40 – 16:00	FRESHWATER SPRING INDICATOR TAXA OF BENTHIC INVERTEBRATES Ye Sun , <i>Graduate School of Advanced Integrated Studies in Human Survivability, Kyoto University, Japan</i>	CLIMATE MAPS OF WARSAW Wojciech Szymalski , <i>Institute for Sustainable Development Foundation, Poland</i>
16:00 – 16:20	COFFEE BREAK & POSTER SESSION	
	<p>Summary and Conclusions by Chairs of the Symposium Sessions Chairs: Giuseppe Arduino, Maciej Zalewski Reporter of the symposium: SAEID ESLAMIAN Session I: PAWEŁ ROWIŃSKI, YUN XIA Session II: GIUSEPPE ARDUINO, REBECA GONZÁLEZ VILLELA Session III: SHAHBAZ KHAN, STEFANO FAZI</p> <p>4th symposium of Healthy Rivers and Sustainable Water Resource Management: JINSON GUO, ZHE LI</p> <p>Water and Environment as a Critical Component of Circular Economy: GIOVANNI BIDOGLIO, CHARLES VOROSMARTY</p> <p>AMBER – Adaptative Management of Barriers in European Rivers (HORIZON 2020): CARLOS GRACIA DE LEANIZ, PIOTR FRANKIEWICZ</p> <p>Ecohydrology, Nature-Based Solutions and Circular Economy for the City of Future and Landscape: ISABEL HURTADO, WOLFGANG JUNK, PASCAL BREIL</p> <p>Limnology and Ecohydrology for Nature-Based Solutions (SIL): PATRICK MEIRE, ADRIANNA WOJTAL-FRANKIEWICZ</p>	
16:20 – 17:00		