

DANUBE WATCH

THE MAGAZINE OF THE DANUBE RIVER / WWW.ICPDR.ORG

3-4 / 2008

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Congress
for the Protection
of the Danube River

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Konferenz
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Credit: ICPDR/Stögmüller

Dear readers,

As promised in the last issue of *Danube Watch*, Montenegro has now become a full member of the ICPDR, having ratified the Danube River Protection Convention. We wholeheartedly welcome the colleagues from Montenegro and look forward to working closely with them to integrate them fully into the work of the ICPDR.

In addition to strengthening the cooperation within the basin, the ICPDR has been expanding its international cooperation with other river basins and organisations dedicated to improving water management. In 2007 an ICPDR delegation visited the Mississippi, and this year brought visits by representatives of Southern Africa's Orange River and Okavango Commissions, delegations from the Yellow River and Yangtze River, and most recently the Niger River Basin Authority. The ICPDR was also at the forefront of activities at this year's IWA World Water Congress and Exhibition held in Vienna, as this issue of *Danube Watch* shows.

There is immense value in sharing our experiences and, together, we are jointly identifying some of the most important basic requirements which can ensure effective river basin management. Plans are underway to use the funding provided by the Theiss Riverprize to streamline and manage this international cooperation

in a manner that is supportive of our own work and is helpful to other water managers.

Finally, these are exciting times for the next steps in implementing the requirements of the EU Water Framework Directive in the Danube Basin. By the end of 2008, national data will be available for analysis for the Danube River Basin Management Plan. The Plan and its associated Joint Programme of Measures will be discussed and endorsed at the ICPDR's 12th Ordinary Meeting in December 2009 and completed by mid-May of next year. Within this time period, national and basin-wide consultation processes will ensure that input from all relevant stakeholders in the basin is incorporated to make the plan as rich and effective as possible.

On a sad note, it is reported in this issue of *Danube Watch* that the Chairman of the ICPDR Expert Group on Flood Protection, Sandor Toth, passed away on November 19. On behalf of the large community of people who have benefitted from the dedicated and enthusiastic work of Sandor to strengthen the position of flood protection in the Danube River Basin, I would like to use this opportunity to offer our sincere condolences to his family and friends.

Philip Weller,
ICPDR Executive Secretary



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Danube Watch is available on the web at www.icpdr.org

IMPRINT

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Danube Watch is the official magazine of ICPDR, the International Commission for the Protection of the Danube River. *Danube Watch* enhances regional cooperation and information sharing on sustainable water management and environmental protection in the Danube River Basin. It reports on current issues affecting the Danube Basin, and on action taken to deal with challenges in the river basin. Striving for scientific accuracy while remaining concise, clear and readable, it is produced for the wide range of people who are actively involved in the Danube River Basin and are working for the improvement of its environment.

The ICPDR accepts no responsibility or liability whatsoever with regard to information or opinions of the authors of the articles in this issue.



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Credit: Mediafax

TWO SAILORS KILLED IN DANUBE COLLISION

An Austrian tugboat, *Linz 2*, and a Romanian barge, *Andreea*, collided on November 14 near the Romanian port of Calarasi. The 807-ton barge sank with two sailors aboard. The Romanian sailors missing since the accident, Marian Cetenici, 46, and Viorel Panturu, 42, were confirmed dead. Authorities closed the river section where the accident occurred, but strong currents on the Danube slowed rescue and cleanup efforts. The cause of the accident is unknown, and an investigation is underway.

For more information, please visit: www.mediafax.ro



Credit: Mello

EUROPE LOSING BIODIVERSITY

At the World Conservation Congress held in Spain, the European Environment Agency presented a study of protected species and habitats. Based on the 2007 country reports submitted to the EC, the analysis states that less than half the protected species and habitats in Europe have 'favourable conservation status'. Most of the remaining species and habitats have 'inadequate or bad' status. European states are bound by international and European agreements to share data on protected areas.

For more information, please visit: www.eea.europa.eu

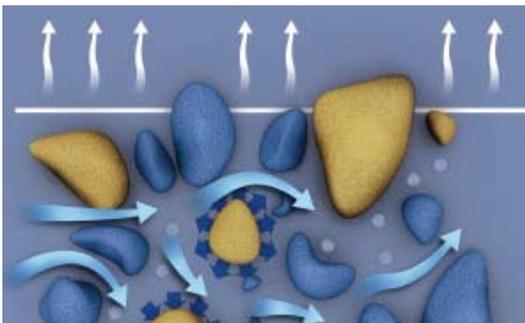


Credit: Mello

EUROPEAN BATHING WATER MAP PORTAL OPEN

The European Environment Agency (EEA) and Microsoft have launched a new environmental information portal 'Water Watch', displaying the latest information on water quality in bathing sites across Europe and allowing users to rate beaches and make comments. The application retrieves information from more than 21,000 monitoring points across Europe. Water Watch is the first application developed as part of the 'Eye on Earth' partnership between Microsoft and the EEA.

For more information, please visit: www.eyeonearth.eu



Credit: Michael Mibin

NEW BOOK ON GROUNDWATER RELEASED

The International Water Association has published a new book, entitled *Groundwater Management in Large River Basins*, which reviews the state-of-the-art of groundwater management in large river basins, providing an innovative approach with technical tools for planners, decision makers and engineers. The book, edited by Milan Dimkic, Heinz-Jurgen Brauch and Michael Kavanaugh, provides comprehensive coverage of the basic elements of groundwater management in large river basins.

For more information, please visit: www.iwapublishing.com/template.cfm?name=isbn1843391902

16–22/3/2009

ISTANBUL, TURKEY

5TH WORLD WATER FORUM

The World Water Forum, one of the largest global events in the water sector, is organised by the World Water Council every 3–4 years, and attracts thousands of participants from governments, non-governmental organisations and international organisations. The theme of the form, “Bridging Divides for Water”, emphasises the need for greater interaction, communication and functional harmonisation of the various entities involved in or affected by water management.

For more information, please visit: www.worldwaterforum5.org

2–3/4/2009

BRUSSELS, BELGIUM

SECOND EUROPEAN WATER CONFERENCE 2009

Organised by the European Commission, the conference will serve as preparation toward meeting the December 2009 deadline for EU Member States to establish the first River Basin Management Plans. The conference will highlight key issues of implementing the EU Water Framework Directive, and European stakeholder representatives will be invited to give their first feedback on the draft River Basin Management Plans.

For more information, please visit: www.emwis.net/thematicdirs/events/2nd-european-water-conference-2009

20–23/4/2009

VIENNA, AUSTRIA

SECOND HYDROECO CONFERENCE 2009

The Second International Multidisciplinary Conference on Hydrology and Ecology (HydroECO) brings together engineers and researchers from engineering and ecological disciplines to share information on the interactions between groundwater, surface water and ecology. The conference is organised by the University of Natural Resources and Applied Life Sciences in Vienna, Austria; the International Commission on Groundwater, of the International Association of Hydrological Sciences; and the Charles University, Prague, the Czech Republic.

For more information, please visit www.natur.cuni.cz/hydroeco2009/

3–5/7/2009

ALEXANDROUPOLIS – THRACE, GREECE

SECOND INTERNATIONAL CONFERENCE ON WATER ECONOMICS, STATISTICS, AND FINANCE

Access to water and sanitation will be the focus at a conference organised by the International Water Association Statistics & Economics Specialist Group with the cooperation and sponsorship of the Department of Environmental Engineering of the Democritus University of Thrace and the Department of Economics of the University of Crete. The conference will highlight the economic, financial and statistical aspects of water and sanitation, and will contribute to the transfer of knowledge from research to practice covering the entire water cycle.

For more information, please visit: www.soc.uoc.gr/iwa/iwa_page.php?IWAdoc



The newest member of the ICPDR family, Montenegro boasts rich and varied landscapes including high peaks along its borders with Serbia and Albania, a segment of Karst of the western Balkan Peninsula, and a narrow coastal plain that ranges from one to six km wide. The mountains of Montenegro include some of the most rugged terrain in Europe. *Credit: Koch*



The entire Danube River Basin working together as one

The ICPDR is very pleased to have Montenegro as its newest member. Montenegro declared independence on June 3 2006. A little over two years later, the small and beautiful country has completed signing and ratifying the Danube River Protection Convention.

On the October 28, the ICPDR received the formal letter from Montenegro announcing their ratification of the Danube River Protection Convention, and with this letter the waters of the entire Danube River Basin are united under the Convention.

Before the separation of Serbia and Montenegro in 2006, the waters of Montenegro's territory were included in ICPDR activities. And now, Montenegro's ratification of the Danube River Protection Convention means that all the countries in the region are now formally acting together under this framework.

“It is clear that in order to protect rivers and tackle these challenges, countries must work together, since rivers do not observe political boundaries. Overcoming the existing water management challenges can be possible if countries join their efforts. The ICPDR is a good forum to preserve the valuable Danube River basin, and to engage in constructive regional cooperation to meet mutual demands,” says Vesko Garčević, Ambassador of the Mission of Montenegro to the OSCE and other international organisations.

“Since having regained independence, Montenegro has succeeded to major international and regional organizations dealing with environmental protection, and to all the relevant International Conventions”, says Vesko Garčević, Ambassador of the Mission of Montenegro to the OSCE and other international organisations. “Montenegro is proud to join the Danube River Protection Convention and thus continue to contribute to the protection of the Danube river basin as a member party of the ICPDR, to the benefit of all the countries that form the part of it.”

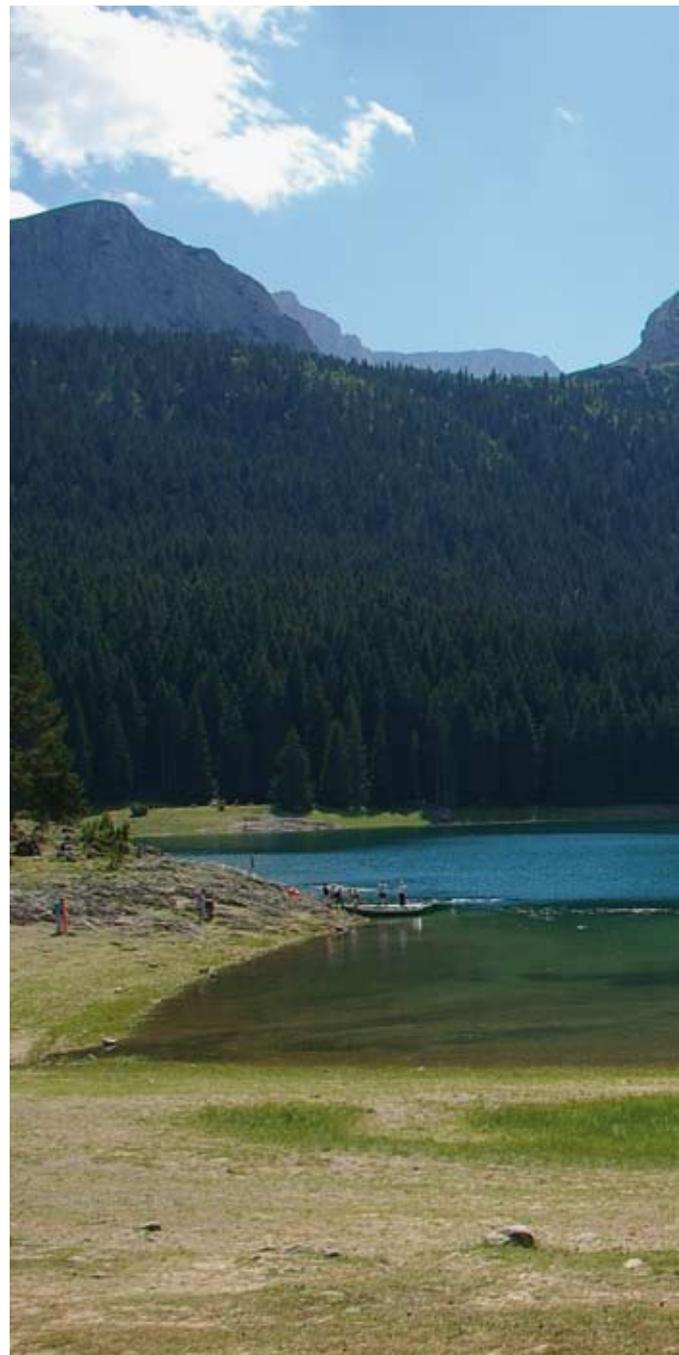
The ICPDR’s newest member gives the entire region reason to celebrate. “It’s essential if we are to properly do our business, that all the countries with territory in the basin are part of the convention,” says ICPDR Executive Secretary Philip Weller.

Natural treasures to protect. Montenegro, which means ‘Black Mountain’, has a coast on the Adriatic Sea to the south and borders Croatia to the west, Bosnia and Herzegovina to the northwest, Serbia and the disputed territory of Kosovo to the north and east, and Albania to the south. The country has a total land area of 13,812 sq km while water covers 1.5% or 214 sq km. In July 2008, its population was just over 678,000 inhabitants. Landscapes are rich and varied including high peaks along its borders with Serbia and Albania, a segment of the Karst of the western Balkan Peninsula, and a narrow coastal plain that ranges from 1 to 6 km wide. The mountains of Montenegro include some of the most rugged terrain in Europe.

“By its constitution, Montenegro is an ecological state. As a country with numerous crystal clear rivers and a place where you can visit the second deepest gorge in the world and the deepest one in Europe – the Tara Canyon – Montenegro places high value on sustainable development, protection of the environment and preservation of natural resources”, says Garčević.

There are four National Parks in the country: Durmitor (390 km) with its glacier lakes, Lovćen (64 km), Biogradska Gora (54 km) and Skadar Lake (400 km). Its UNESCO World Heritage Sites include Durmitor Park and the Tara River Canyon.

Famous for its diversity of flora and fauna, Skadar Lake, Montenegro’s largest National Park, hosts some 270 kinds of birds. Around 90% of the birds are migratory and are of international importance. During the migration season, white little egret, white spoonbill and various kinds of ducks pass over this region. Cormorants nesting in its northern swamps represent one of the three most important cormorant colonies in the world. Rare and endangered curly pelican nests can be found on floating peat islands at the lake’s north end. There are also 50 species of



fish, three species of snake and over 30 rare plants gracing the park.

Challenges and opportunities. Montenegro is well-suited for tourism development, given its picturesque coast and mountainous northern region. The Government of Montenegro has set the development of the country as an elite tourist destination as a top priority – it is a national strategy to make tourism a major, if not single largest, contributor to the Montenegrin economy. The tourism industry began to recover in the 2000s, and the country has since experienced high growth in the number of tourist visits and overnight stays. However, some of the problems that currently hamper development are inadequate



Montenegro is well-suited for tourism development, given its picturesque coast and mountainous northern region, and the government has set the development of the country as an elite tourist destination as a top priority – it is a national strategy to make tourism a major, if not single largest, contributor to the Montenegrin economy. *Credit: Koch*

infrastructure, notably the road infrastructure in the north, and electricity and water supply in the south of the country.

“Like many other countries, Montenegro also faces challenges in water management. Clean water production for future generations, management of hydropower, protection of wildlife and habitats - are some of the challenges to be addressed in the coming years”, says Garčević.

“The main problem they face is simply that they’re a relatively small country without a very big administration, so they need support in managing the waters”, says Weller.

“Participation in the ICPDR will be beneficial for Montenegro in many ways,” says Garčević. “Apart from benefiting from the mutual expertise, experience and cooperation, it will help Montenegro in implementing the EU Water Framework Directive which represents the principal tool for water management in Europe. As a country which aspires to join the EU, it is of great importance to use the assistance in this regard, and share the best practices with other countries.”

Paul Csagoly is a communications specialist and writer about European environmental issues.

Kirstie Shepherd is a freelance journalist living in Vienna and has called the Danube River Basin home since 2000.

The Danube River brings Art Masters to Vienna

In the halls of the elegant Schönbrunn Palace, where the national winners of Danube Art Master competition gathered for the final stage in their Danube journey, two students from Slovakia were crowned the International Danube Art Masters to the strains of the Blue Danube waltz.



The winning entry, entitled 'Duck', was created by Tomas Spusta and Martin Kratochvil of Slovakia. Their sculpture was made from local natural materials such as wood and grass. *Credit: Brebán*

Nineteen children, along with their mentors, came to Vienna for a weekend full of cultural and environmental programmes, as well as fun and games. These national winners represented 11 Danube Basin countries in the Danube Art Master Competition, which was once again organised by the ICPDR and the Danube Environmental Forum.

Over 4000 artworks were entered in this year's competition. "I am proud to learn that there is more and more interest in this project," said Philip Weller, Executive Secretary of the ICPDR.

The winners' trip to Vienna was organised by the Global Water Partnership Hungary and supported by Coca-Cola HBC and Coca-Cola Company through the Green Danube Partnership.

The programme began with a three-hour guided sightseeing tour of the city, which finished with a bird's-eye-view of the heart of the city from the top of the Danube Tower. The following day the Art Masters took a special children's tour of Schönbrunn Palace. The children travelled back to the time of Franz Joseph and Sissy to experience the imperial way of life by

trying on typical costumes of the epoch, accompanied of course by characteristic wigs and fans. The children enjoyed being in the shoes of the Habsburg emperors, sitting on thrones and taking hundreds of pictures. After this excursion into history, the children went on to the Marionette Theatre for a beautifully performed puppet show set to the music of Strauss.

Winning friends and making memories. The spell of the waltz lingered as the programme continued with the long-awaited moment: awarding the Danube Art Master International Winner. “You all should be very proud of your achievements,” said Weller, “and whoever the international winner will be, you should know that all of you are winners.”

After each child received a National Winner’s diploma and a framed picture of their work, Weller announced the International Winners: Tomas Spusta and Martin Kratochvil of Slovakia for their artwork entitled ‘Duck’. Their artistic sculpture depicts a majestic duck watching over the Danube River, creatively made from local natural materials such as wood and grass. Other prize-winning submissions at the national level included Moldova’s ‘The Danube Lives through Us’ – a composition depicting a person connected intravenously to a jar of river water – and Germany’s ‘Mermaid’ sculpture.

Exploring the river and its inhabitants. The ceremony was followed by a trip to the Schönbrunn Zoo, where the children were enchanted to see exotic and rare animals. After the zoo, the children competed in several challenging games – they had to identify the flags of the countries of the Danube River Basin, to put together water related puzzles and describe or draw specific features of certain Danube countries. The children were drawn into these entertaining games, but the mentors also entered the fun and helped their students. In the end all the children received small prizes.

The last day of the trip was spent exploring the splendour and mysteries of water life at the National Museum of Natural Science. The Art Masters took a ‘water tour’ at the museum where they had a glimpse into the life of the Danube River and interesting aspects related to life in the ocean and its creatures. “The Danube Art Master is not only about fun,” said Ivan Sudar, age 15, Danube Art Master National Win-

ner from Croatia, “but about learning a lot about the Danube as well.”

The winners’ weekend ended in front of the museum, where, instead of saying goodbye, a group picture was taken, a picture symbolic of the friendships that were forged during these few but very full days.

“I hope that you will return to your countries with nice memories, new friendships and that you will continue to be Danube Ambassadors,” said Weller.

Teodora Artimon is a Master’s student at Central European University in Budapest and a permanent student helper with the Global Water Partnership.



“The Danube Art Master is not only about fun,” said Ivan Sudar, age 15, Danube Art Master National Winner from Croatia, “but about learning a lot about the Danube as well.”



While in Vienna, the Danube Art Masters were in the audience for a special puppet show set to the music of Strauss at the Marionette Theatre of Vienna, and travelled back in time at Schönbrunn Palace to try out life as Emperors and Empresses. The last day of the Danube Art Masters’ trip to Vienna was spent exploring the splendour and mysteries of water life at the National Museum of Natural History. Credit: Brebán





The Danube Basin and ICPDR were one of the highlights of the congress. The ICPDR organised workshops on the need to form effective partnerships with diverse stakeholders, to manage potential conflicts and to secure the political will of governments, as well as presentations on integrated water resource management and on catchment management in large basins.
Credit: Boucherie

IWA World Water Congress and Exhibition: Danube, sanitation and climate

The International Water Association highlights the Danube River Basin at the premier global event for water professionals, held in Vienna.

The Danube Basin and ICPDR were one of the highlights at the 2008 IWA World Water Congress and Exhibition, this time held in Vienna between September 7–12. The Congress attracted over 4500 visitors from 94 different countries and covered the cross-cutting themes of Sanitation, Cities of the Future, Climate Change, Water and Energy, Water Reuse and Desalination and Frontiers of Science and Technology. Human Resources were also discussed with a special focus on attracting more women and youth to become water professionals. The Congress included the presentation of over 1000 papers, 30 workshops and ten keynote speeches including that of ICPDR Executive Secretary Philip Weller.

Focus on the Danube. On September 10, the ICPDR organised a workshop entitled ‘Managing the Danube: Lessons from the most international river basin in the world’ moderated by the European Commission’s Joachim D’Eugenio. The lessons included the need to form effective partnerships with the basin’s diverse stakeholders, to manage potential conflicts and to secure the political will of governments. Management requires a clear legal framework, institutional arrangements such as a commission, roles and responsibilities for involved countries, an organised monitoring system and a river basin management plan. The basin’s ecological services must be highly valued while measures for climate change adaptation are needed. Also,

more awareness raising is required to show how the EU Water Framework Directive serves as an excellent tool to achieve water management objectives and transparency.

Philip Weller made a keynote presentation about integrated water resource management and catchment management in large basins. This was followed by an ICPDR press conference launching the results of the 2007 river expedition – the Joint Danube Survey 2 (see page 24 for story). During the entire congress, the ICPDR also had an exhibition stand with Coca-Cola and Coca-Cola Hellenic focusing on their Green Danube Partnership.

The congress President, Walter Kling (from the Vienna Water Works), stated, “Whilst the congress brings together water professionals from all over the world, the regional aspect is crucial not only in terms of being good hosts, but more importantly to mobilise forces to combat the challenges we face in the Danube catchment. We were very encouraged by the quantity and quality of delegates, discussions and activities from, about and for the Danube that came out of the congress. I believe the impact on the region will continue to grow significantly and am very pleased with the results so far.”

About the Congress and IWA. The biennial IWA World Water Congress and Exhibition is the premier global event for water professionals. Hosted by the International Water Association (IWA), it brings together experts from all disciplines across the water sector – science and research, utilities, consultants, technology providers, industrial water users and regulators – to advance their common goal of sustainable water management. The Congress provides a unique opportunity for delegates to gain a picture of the global water issues faced by humankind, and to discover existing solutions or generate new answers.

IWA’s core purpose is to unite water professionals in achieving sustainable water management on a local, national and international level. It is a non-profit, self-governing organization comprising over 10,000 members across 130 countries from the scientific, utility, consultant, regulatory, industrial and technology communities. IWA’s work covers all fields of the water cycle, from supply, industrial water use and sanitation in both developing and developed countries.

The 2010 IWA World Water Congress will be held in Montreal, Canada.

Global sanitation crisis. The Vienna Congress placed special attention on the problem of sanitation and water supply in developing countries. IWA released a paper during the Congress outlining the scale and nature of the crisis and recommending several steps that should be taken to achieve the internationally agreed-upon Millennium Development Goals.

Data released at the gathering stated that over 80% of infectious diseases in developing countries are caused by insufficient sanitation or clean drinking water. Furthermore, it is estimated that about 60 countries, most of them developing countries in the Middle East, North Africa, the sub-Sahara region and South and Central Asia, will face a shortage of water supply until 2050.

“Whilst the congress brings together water professionals from all over the world, the regional aspect is crucial not only in terms of being good hosts, but more importantly to mobilise forces to combat the challenges we face in the Danube catchment”, said Congress President Walter Kling.



Linking the weather with development. At the Congress, Michel Jarraud, Secretary-General of the World Meteorological Organization, called for weather forecasts to play a greater role in planning for economic development and poverty reduction because of the impact climate change has on water resources. Jarraud stated that the agricultural, energy, tourism and health sectors are among those most affected by the impact of climate change due to drought, deterioration in water quality, increased run-off and an increase in the salinisation of groundwater as a result of rising sea levels.

For more information, please visit www.iwa2008-vienna.org, or www.iwahq.org.

Paul Csagoly is a communications specialist and writer about European environmental issues.

The Congress attracted over 4,500 visitors from 94 different countries and covered the cross-cutting themes of Sanitation, Cities of the Future, Climate Change, Water and Energy, Water Reuse and Desalination and Frontiers of Science and Technology. Credit: ICPDR





Restoring the wetlands of the Záhorie Lowlands

A new project funded by the EU's LIFE-Nature programme is helping to improve habitat conditions for some of the most threatened plant and animal species in the Záhorie region.

The Záhorie Lowlands represents the largest area of windswept sand dunes sands in Slovakia. This area, located in south-western Slovakia has an outstanding diversity of biotopes. The acidic sand provides a substrate for Pannonic inland dune habitats, while wetland habitats are found in the depressions between the dunes. The Rudava River, which flows across the area, is one of the best preserved tributaries of the March River.



The Rudava River, which flows across the area, is one of the best preserved tributaries of the March River. The wetlands provide a habitat for rare dragonflies, such as *Ophiogomphus cecilia*, and many rare plant species, including the Water Violet (*Hottonia palustris*).
Credit: BROZ

“I am really happy that I could work on these sites,” says project volunteer Pavol Littera. “Sometimes I return there, just to see how they are changing into a natural state. It gives me a good feeling that I helped to make these places nicer.”

The vast intensification of agriculture in the past century, especially in its second half, didn't spare this area. Almost all the important wetland sites were drained. This resulted in a decline of wetland biotopes as well as many of their typical species. Today there is a trend to restore these valuable and species-rich habitats. Luckily, wetlands typically have a dynamic character and much of their function can be restored in a relatively short time if their water regime is returned to original conditions.

ZAHORIE LOWLAND

Project title: Restoration of the Wetlands of Zahorie Lowland
Start date/end date: 01/02/2005 to 31/12/2008
Project beneficiary: State Nature Conservancy of Slovak Republic
Project partners: Slovak Water Management Enterprise, Department Bratislava
 BROZ — Regional Association for Nature Conservation and Sustainable Development
Total project budget: €624,000
EU financial contribution: €312,000 (50%)
Financial contribution of beneficiary and partners: €312,000 (50%)

Wetlands have a dynamic character and much of their function can be restored relatively quickly if their water regime is returned to original conditions. Fortunately, the swamp alder woods in the region have responded well after restoration. The Záhorie Lowland streams are home to 39 species of fish and 18 species of reptiles and amphibians, such as this edible frog (*Rana esculenta*).
 Credit: BROZ

Community importance, community support. The State Nature Conservancy of the Slovak Republic, Regional Association for Nature Conservation and Sustainable Development (BROZ) and the Slovak Water Management Enterprise are working together to improve natural conditions in this area. The work is being undertaken within the project “Restoration of the Wetlands of Záhorie Lowland”, funded by the LIFE-Nature programme of the European Union. The main aim of the project is to contribute to the creation of Natura 2000 network sites in the Záhorie region. The project area includes eight sites of Community Importance, seventeen Habitats of Community Interest and six Habitats of National Interest.

“A lot of the work is done by volunteers – this gives us a chance to promote nature conservation in this region and to show people the values and functions of wetland areas,” says Dr. Jaromír Šíbl, the project manager.

Protecting outstanding diversity. The wetlands are a home to many rare plant species, including a tiny orchid Fen Orchid (*Liparis loeselii*), glacial relicts Cotton Deer Grass (*Trichoporum alpinum*), Meadow Bistort (*Polygonum bistorta*), Bog Arum (*Calla palustris*), and Common Sundew (*Drosera rotundifolia*). Swamp alder woods, which are the most valuable forest communities in the area, also depend on adequately high levels of groundwater and seasonal floods. Elongated Sedge (*Carex elongata*) is a typical plant species in these forests, but rare species like Marsh Fern (*Thelypteris palustris*), Bogbean (*Menyanthes trifoliata*) and Water Violet (*Hottonia palustris*) can be found here as well. The wetlands also provide a habitat for rare species of dragonflies *Leucorrhinia pectoralis*, *Ophiogomphus cecilia* and *Cordulegaster heros*. The streams are teeming with 39 species of fish and 18 species of amphibians and reptiles.

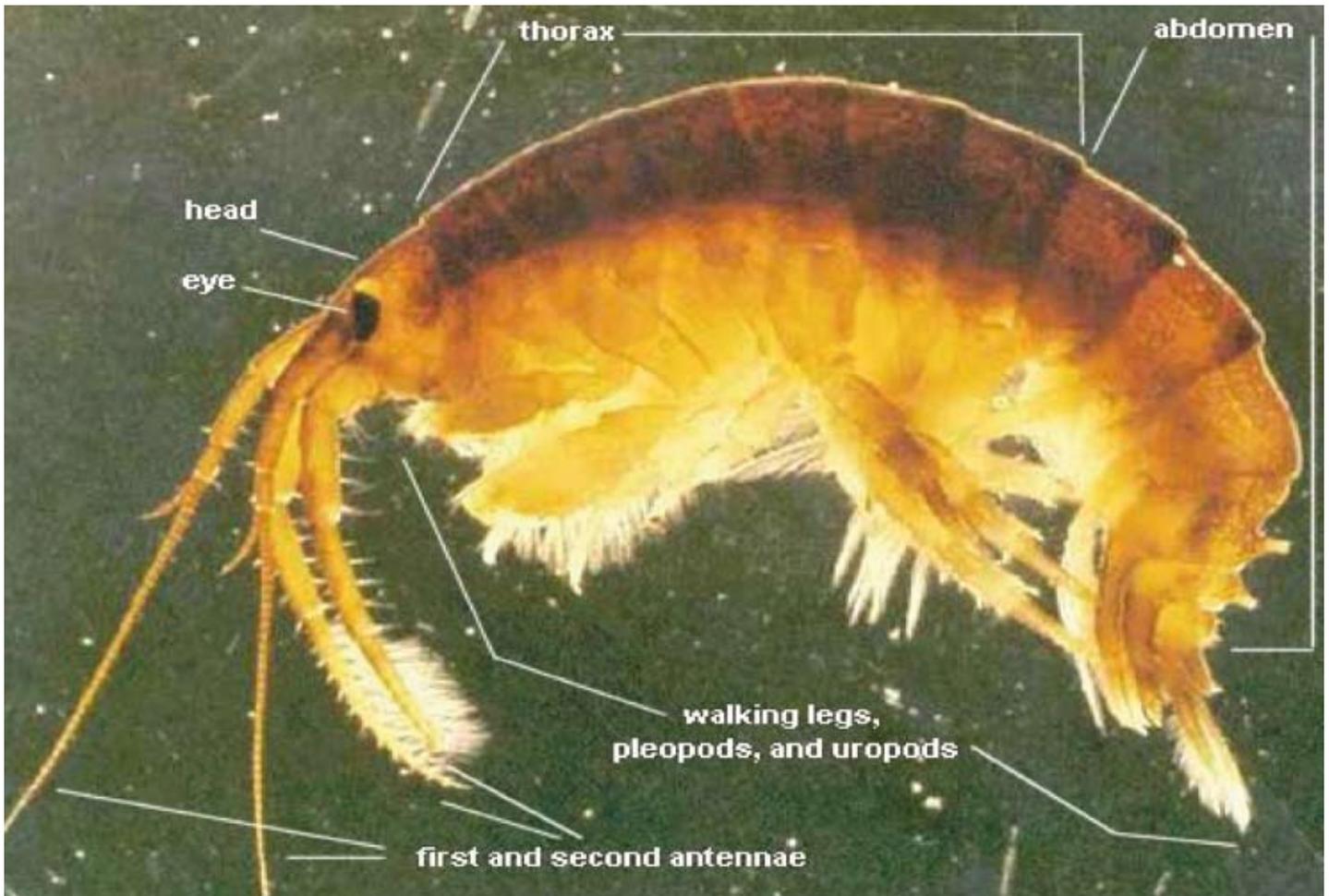
The revitalisation work is focused on restoration of the wetlands water regime and improvement of habitat conditions for the most threatened plant and animal species. Another goal is to construct a fish by-pass at the Rudava River to restore this important fish migration route, and to restore the species-rich lowland meadows along the rivers' floodplain.

“I am really happy that I could work on these sites,” says project volunteer Pavol Littera. “Sometimes I return there, just to see how they are changing into a natural state. It gives me a good feeling that I helped to make these places nicer.”

For more information visit, please visit:
www.broz.sk

Monika Budzáková is an assistant at BROZ, responsible for propagation in print media.





Invasion of the Danube

Results of the Joint Danube Survey 2 reveal that invasive species have become a major concern for the Danube, and that their further classification and analysis is vital for effective river basin management. The question of how to deal with them is the subject of constant discussion among EU member states.

The JDS2 found that killer shrimp, Asian clams and carpets of weeds have invaded the Danube River Basin. More now needs to be done to understand why they arrived, what impacts they are having and what to do about them – if anything at all.

Dikerogammarus villosus is a voracious predator. Also called 'killer shrimp', the 'pink peril' and 'freshwater jaws', the small macroinvertebrate – an aquatic insect, crustacean, worm, clam, snail or other animal without a backbone that can be seen without the aid of a microscope and that live in or on sediments – kills by biting and shredding prey, tending to be much deadlier than its competition because of its powerful mouthparts. They can colonise a wide variety of substrates, adapt to a wide range of habitats and survive

fluctuations in temperature, salinity and oxygen levels. Some people have seen them attack small fish. And they can cause significant ecological disruption such as reducing species.

On top of it all, they are not even from the Danube River Basin. Killer shrimp originate from the Ponto-Caspian area, meaning the Black, Azov and Caspian Sea regions, and are therefore known as *invasive* – non-native species that adversely affect the habitats they invade either economically or ecologically.

During the Joint Danube Survey 2 (JDS2) in 2007, probably the world's biggest river research expedition ever, killer shrimp were found to be the third most frequent invasive macroinvertebrate species found along

Called 'killer shrimp' or the 'pink peril', *Dikerogammarus villosus* is a voracious predator that can colonise a wide variety of substrates, adapt to a wide range of habitats and survive fluctuations in temperature, salinity and oxygen levels. *Credit: US Army Corps of Engineers*

The JDS2 found that invasives have become a major concern for the Danube. Many invasive species reach tremendous abundance (the number of individuals per species) – in the Middle Reach of the Danube, they made up an incredible 100% of all species abundance at some sites.

the Danube, observed at 69% of all sampled sites.

Asian clams, or *Corbicula fluminea*, were the most frequent invasive macroinvertebrate species found, observed at 93% of the sites sampled along the Danube River. Asian clams don't bite. They don't even swim fast. But they are still highly invasive. This species can release up to 2000 one-millimetre-long juveniles per day and more than 100,000 in a lifetime. Adults can become as long as 5 cm. That's a lot of clam.

The silver medal for most frequent invasive macroinvertebrate species goes to the Caspian mud shrimp *Corophium curvispinum*, observed at 90% of sites sampled.

With few exceptions, invasive macroinvertebrate species belong to the *Crustacea* and *Mollusca* groups and were found by the JDS2 to be distributed along the entire Danube stretch. Other notable aliens included the Northern river crangonyctid (*Crangonyx pseudo-gracilis*), a neozoon – an animal species that reached, after the year 982 AD (first introduction of American organisms in Europe; trans-Atlantic cruise of Eric the Red), under direct or indirect anthropogenic involvement, a specific area and has lived there wildly for at least three generations or over a longer period (at least 25 years) up to now (neo = new, zoon = animal; plural: neozoa) – originating from North America, possibly via the timber trade, found for the first time in the entire Danube. And *Corophium robustum* (see Rhine box) was documented for the first time in Austria.

Overall, the JDS2 found that invasives have become a major concern for the Danube, and that their further classification and analysis is vital for effective river basin management. The question of how to consider them is the subject of constant discussion among EU member states.

The JDS2 found that many invasive species reach tremendous abundance (the number of individuals per species) in specific river stretches in the basin. In the Middle Reach of the Danube, they made up an incredible 100% of all species abundance at some sites. In the Upper Reach, invasives accounted for up to 90% of specimens observed at some sites. They further accounted for approximately 40% of all of the documented species aggregated together in the Upper and Middle reaches. For example, Asian clams were often one of the only species found at many sites, given their ability to survive current and bottom conditions there. In effect, their increasing presence needs to be taken seriously – especially in places where they are so dominant, their continued existence there may be preferable.

Hello rip-rap, goodbye natives. Incredibly, the Danube probably remains the European river with the





Native species like the nase (upper right) must compete with invasive species such as goby (upper left and bottom) and Asian clams (centre left). Only one native species, burbot (*Lota lota*), benefits from newcomers, and feasts on the increasing pools of small goby which grow only to 7 cm. Credit: ICPDR

INVASIVES AND THE RHINE

According to a 2006 article in *Aquatic Invasions*^{*}, the authors found that the macroinvertebrate richness of the Rhine River was substantially reduced over the last century due to human impacts. By the early 1970s, only one-quarter of the more than 160 species identified prior to 1920 could still be found.

Over the last 30 years, water quality improved and macroinvertebrate species richness largely recovered. However, community composition has been severely altered by invasive species. The opening of the Main–Danube Canal in 1992, linking the Rhine to the Black Sea, was a key cause. Within a year, the first macroinvertebrate species of Ponto–Caspian origin were documented.

In 2003 and 2004, a number of samples were taken along a section of the Rhine. The study found that nine alien species contributed 74.7% and 72.1%, respectively, to the total number of invertebrates collected. A total of 33 alien macroinvertebrate species were identified in the study, including the first record of *Corophium robustum* from the Rhine. *Corophium robustum*, a shrimp-like species of Ponto–Caspian origin, most likely entered the Rhine Basin facilitated by ship traffic through the Main–Danube Canal.

Overall, the study found that the macroinvertebrate community of the upper Rhine River has been severely altered by the invasion of several highly successful neozoa and the disappearance or population decline of native species. Besides this displacement of native by alien species, there has also been a rapid succession in the numerical dominance of 'old' neozoa (mainly from North America) and 'new' Ponto–Caspian neozoa.

^{*} Dietmar Bernauer and Wolfgang Jansen (2006) Recent invasions of alien macroinvertebrates and loss of native species in the upper Rhine River, Germany. *Aquatic Invasions* (2006) Volume 1, Issue 2: 55–71.

The Danube River Basin is extremely vulnerable to invasive species given its direct linkages with other large water bodies. Many invasives originate from the Ponto–Caspian area, Asia, Australia and North America.

“If certain species that used to be either non-existent or in low numbers now happen to be undergoing mass production, then it’s not their fault – it’s ours,” says JDS2 Team Leader and biologist Béla Csányi.

The water fern *Azolla filiculoides* is a floating plant originating from North and South America. The beautiful plant can invade a region rapidly, form dense mats, out-compete native plants and animals and also causes problems in drainage and water systems. Credit: ICPDR



greatest fish diversity. In total, the JDS2 sampled over 64,000 fish consisting of 71 separate species – 66 species in the Danube and 58 in the tributaries.

At the same time, several native species are disappearing. One key cause is the loss of natural habitats, especially in the Danube’s Upper Reach where hydromorphological alterations (changes to the physical characteristics of the shape, boundaries and content of the river) are the main negative pressure, as opposed to poor water quality. Here, and along the Middle Reach, many significant changes have been carried out to enforce the river’s banks, creating artificial ‘rip-rap’ habitat – basically large boulders that have been artificially placed, especially at channelised and impounded river sections.

“Such habitat has now become ideal for a high abundance of *Neogobius* (or goby) species in parts of the Upper Danube – species which have not been historically present in the Upper Reach before,” says JDS2 Fish Team Leader Christian Wiesner. “Several goby species (*Neogobius spp.*), immigrants from the Black Sea, were found in high or even dominating abundances along the rip-rap protected and regulated banks. In contrast, downstream of the Iron Gate in the gobies’ native range (rkm 850-0), where hydromorphological impacts on the river are much lower, goby abundance is low and only slowly increases towards the Danube Delta.”

Only one native species, burbot (*Lota lota*), benefits from the bounty of food in the vast stretches of artificial rip-rap habitat. For example, burbot, which can grow up to 1 m in length, feast on the increasing pools of small goby which grow only to 7 cm. Non-native eels (*Anguilla anguilla*) also benefit from the high extent of rip-rap. Observed by the JDS2 only in the very Upper reaches, juvenile eels are stocked mainly in the German part of the basin and soon vanished from JDS2 catches in the Austrian section.

Overall, the diversity of Danube fish fauna has become significantly reduced and clearly dominated by eurytopic species – those which do not have special demands or requirements concerning their environment. These include roach (*Rutilus rutilus*), Prussian carp (*Carassius gibelio*), white bream (*Blicca bjoerkna*) and bleak (*Alburnus alburnus*) which were historically only important in the Lower Reach of the Danube. By definition, species such as Prussian carp are not ‘invasive’, but they are spreading and multiplying in new areas.

Water weeds. During the JDS2, the presence of water hyacinth (*Eichhornia crassipes*), most likely resulting from human impacts, was observed. Considered one of the worst aquatic weeds in the world, it is a fast growing plant with populations known to double in as little as 12 days. Infestations of the weed block waterways, limit boat traffic, swimming and fishing, and prevent sunlight and oxygen from penetrating the water surface. Shading and crowding of native aquatic plants can dramatically reduce biological diversity in aquatic ecosystems. “Its properties and competitive power may be a considerable threat to oxbow and still water systems in the Danube floodplains if further warming continues. Mediterranean countries already suffer from this weed,” says the University of Vienna’s Professor Georg Janauer, responsible for JDS2 macrophyte (plant) assessments.

The water fern *Azolla filiculoides* is a floating plant originating from North and South America. While observed only in low numbers during the JDS2, the beautiful plant can invade a region rapidly, form dense mats, out-compete native plants and animals and also causes problems in drainage and water systems. Dense infestations, which completely cover the water surface, are a danger to children, pets and livestock who may attempt to walk onto the apparently dry land without appreciating that there is deep water underneath. The dense cover of floating weeds also reduces the light level beneath the surface so that submerged weeds and algae die off causing serious deoxygenation problems. Free-floating weeds can also be drawn into water intakes, blocking pumps and filters, and can cause flow problems and obstructions to weirs, locks and other structures.

Why are the natives losing? The Danube River Basin is extremely vulnerable to invasive species given its direct linkages with other large water bodies. Many invasives originate from the Ponto-Caspian area, Asia, Australia and North America. The Danube is a part of the Southern Invasive Corridor (Black Sea–Danube–Main/Danube Canal–Main–Rhine–North Sea waterway), one of Europe’s four most important routes for invasive species. The river is therefore exposed to intensive colonisation of invasive species and further



spreading in both north-west and south-east directions throughout the basin.

“There are several opinions on this topic,” says Wolfram Graf, an Austrian biologist and upper Danube expert for the JDS2. “My personal view is that pollution and habitat degradation have weakened the indigenous faunal elements allowing neozoa to take over. In many cases, they prefer man-made structures like rip-rap where they settle and spread. Climate change may be one fact, but this is not verified. We are currently working on this topic.”

The climate is of course getting warmer, and this is having an effect on the Danube and its species. Rising water temperatures lead to lower dissolved oxygen concentrations in the water, with implications for the survival of native species – especially if they cannot move their home ranges due to migration barriers such as dams.

“Climate change may therefore cause further declines for native species, thereby decreasing the competition for non-natives and enabling their increased establishment,” says Wiesner. “However, there is no conclusive data yet on the subject of invasive fish species and its link with climate change in the Danube.”

Interestingly, the existence of many alien plant species found during the JDS2 might be attributable to climate change. For example, *Azolla filiculoides* is rarely found in temperate climates, indicating that its migration up the Danube may be a result of climate change. The unexpected spread of duckweed was probably triggered by the warm winter period. And the presence of eared watermoss (*Salvinia natans*), a plant species requiring warm conditions, near Vienna could be an indication of climate change-induced migration up the Danube.

But a crucial question to be asked here is: Is the Danube really losing out because of invasives?

“Danube flora and fauna forever change, as they do in any large river system, largely because of human impacts,” says JDS2 Team Leader and biologist Béla Csányi. “Many species that are being called “invasives” here should not be seen as problems. Many are beautiful, and some, like Asian clams, prove that some Danube sites with difficult conditions can still support life. If certain species that used to be either non-existent or in low numbers now happen to be undergoing mass production, then it’s not their fault – it’s ours.”

Paul Csagoly is a communications specialist and writer about European environmental issues.

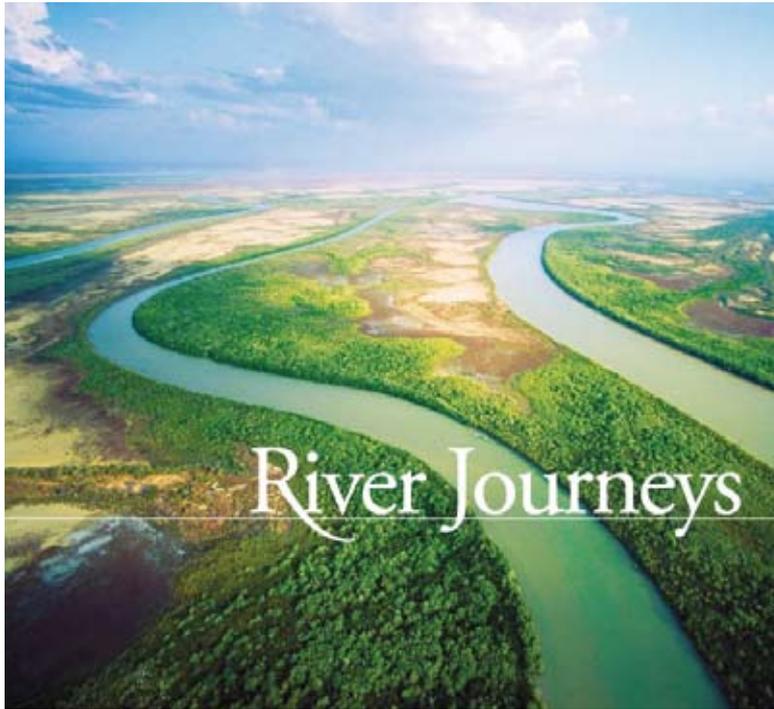
Considered one of the worst aquatic weeds in the world, water hyacinth is a fast growing plant with populations known to double in as little as 12 days. Infestations of the weed block waterways, limit boat traffic, swimming and fishing, and prevent sunlight and oxygen from penetrating the water surface.

The unexpected spread of duckweed (an important food source for waterfowl) was observed in the main river channel. Duckweed is any of various small, free-floating, aquatic flowering plants of the genus *Lemna*, growing in close, often carpet-like colonies on the surface of quiet water. These simple plants, lacking a stem or leaves, but consisting of a small blade-like structure floating on or just under the water surface, grow rapidly and absorb excess mineral nutrients, particularly nitrogen and phosphates. *Credit: ICPDR*

The Danube River tells its story

The ICPDR has been included in a stunning new publication by the International Riverfoundation entitled 'River Journeys'. The book recognises the founders and winners from ten years of the 'Thiess Riverprize' – the world's foremost prize in river management.

The Danube River Basin was awarded the prestigious Thiess Riverprize in 2007 for its collaborative approach to improving water quality and in recognition of the work undertaken during the past 15 years to overcome political and economic obstacles.
Credit: International Riverfoundation



“The stories of those who are achieving the world’s best practices in river management become more remarkable, even more compelling,” says Martin Albrecht, Chairman of the International Riverfoundation.

In September 2007, the ICPDR won the Australian \$300,000 (approx. €180,000) ‘International Thiess Riverprize 2007’ for excellence in water management in the Danube River Basin. Launched in 1999, the Riverprize has evolved into one of the most highly regarded and richest international water management awards. “The Riverprize identifies the world’s best practices in water management, preservation and restoration,” said Martin Albrecht, Chair of the International Riverfoundation which awards the prize.

One year later in September 2008, the International Riverfoundation launched 'River Journeys', a stunning coffee table book about the human history of award-winning river restoration projects worldwide, including those of the ICPDR.

“With this book, the International Riverfoundation recognises the founders and winners from ten years of the Thiess Riverprize – the world’s foremost prize in river management – for their vision, courage, commitment and their accomplishments,” says Albrecht. “Each watershed group has shown true passion and dedication to changing the health of their riverine

environment, creeks and wetlands and has accomplished major long-term improvements.”

“After ten years of driving river restoration worldwide, we feel an even greater sense of urgency to address the global freshwater crisis,” says Albrecht. “In this context, the stories of those who are achieving the world’s best practices in river management become more remarkable, even more compelling.”

Rewarding outstanding achievement. Within a decade, 18 river restoration groups have joined the alumni of the Thiess Riverprize, each one of them representing an amazing and unique river journey. Winners have built bridges across political borders and ideological divides, such as with the Alexander River shared by Israel and Palestine. Their work has been ground-breaking in terms of policy and implementation, such as with the Murray Wetlands Working Group in Australia. They have also forged strong transnational collaborations, such as with the Mekong and Danube rivers, and have overcome cultural and language barriers.

“It brings the ICPDR great pleasure that we are included as ‘The Blue Danube: A Blueprint for Collaboration’ in this insightful and colourful book,” says Philip Weller, ICPDR Executive Secretary.

The International Riverfoundation, a Brisbane-based international NGO, is at the heart of a global movement driving river restoration projects around the world. With this book, it hopes to motivate more corporations and individuals to support its programmes.

‘River Journeys’ is available for AU\$39.95. Order online at www.riverfoundation.org.au.

Paul Csagoly is a communications specialist and writer about European environmental issues.

Sharing solutions with international river basins

The ICPDR Secretariat met representatives from the Niger Basin Authority in November to learn from similar challenges and experience. *Credit: ICPDR*



“The ICPDR is very interested to work with other river basins within our available capacities. It gives us an opportunity to reflect on our situation in light of the circumstances of others,” says ICPDR Executive Secretary Philip Weller.

The ICPDR has had many opportunities recently to expand its international cooperation with other organisations dedicated to improving water management. Commissions representing river basins in Southern Africa visited the ICPDR in July and travelled to Hungary and Serbia as part of a week-long study tour in the Danube River Basin, supported by the German Society for Technical Cooperation. Representatives from the Orange-Senqu River Commission and the Permanent Okavango River Basin Water Commission had two days of extensive discussions at the Secretariat on how the ICPDR is organised and managed. A representative of the Orange River will attend the Ordinary Meeting of the ICPDR in December to discuss future cooperation.

A high level delegation of Chinese representatives from the Yangtze and the Yellow Rivers visited the ICPDR and five Danube countries – Austria, the Czech Republic, Hungary, Slovenia and Slovakia – in October. The ICPDR presented the management of the commission and the role of the Secretariat and national responsibilities. Danube representatives will participate in events in Yangtze and Yellow River Basins in 2009.

Representatives from the Niger Basin Authority (NBA) visited the ICPDR in November. At the ICPDR Secretariat, the two groups discussed the structure and the management of the ICPDR, and the NBA presented their Sustainable Development Action Plan for 2025. The visit proved mutually beneficial for both the NBA and for the ICPDR. The NBA has a large economic component and the ICPDR can learn much about how to stimulate economic growth.

Kirstie Shepherd is a freelance journalist living in Vienna and has called the Danube River Basin home since 2000.

In memoriam

In the name of the ICPDR, I am writing to express our sincere sadness on learning of the death of Sandor Toth.

As you are aware, Sandor was an active and involved member of the Flood Protection Expert Group of the ICPDR and in this capacity brought enormous energy and enthusiasm to the task of improving flood protection in the Danube River Basin. His personal efforts on behalf of Hungary helped raise the profile of this issue to its rightful place of importance in the work of the ICPDR.

As chairman of the Flood EG Sandor was the driving force behind the efforts to improve flood protection in the Danube and in this work he earned the professional respect and acknowledgement of people in all the Danube countries. He was respected not only professionally but also as someone who cared very deeply about the issues he worked on and he used his positive energy to build many close friendships across the borders of Danube countries.

There is a large community of people in the Danube basin who who were deeply saddened on learning of his death and will miss him.

On behalf of this community of people I would like to convey our sincere condolences to Sandor’s family and friends and at the same time express our appreciation for all that he did to support the ICPDR and the people of the Danube River Basin in achieving improved flood protection and management.

Philip Weller
ICPDR Executive Secretary

Results from the Joint Danube Survey 2 distributed internationally

Results from the largest Danube research expedition will improve the ability of Danube country leaders to decide on what to do to address pollution and other problems in the region.

The final results of the JDS2 expedition were released as part of the International Water Association's conference in Vienna. *Credit: ICPDR*



On September 11, 2008, the final results of the JDS2 expedition were publicly presented during a press conference at the World Water Congress and Exhibition of the International Water Association (IWA) in Vienna, Austria.

The accompanying press release was widely distributed internationally. International media that covered the story included Associated Press, Reuters, Agence Presse Francaise and the International Herald Tribune. In Austria, media coverage included articles in *Die Presse* and *Der Standard*.

Presenting the results to the public. The final results of the JDS2 were published in two key documents: a 'Final Scientific Report' and a hands-on public document - 'The Joint Danube Survey 2: Research Expedition and Conclusions'.

The 'Final Scientific Report' is a thick and technical document full of scientific terms and Latin names that provides a comprehensive assessment about the status of a number of parameters that needed to be measured to fulfill the requirements of the EU Water Framework Directive. The Final Scientific Report is understandable for scientists, but a member of the general public would have a difficult time getting through it.

For this reason, the shorter hands-on public document - 'The Joint Danube Survey 2: Research Expedition and Conclusions' - was created. It is hoped that this will give readers a very good idea of what was found out, within a short amount of time and space. While its information will not explain everything that was assessed during the JDS2, it does try to give an overall snapshot with highlights and definitions of complicated scientific terms. The overall scientific results are divided into three sections: biology, chemistry and hydromorphology.

All of the above - press release, media coverage, final results and the two documents - can be viewed online at www.icpdr.org/jds. A CD-ROM including all of the technical information is available from the ICPDR. And a full story about the JDS2 results was published in the last Danube Watch 02/2008.

At the time of writing this article, plans were also under way for the JDS2 final results to be publicly presented through national press conferences in the Danube countries, to maximise media coverage nationwide.

Paul Csagoly is a communications specialist and writer about European environmental issues.

A grassroots programme for change in the Drava River Basin

An initiative from a local project proves that great ideas can be contagious and that change can come from the bottom up.



The first initiative of the LIFE project was to stop the degradation of the river bed. As a means of stopping this deepening, five to ten kilometres of the river in Carinthia have been widened. This has resulted in an additional success for biodiversity, as the widening of the river has created new habitats. *Credit: LIFE*

When the ‘Life Vein Upper Drau River’ project began, part of the project proposal included cross-border strategies to solve water management and ecological problems. Keeping true to this goal, the local project – one of the European Commission’s LIFE projects – is now at the forefront of an international initiative recently endorsed by ICPDR Heads of Delegation from all Drava River Basin countries. With the Drava River Vision Declaration, the LIFE project is proving that local solutions can have big international effects.

Begun in 2006 and running until 2011, the project aims to continue the measures taken under a previous LIFE project to revitalise part of the 60 kilometres of the Drava River in Carinthia, Austria, and establish it as a ‘life vein’ for the Upper Drava Valley region. The project is tasked with stabilising the river bed and the groundwater level stabilising the river bed and the

groundwater level, and improving the flood protection and enhancement of the ecological condition of the river.

“When we started the second project, we wanted to share our experience in ecological improvement and restoration work from the first LIFE project in Carinthia,” says Norbert Sereinig, Manager of the project with the Government of Carinthia, Department of Water Management, Klagenfurt, Austria. “We have been working on the Drava since 1999, and we have learned a lot. We have learned a lot about communication, working with the communities and the people living there, and we saw these positive effects in Carinthia and we thought these can spread to the whole basin.”

A vision for the Drava River. As part of the project, the Drava River Vision Symposium was held in Mari-

Restoration work can benefit many groups at the same time. Widening the Drava in Carinthia created side channels and gravel bars that could be used for recreation, and brought the people in the region back to the area for swimming and relaxation. Credit: LIFE



bor, Slovenia 23-24 September 2008. The symposium brought together just over 100 representatives from nature protection, water management, hydropower and land use planning professions from all Drava River countries. Participants discussed how to sustainably manage the Drava – one of the most important regional sources for hydropower as well as an area with exceptional biodiversity.

THE DRAVA RIVER IN BRIEF

The Drava River is the fourth largest and fourth longest Danube tributary, and connects the Alps with the Danube and the Black Sea. Rising in Italy, the Drava drains the southern side of the Alps to the Danube and the Black Sea. It is 749 kilometres long and flows through Austria, Slovenia and Croatia – where it forms the border between Croatia and Hungary, before heading back into Croatia again to meet the Danube near Osijek.

The symposium was organised by the Institute for Water of the Republic of Slovenia and the Government of Carinthia, Department of Water Management, with assistance of the Environmental Agency of the Republic of Slovenia, Section Drava River Sub-Basin. The symposium was supported by the Ministry of the Environment and Spatial Planning of the Republic of Slovenia and the Austrian Ministry for Agriculture, Forestry, Environment and Water Management.

At the end of the symposium, participants reviewed ten challenges that became points in the ‘Drava River

Vision Declaration’. The declaration provides a framework for transboundary cooperation of professional and administrative institutions to solve problems about future development and sustainable Drava River Basin management. The declaration was signed by Richard Stadler, Head of the Austrian delegation to the ICPDR, Željko Ostojić, Head of the Croatian delegation to the ICPDR, Gyula Holló, Head of the Hungarian delegation to the ICPDR, Mitja Bricelj, Head of the Slovene delegation to the ICPDR and Rudolf Pollinger, representative of the Republic of Italy.

Finding balance in the basin. Driving the symposium was the need to find a way to balance all the requirements of the European Union’s water-related legislation, particularly the Habitat Directive, Birds Directive, Water Framework Directive, Flood Directive and the Renewable Energy Sources Directive. “This is the challenge, to find a harmonised implementation of these directives, because some of their points seem to be opposed, and some topics within these directives overlap and can benefit from synergies,” says Sereinig.

RICH IN NATURAL BEAUTIES

Despite the challenges to the area, the Drava River Basin is rich in natural resources of water and raw materials, and offers huge potential for sustainable development. Along the Drava River there are important and well-preserved ecological core zones, with a huge diversity of animal and plant species. Many of these areas have been placed under protection by the governments concerned, through protection regimes such as National Parks and Nature Parks, and they form part of the Natura 2000 European protected areas network.

Changes to the river. Many of the river’s problems today stem from conflicting needs in the past. Like most lowland rivers in Europe, the lower Drava has been considerably regulated, especially downstream of Barcs, with embankments and channels to direct its flow. While these structures have reduced natural hazards in some places, they have generally prevented fish migration in the area.

Along the upper reaches, the Drava River is heavily utilised for hydropower. On the Austrian stretch of the river there are eleven hydropower stations, with a further eight in Slovenia and three in Croatia.

Transboundary cooperation among the countries is an important part of ensuring sustainability in the field of river basin management. “On the one hand, we want to protect the riverine environment, on the other hand

we want to utilise hydropower and protect cities from floods. That means that we have got to come together, sit together and work together to find a positive vision for the Drava River”, says Aleš Bizjak, Symposium Project Committee Coordinator, Institute for Water of the Republic of Slovenia. “Otherwise, all of the separate sectors will pull the train in their own direction and at the end of the day the victim will be the water, of course.”



Natural habitats along the middle and lower reaches of the Drava River host unique flora and fauna – many species found nowhere else. Credit: LIFE

Taking practical steps locally and internationally. The first steps following the declaration will be to create a network for information and public relations among the Danube countries and to identify retention areas along the river corridor. “Re-establishing or establishing these retention areas, besides meeting the demands of the water related EU directives, we could get possibilities for taking adaptation measures for the climate change problem”, says Bizjak. “So with one hit we get more rabbits – the Natura 2000, the Water

Framework Directive, the Flood Directive, and the climate and energy package with the proposed Renewable Energy Sources Directive”.

What started at the local level is ready to move to the broader international level. The declaration is to be presented at the Ordinary Meeting of the ICPDR in December. “Having the initiative taken up at the ministry level is important to finding the right partners in the countries – the players who can support our ideas,” says Sereinig.

Perhaps the most important step will be to continue the momentum of involvement and participation – the qualities that have driven the declaration from the beginning. “I believe this is the unique story in Europe,” says Bizjak, “a story about how a group of professionals who are also enthusiasts in their work come together under the umbrella of the LIFE project to promote the idea of the vision of one river.”

THE DRAVA RIVER VISION DECLARATION

The Drava River Vision Declaration identified ten objectives for the future:

1. To promote the Drava River as a model for integrated implementation of EU policies on water and nature protection
2. To enhance flood protection through the improvement of flood warning systems and through increased information exchange
3. To enhance flood protection through protection and restoration of water retention areas along the Drava River
4. To continue and further develop restoration of the Drava River and its floodplains
5. To maintain and further develop the Drava River as an ‘ecological backbone’
6. To re-establish the ecological connectivity of the Drava River for migratory fish
7. To establish the Drava River as a cross-border recreation area
8. To use opportunities for the Drava River to be a connecting lifeline for different nations
9. To undertake integrated river basin management rather than fragmented sectoral measures
10. To undertake further development of the Drava River area in partnership with its resident human populations.

Kirstie Shepherd is a freelance journalist living in Vienna and has called the Danube River Basin home since 2000.

The Drava River Vision Declaration identifies ten points for the river – the fourth largest and fourth longest tributary to the Danube River. Fold out to see the Drava River Basin map.



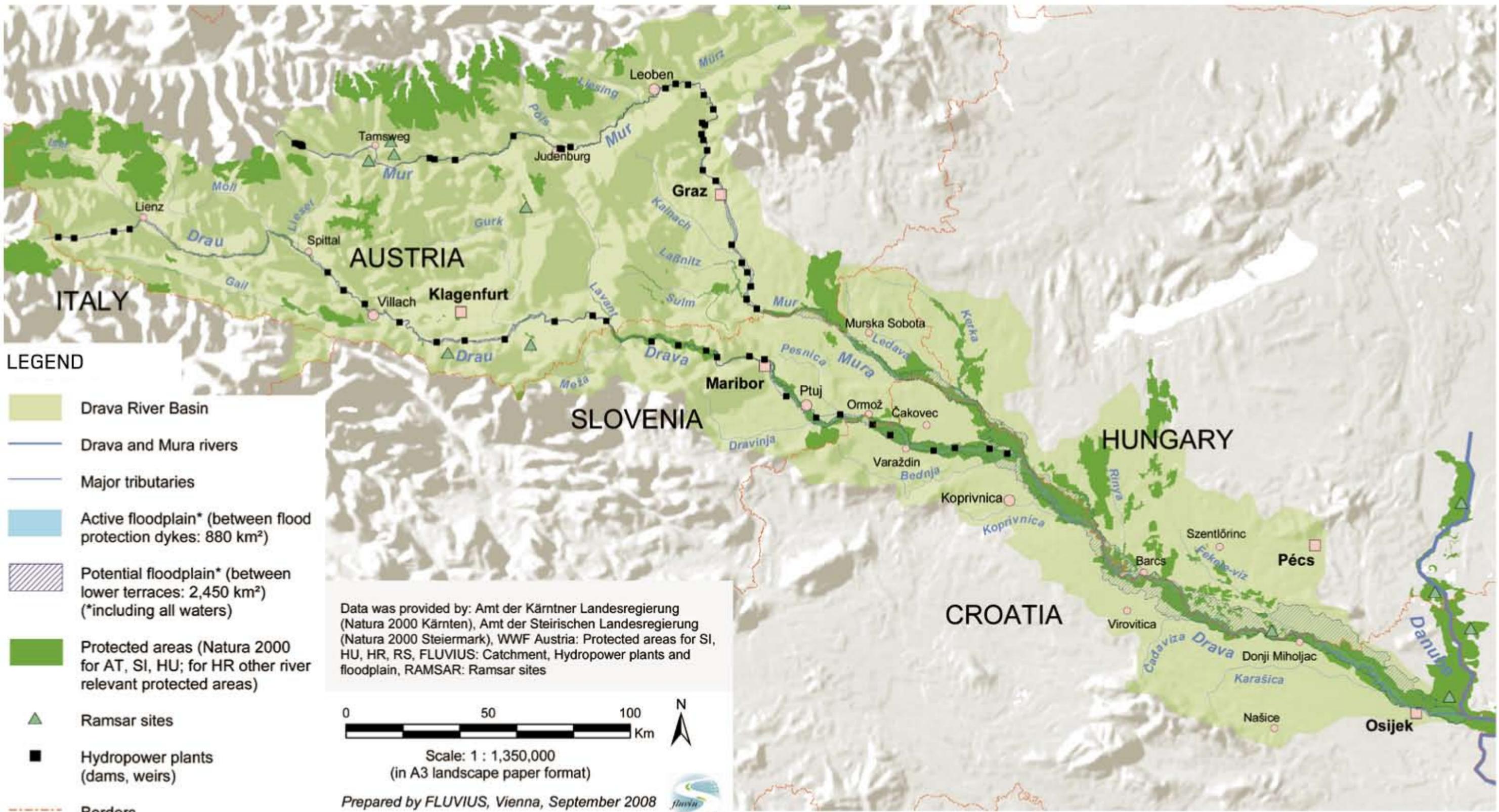
ICPDR MEETINGS

For final dates, please consult the ICPDR calendar, available at www.icpdr.org.

22-23/1/2009**VIENNA, AUSTRIA****TASK GROUP ON HYDROMORPHOLOGY****29-30/1/2009****BUDAPEST, HUNGARY****JOINT STATEMENT FOLLOW UP MEETING****9-10/2/2009****BRATISLAVA, SLOVAKIA****RIVER BASIN MANAGEMENT EXPERT GROUP****17-19/2/2009****SLOVENIA****PRESSURES & MEASURES EXPERT GROUP****10-13/3/2009****BELGRADE, SERBIA****TASK GROUP ON NUTRIENTS****12-13/3/2009****ZAGREB, CROATIA****MONITORING & ASSESSMENT EXPERT GROUP****19-20/3/2009****ZAGREB, CROATIA****TASK GROUP ON GROUNDWATER****25-26/3/2009****ZAGREB, CROATIA****FLOOD PROTECTION EXPERT GROUP****6-7/4/2009****BUDAPEST, HUNGARY****RIVER BASIN MANAGEMENT EXPERT GROUP****DW 01/09****UPCOMING ISSUE****Cooperation spreads for Business Friends of the Danube****PLATINA project supports inland navigation****Large river basins working together: the Danube and the Mississippi**

DRAVA RIVER BASIN

Nature protection areas, hydropower plants and floodplain



- LEGEND**
- Drava River Basin
 - Drava and Mura rivers
 - Major tributaries
 - Active floodplain* (between flood protection dykes: 880 km²)
 - Potential floodplain* (between lower terraces: 2,450 km²) (*including all waters)
 - Protected areas (Natura 2000 for AT, SI, HU; for HR other river relevant protected areas)
 - Ramsar sites
 - Hydropower plants (dams, weirs)
 - Borders
 - Cities: >100,000 inhabitants
 - 20,000-100,000 inhabitants
 - Other important cities <20,000 inh.

Data was provided by: Amt der Kärntner Landesregierung (Natura 2000 Kärnten), Amt der Steirischen Landesregierung (Natura 2000 Steiermark), WWF Austria: Protected areas for SI, HU, HR, RS, FLUVIUS: Catchment, Hydropower plants and floodplain, RAMSAR: Ramsar sites



Scale: 1 : 1,350,000
(in A3 landscape paper format)

Prepared by FLUVIUS, Vienna, September 2008