

**Conference Program****Monday, July 2, 2018**

- 09:00 – 13:00 Registration of participants
13:00 – 17:00 Meeting of IAD National representatives and Expert group leaders

Tuesday, July 3, 2018

- 09:00 – 13:00 Registration of participants
13:00 – 14:00 *Lunch break*

14:00 – 14:30 Opening - Welcome speeches*Keynote lectures***Chairman Cristina SANDU**

- 14:30 – 15:00 Thomas HEIN Changing Rivers - challenges for the management of ecosystem services and biodiversity in the Danube River
15:00 – 15:30 Jürg BLOESCH Danube Under Pressure – A Personal Analysis
15:30 – 16:00 Emília MIŠÍKOVÁ Slovak Danube River Assessment Based on Intercalibrated Biological Method for Macroinvertebrates
ELEXOVÁ
16:00 – 16:20 *Coffee break*

1st oral presentation session**Chairman Thomas HEIN**

- 16:20 – 16:35 Gertrud HAIDVOGL Sturgeons of the Austro-Hungarian Danube and sturgeon exploitation from the Middle Ages to the early 20th century
16:35 – 16:50 Jarmila MAKOVINSKÁ Water quality changes of the Slovak stretch of the River Danube
16:50 – 17:05 Marion GELHAUS The application of the River Ecosystem Service Index to a stretch along the upper Bavarian Danube
17:05 – 17:20 Jana FRIEDRICH DANUBIUS-RI: A new European Research Infrastructure for Advanced Studies on River-Sea Systems
17:20 – 17:35 Milan LEHOTSKÝ Insights into spatio-temporal changes in hydrological-sedimentary connectivity of the Slovak part of the Danube anabranching reach
17:35 – 17:50 Jarmila MAKOVINSKÁ Status assessment of the River Danube within two management plans
17:50 – 18:05 Mirjana LENHARDT Investigation of fish behavior at Iron Gate II Hydropower plant by acoustic telemetry
18:05 – 18:20 Srđan SUBOTIĆ Growth parameters of vimba bream (*Vimba vimba*) in the Danube River near Belgrade (Serbia)
18:20 – 18:35 Duřanka CVIJANOVIĆ *Pistia stratiotes* L. 1753 – an emerging invader in serbian rivers?

Wednesday, July 4, 2018*Keynote lectures***Chairman Jürg BLOESCH**

- 09:00 – 9:30 Martin DOKULIL Climate warming affects water temperature in the River Danube and tributaries – present and future perspectives
09:30 – 10:00 Robert BERNÝ Discharge measurement as an important part of the monitoring of extreme events in the Danube basin



INTERNATIONAL ASSOCIATION FOR DANUBE RESEARCH

The 42nd IAD Conference 2018

**DANUBE - A LIFELINE GOVERNED BY MULTIPLE USES, PRESSURES AND A
MULTITUDE OF ECOSYSTEM SERVICES**

2 – 6 July 2018, Smolenice, Slovakia

10:00 – 10:20	<i>Coffee break</i>	
10:20 – 12:20	Seminar Katrin TEUBNER	<i>Freshwaters as sentinels for tracking global environmental changes</i>
12:20 – 13:20	<i>Lunch break</i>	
	2nd oral presentation session	
	Chairman Bernd CYFFKA	
13:20 – 13:35	Maja NOVKOVIĆ	One flew over the Danube floodplain lakes (Koviljski Rit wetland area): UAVs as promising tool in aquatic vegetation assessment
13:35 – 13:50	Siniša OZIMEC	Floristic inventory and mapping of dry habitats along the Danube course in Croatia under the DANUBE parks CONNECTED project
13:50 – 14:05	Miloš RUSNÁK	UAV technology application in riverine landscape
14:05 – 14:20	Milan LEHOTSKÝ	Measurement of coarse sediment connectivity in braided rivers
14:20 – 14:35	Eugenia CIOACĂ	Ecological restoration of the Danube Delta wetland fragmented ecosystems. Şontea-Fortuna area case study
14:35 – 14:50	Katrin TEUBNER	Restoration of the urban oxbow lake Alte Donau: Response of zoo- and phytoplankton to trophic alteration from hypertrophic to mesotrophic conditions over 22 years
14:50 – 15:05	Anna KIDOVÁ	Morphological changes and their implication for management of a multi-thread river
15:05 – 15:30	<i>Coffee break</i>	
16:00 – 17:00	EGL Floodplain ecology - Status Meeting	
17:00 – 19:00	IAD General Assembly	

Thursday, July 5, 2018

	<i>Keynote lectures</i>	
	Chairman Milan LEHOTSKÝ	
09:00 – 9:30	Teodora TRICKOVA	Invasive alien species in the Danube Region and DIAS activities towards strategy development
09:30 – 10:00	Cristina SANDU	Sturgeon conservation in the Danube River Basin – past and perspectives
10:00 – 10:20	<i>Coffee break</i>	
10:20 – 12:00	Poster session	
	Chairman Georg A. JANAUER	
12:00 – 13:00	<i>Lunch break</i>	
13:00 – 17:00	Workshop Andrea FUNK	<i>Impact of hydromorphological alteration and restoration in the light of biodiversity and ecosystem services – exploring synergies for the WFD</i>
19:00	Festive dinner	

Friday, July 6, 2018

08:30 - 16:00	Excursion: fluvial geomorphology/ hydrobiology of the Váh River (Leopoldov) and old Danube channel (Gabčíkovo, Vojka)
---------------	--

INTERNATIONAL ASSOCIATION FOR DANUBE RESEARCH



The 42nd IAD Conference 2018

62 years of Danubian cooperative research in the framework of IAD

2 – 6 July 2018, Smolenice, Slovakia

Organized by:

Institute of Geography,
Slovak Academy of Sciences
IAD General Secretariat
Slovak Limnological Society

Under the Patronage of

Vice President of Slovak Academy of Sciences
Dr. Pavol Siman



**DANUBE - A LIFELINE GOVERNED BY MULTIPLE USES,
PRESSURES AND A MULTITUDE OF ECOSYSTEM SERVICES**

Book of Abstracts

Editors: Milan Lehotský, Anna Kidová, Miloš Rusnák, Jozef Dudžák

**DANUBE – A LIFELINE GOVERNED BY MULTIPLE USES, PRESSURES AND A
MULTITUDE OF ECOSYSTEM SERVICES**

Book of Abstracts

The 42nd IAD Conference 2018
Smolenice, Slovakia 2 – 6 July 2018

Editors: Milan Lehotský, Anna Kidová, Miloš Rusnák, Jozef Dudžák

Bratislava 2018
Institute of Geography of SAS

The contributions contained in this publication have not been edited by language and typographic appeal. The authors are responsible for the linguistic and content quality of texts.

Publisher: Institute of Geography of SAS

© 2018 Milan Lehotský, Anna Kidová, Miloš Rusnák, Jozef Dudžák

ISBN 978-80-89548-07-1

CONTENT

1. Impact of construction and operation of small HPS on biotic diversity of the Ukrainian section of the Tisa River basin
Sergiy Afanasyev, Liudmyla Guleikova, Olena Lietytska, Oksana Manturova, Oleg Golub..... 8
2. *Pistia stratiotes* L. 1753 – an emerging invader in Serbian rivers?
Ana Anđelković, Milica Živković, Maja Novković, Dušanka Cvijanović, Dragana Vukov, Miloš Ilić, Branko Miljanović, Šandor Šipoš, Nemanja Pankov, Danijela Pavlović, Dragana Marisavljević, Snežana Radulović 9
3. Discharge measurement as an important part of the monitoring of extreme events in the Danube basin
Robert Berny, David Dalkin..... 10
4. Ecosystem Service versus Human Use
Jürg Bloesch..... 11
5. Danube Under Pressure – A Personal Analysis
Jürg Bloesch..... 12
6. Role of artificial ponds for maintaining macrophyte diversity
Kateřina Bubíková, Richard Hrivnák..... 13
7. Ecological restoration of the Danube Delta wetland fragmented ecosystems. Ţontea-Fortuna area case study
Eugenia Cioacă, Marian Mierlă, Mihai Doroftei, Mihai Marinov, Alexandru Doroşencu, Vasile Alexe, Gabriel Lupu, Aurel Năstase, Mihaela Tudor, Orhan Ibram..... 14
8. Impact of eutrophication and industrial pollution on biodiversity evolution of the lacustrine ecosystems from the Romanian Sector of the Danube
Olivia Cioboiu, Carmen - Mădălina Cismaşiu..... 15
9. Ecological effects of hydropower dams in Romania as reflected in scientific studies
Gabriela Costea, Doru Banaduc, Mauro Carolli, Martin Puscha 16
10. Climate warming affects water temperature in the River Danube and tributaries – present and future perspectives
Martin T. Dokulil..... 17
11. Causes and consequences in recent hydrogeomorphic development of single-thread river in foreland of the High Tatras Mts.
Jozef Dudžák, Milan Lehotský, Miloš Rusnák..... 18
12. DANUBIUS-RI: A new European Research Infrastructure for Advanced Studies on River-Sea Systems
Jana Friedrich, Adrian Stanica, and DANUBIUS-RI consortium..... 19

13. Balancing multiple targets in large river-floodplain systems – biodiversity and ecosystem services in the corridor of the Danube River.
Andrea Funk, Javier Martínez-López, Florian Pletterbauer, Daniel Trauner, Kenneth J. Bagstad, Stefano Balbi, Ainhoa Magrath, Ferdinando Villa, Thomas Hein..... 20
14. The application of the River Ecosystem Service Index to a stretch along the upper Bavarian Danube
Marion Gelhaus, Barbara Stammel, Lars Gerstner, Simone Beichler, Martin Pusch, Bernd Cyffka..... 21
15. Integrating protected area management and ichthyofauna status for Adunații de Geormane Lake (Romania)
Ionelia Claudia Goga, Oana Mititelu-Ionuș..... 22
16. Long-term changes in the fish fauna of the Szigetköz region of the Danube, in Hungary
Gábor Guti..... 23
17. Sturgeons of the Austro-Hungarian Danube and sturgeon exploitation from the Middle Ages to the early 20th century
Gertrud Haidvogel..... 24
18. Human River Systems in the 21st century (HR21) – a new interdisciplinary Doctoral School addressing riverine landscapes as dynamic socio-ecological systems
Thomas Hein, Thomas Ertl, Wolfram Graf, Helmut Habersack, Gertrud Haidvogel, Christoph Hauer, Gregor Laaha, Guenter Langergraber, Susanne Muhar, Erwin Schmid, Martin Schmid, Stefan Schmutz, Karsten Schulz, Gernot Stoeglehner, Gabriele Weigelhofer, Verena Winiwarter, Sophie Zechmeister-Boltenstern, Marija Zunabovic-Pichler..... 25
19. Changing Rivers - challenges for the management of ecosystem services and biodiversity in the Danube River
Thomas Hein, Wolfram Graf, Andrea Funk, Gertrud Haidvogel, Florian Pletterbauer, Rafaela Schinegger, Astrid Schmidt-Kloiber, Daniel Trauner, Gabriele Weigelhofer.... 26
20. Beluga and Stellate Sturgeon migration and presence in the Iron Gate II dam area
Ștefan Hont, Cristi Trifanov, Marian Mierlă, Marian Paraschiv, Marian Ion Iani, Tihomir Stefanov, Mirjana Lenhardt, Radu Suciu 27
21. Long-term cladoceran and copepod assemblages monitoring in the Danube floodplain area (Slovak-Hungarian stretch)
Marta Illyová 28
22. Assessment Of Genotoxic Potential Of The Velika Morava River Basin
Jovanović, J., Kolarević, S., Milošković, A., Radojković, N., Simić, V., Dojčinović, B., Kračun-Kolarević, M., Paunović, M., Kostić, J., Sunjog, K., Vuković-Gačić, B..... 29
23. Seasonal dynamic of chlorophyll-a concentration in two small floodplain lakes at Lower Danube based on Sentinel 2 data.
Stefan Kazakov, Vulko Biserkov, Luchezar Pehlivanov, Stoyan Nedkov 30

Investigation of fish behavior at Iron Gate II Hydropower plant by acoustic telemetry

Mirjana Lenhardt^a, Radu Suci^b, Stefan Hont^b, Gorčin Cvijanović^a, Miroslav Nikčević^a, Stefan Skorić^a, Marija Smederevac-Lalić^a

^a Institute for Multidisciplinary Research University of Belgrade, Kneza Višeslava 1, 11000 Belgrade, Serbia

^b Danube Delta Institute for Research and Development, 165 Babadag Street, 820112 Tulcea, Romania

Corresponding author's e-mail: lenhardt@ibiss.bg.ac.rs

The Iron Gate II HPP represents the first barrier for long migratory fish species (sturgeons, shads, eels) on their spawning migration from the Black Sea to the upstream parts of the Danube River. It was built in 1984 on rkm 864 while Iron Gate I HPP was built on rkm 943 in 1970, both without fish passages. The establishment of fish passages at the Iron Gate dams could provide access of migratory fish to the upstream 900 km long stretch of the Danube and its major tributaries. This study was performed as a part of activities in project "Fish behaviour preparatory study at Iron Gate Hydropower dams and reservoirs" financed by European Investment Bank with the main goal to test telemetry techniques in the vicinity of Iron Gate dams. Fish tagging was performed with Vemco V16 TP acoustic tags, equipped with temperature and depth sensors. Seven Vemco VR 2W receivers were installed on 7 - 8 April 2015 downstream the Iron Gate II HPP, along Serbian and Romanian banks. One catfish (*Silurus glanis*), with total length about 2 m and total weight about 100 kg, was tagged on April 28th 2015. Additionally, one specimen of barbel (*Barbus barbus*) and one specimen of asp (*Aspius aspius*) were tagged in the same year on November 6th and 11th, respectively. Asp and barbel were detected only in short period after releasing while catfish records lasted from 28 April, 2015 till 13 February, 2017. One beluga sturgeon, which was tagged in 2013 in Borcea branch (Danube rkm 300), was recorded on receivers in the vicinity of Iron Gate II during 2015. This research was the first attempt to investigate behavior of different fish species in the vicinity of Iron Gate II. It also point to problems of collecting reliable data for fish behavior in this area and need to solved them.

Keywords: migratory fish species, sturgeon, Vemco V16 TP acoustic tag, catfish.

Invasive alien species in the Danube Region and DIAS activities towards strategy development

Teodora Trichkova^a, Florian Ballnus^b, Aljoša Duplić^c, Momir Paunović^d, Doru Bănăduc^e, Gábor Guti^f, Csaba Csuzdi^g, Rumen Tomov^h, Vladimir Vladimirov^a, Dan Cogălniceanuⁱ

^a Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, 1 Tsar Osvoboditel Blvd., Sofia 1000, Bulgaria

^b Bavarian State Ministry for the Environment and Consumer Protection, Priority Area 06, EU Strategy for the Danube Region, Munich, Germany

^c Karlovac University of Applied Sciences, Trg Josipa Jurja Strossmayera 9, Karlovac, Croatia

^d University of Belgrade, Institute for Biological Research ‘Siniša Stanković’, Bulevar Despota Stefana 142, 11060 Belgrade, Serbia

^e Faculty of Sciences, ‘Lucian Blaga’ University of Sibiu, 5-7 Dr. Ion Rațiu Street, 550012 Sibiu, Romania

^f MTA CER Danube Research Institute, Karolina u. 29, 1114 Budapest, Hungary

^g Department of Zoology, Eszterházy Károly University, Eger, Hungary

^h Department of Plant Protection, University of Forestry, 10 Kliment Ohridski Blvd., 1797 Sofia, Bulgaria

ⁱ Faculty of Natural and Agricultural Sciences, ‘Ovidius’ University of Constanța, Aleea Universității nr. 1, Campus B, 900470 Constanța, Romania

Corresponding author’s e-mail: trichkova@gmail.com

The introduction and expansion of invasive alien species (IAS) in Europe have increased recently. As a result, the biodiversity and ecosystems in different regions, including the Danube Region, are affected severely, and adverse socio-economic impact and impact on human health have been documented. The European Union (EU) Strategy for the Danube Region acknowledges IAS as a major threat to biodiversity and livable Danube Region. One of its targets as defined in Priority Area 06 states that ‘By 2020, Invasive Alien Species and their pathways are identified and prioritised, priority species are controlled or eradicated, and pathways are managed to prevent the introduction and establishment of new IAS’. The EU Regulation No 1143/2014 on the prevention and management of the introduction and spread of IAS is in force since 2015, and a list of 49 invasive alien species of EU concern has been adopted. The International Commission for the Protection of the Danube River has proposed 30 alien species to be included in the ‘black list’ for the Danube River Basin.

Here we present some results of the recently conducted projects with participation of the Danube River Invasive Alien Species Network (DIAS): ‘Pilot-study (data collection) on invasive alien species in the Danube Region with a smartphone application developed by the Joint Research Centre (JRC) (Danube-IASapp project)’ (2016-2017), and ‘East and South European Network for Invasive Alien Species – A tool to support the management of alien species in Bulgaria (ESENIA-TOOLS)’ (2015-2017). Furthermore, we present the activities of DIAS towards development of the IAS strategy and work plan for the Danube Region within the frame of the Priority Area 06 of the EU Strategy for the Danube Region.

Keywords: Invasive alien species, priority species, the Danube Region, strategy, DIAS.