

## Editorial

*Gertrud Haidvogel: Editor DanubeNews, Institute of Hydrobiology and Aquatic Ecosystem Management, University of Natural Resources and Life Sciences Vienna (BOKU), Austria, e-mail: gertrud.haidvogel@boku.ac.at*  
*Bernd Cyffka: Editor DanubeNews, Applied Physical Geography, Catholic University of Eichstätt-Ingolstadt and Aueninstitut Neuburg/Donau, Germany, e-mail: bernd.cyffka@ku.de*

Dear readers,

When we started planning this issue of Danube News in January 2020, we assumed that it would be prepared as “business as usual”. As you all know, our world was turned upside down in February or at the latest in March 2020. In order to prevent the spread of the SARS-CoV-2 virus, we all had to move to home workplaces, adapt to various restrictions of daily life and at the same time still take over the daily work tasks and often the care of children at home or of elderly relatives.

Under these circumstances, we are especially pleased that Danube News 41 will be published in time and in the same quality as you are used to. In this issue, Tobias Epple and his colleagues provide insights into the effects of fragmentation

and subsequent fish pass construction on nase in the Iller, a Bavarian tributary of the Danube. Georg Janauer concentrates on the spread of invasive plants in the Danube and possible management measures to control or restrict them. Michael Neumayer and his colleagues describe their conceptual approach and models for evaluating the effectiveness of natural and decentralised flood protection measures for streams in Bavaria. Finally, Johanna Weidenborfer analysed in her bachelor thesis the application of several macrophyte-based assessment methods for Serbian Danube backwaters.

As some of you may have read or been informed, the 43<sup>rd</sup> IAS conference will also have to be postponed. We hope to meet you at the currently scheduled date of 26–29 October 2020 at the Aueninstitut Neuburg. Please check for news at [iad2020.ku.de](http://iad2020.ku.de).

We would like to thank all authors, our always supportive graphic designer and the printing shop for their efforts and contributions during this challenging time and wish all our readers health and strength for the time ahead.

## The life cycle of nase (*Chondrostoma nasus*) before and after the construction of hydropower plants in the river Iller (Bavaria, Germany) and its migration behavior through fish-bypass channels

*Tobias Epple: Institute of Geography, University of Augsburg, Germany, e-mail: tobias.epple@geo.uni-augsburg.de*

*Arne Friedmann: Institute of Geography, University of Augsburg, Germany, e-mail: friedmann@geo.uni-augsburg.de*

*Karl-Friedrich Wetzel: Institute of Geography, University of Augsburg, Germany, e-mail: wetzel@geo.uni-augsburg.de*

*Oliver Born: Fischereifachberatung des Bezirkes Schwaben, e-mail: oliver.born@bezirk-schwaben.de*

### Abstract

The middle section of the river Iller (Bavaria, Germany) is fragmented by weirs since the mid-20th century. At five hydropower plants (Illerstufe 4–8), fish-bypass channels have been constructed between the years 2013 and 2016. The upstream migration of the European fish species nase (*Chondrostoma nasus*) through the fish bypass channels

has been studied daily with fish counting pools over 3 years and correlated with abiotic factors. The main abiotic factors that influence the migration patterns of juvenile and adult nase are water temperature and day-length. The highest numbers of migrating adult nase have been documented at water temperatures between 9.0 and 9.9°C and increasing day-lengths between 13:00 and 13:30 hours. Through a literature study, electrofishing and the fish counting pool, the life cycle of the nase has been investigated at the hydropower plant Illerstufe 6. Prior to the fragmentation, nase from the whole river Iller and probably even from the river Danube have migrated to two spawning habitats in the upper river Iller. After the fragmentation, migration has been impossible over a long time and there has been a large reduction of the nase population in the middle section of the river Iller.

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## Hydrological catchment of the River Danube

### General Secretary:

International Association for Danube Research (IAD)  
 (Internationale Arbeitsgemeinschaft Donauforschung)  
 PD Dr. Katrin Teubner  
 Dept. of Limnology & Bio-Oceanography  
 Faculty of Life Sciences, University of Vienna  
 Althanstrasse 14, A – 1090 Vienna  
 katrin.teubner@univie.ac.at

### Editors:

Prof. Dr. Bernd Cyffka  
 CU Eichstätt-Ingolstadt  
 bernd.cyffka@ku.de  
 Dr. Gertrud Haidvogel  
 BOKU Vienna  
 gertrud.haidvogel@boku.ac.at

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 info@diener-graphics.ch

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