

DANUBE WATCH

THE MAGAZINE OF THE DANUBE RIVER / WWW.ICPDR.ORG I / 2010



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zum Schutz
der Donau

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Credit: Hungarian Ministry of Environment and Water

Dear readers,

The Danube ministers met in Vienna in February on the occasion of the completion of the Danube River Basin Management Plan. This Plan is evidence that even in such a diverse region, systematic work can lead to harmonised efforts towards common goals.

While this is a significant result, it also represents the beginning of the next phase: the implementation of the plan and related programmes of measures. We have to work hard in the coming years to reach the good status of waters and ecosystems and to ensure flood and environmental safety with due attention to the challenges of climate change. The recently launched macro-regional EU Strategy for the Danube Region (ESDR) is expected to facilitate these efforts.

Preparation of the ESDR by the end of 2010 gives new opportunities for sustainable development in the region. Hungary supports the notion that sustainable development strengthens social and regional cohesion and reduces inequalities among countries involved. The Strategy has to encompass political, social, cultural and economic issues, while balancing concerns for

the environment, energy and climate policy, food and water safety and sustainable mobility, including environmentally friendly navigation. Specific problems and regions (e.g. Tisza or Sava sub-basins) require specific solutions.

Strengthening the environmental dimensions of the ESDR is a key interest of the countries concerned as confirmed during the regional meeting initiated by Hungary in Vienna in February (for the full document, please visit: www.kvvm.hu/cimg/documents/EDS-20100215Wien-summary-final-en.pdf). Close cooperation among the countries of the region, and among various stakeholders, is a prerequisite to an efficient and successful Strategy.

The ESDR is a challenge and an opportunity for us all. Hungary is ready to face this challenge and to make all efforts to ensure the adoption of the Strategy during her EU presidency in the first half of 2011.

Imre Szabó, Minister of Environment and Water, Republic of Hungary



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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.



Credit: WWF-Canon/Vorauer.

UKRAINE ESTABLISHES 29 NEW PROTECTED AREAS

The government of Ukraine has enlarged its network of protected areas, adding 29 new areas. A total of 38 protected areas have been designated over the past four years, including 32 national nature parks, 2 nature reserves and 4 local reserves and landscape protected areas, also 8 biosphere reserves and national parks territories. With these additions, Ukraine's protected area system now covers ca 3.7 million ha, or approximately 5.5% of the country's territory.

For more information, please visit: www.panda.org/who_we_are/wwf_offices/ukraine/

NEW EUROPEAN POLLUTION REGISTER

The European Pollutant Release and Transfer Register (E-PRTR) is the new Europe-wide register that provides easily accessible key environmental data from industrial facilities in European Union Member States and in Iceland, Liechtenstein and Norway. It replaces and improves upon the previous European Pollutant Emission Register (EPER). The new register contains data reported annually by some 24,000 industrial facilities covering 65 economic activities across Europe.

For more information, please visit: <http://prtr.ec.europa.eu/Home.aspx>.

CHANGE IN VIA DONAU SENIOR MANAGEMENT

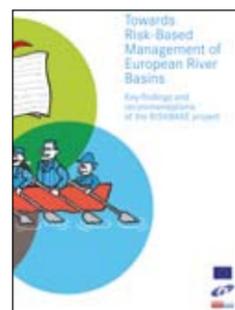
Hans-Peter Hasenbichler, formerly managing director for the business area waterway management, has assumed the role of Managing Director of via donau. Hasenbichler replaces Manfred Seitz, who served as Managing Director for 11 years. Under Seitz's leadership, via donau became an important partner for the European Commission with regard to new technologies for inland navigation and the development and implementation of an active European inland navigation policy.

For more information, please visit: www.via-donau.org

RISKBASE BOOKLET ON RISK BASED MANAGEMENT

A new booklet is available summarising the advice of the European Commission Sixth Framework Project RISKBASE. The project helps river basin managers to develop a network of integrated risk assessment-based management approaches enabling the prevention or reduction of negative impacts caused by human activities. The booklet recommends applying three key principles to risk-based management: be well informed, manage adaptively and take a participatory approach.

The booklet is available free of charge at: www.riskbase.info



Credit: istockphoto/Kutlayev.



Credit: via donau/Haider.

5-11/9/2010

STOCKHOLM, SWEDEN

WORLD WATER WEEK IN STOCKHOLM

World Water Week in Stockholm is the annual meeting place for the planet's most urgent water-related issues. Organised by the Stockholm International Water Institute, it brings together experts, practitioners, decision makers and leaders from around the globe to exchange ideas, foster new thinking and develop solutions. By harnessing best practices, scientific understanding, policy insight and decision-making, the programme aims to provide real answers to the world's water-related problems.

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

20-23/9/2010

PRAGUE, CZECH REPUBLIC

HYDRO-PREDICT 2010

The International Interdisciplinary Conference on Predictions for Hydrology, Ecology and Water Resources Management: Changes and Hazards caused by the Direct Human Interventions and Climate Change conference will bring together experts to share experiences on the mitigation of adverse effects of climate change and impacts caused by direct human interventions. The conference will be jointly convened by the International Association of Hydrological Sciences, as well as universities in Prague and Vienna.

For more information, please visit: <http://web.natur.cuni.cz/hydropredict2010/index.php>



Credit: ICPDR/Stögmüller

CHANGE OF THE HEAD OF THE CZECH ICPDR DELEGATION

It was a pleasure working with Veronika and we wish her all the best for her personal and professional future and welcome Vaclav to the ICPDR family!



Credit: ICPDR/Stögmüller

FROM THE DANUBE TO THE MEKONG: GOOD BYE BIRGIT!

Birgit Vogel has recently moved from the ICPDR Secretariat to the Secretariat of the Mekong River Commission. Birgit coordinated the work on the Danube River Basin Management Plan, which was completed by the end of 2009. We wish Birgit the best for her future professional and personal endeavours!



Ministerial Meeting 2010: shared waters – joint responsibilities

Ministers from all Danube countries, as well as ICPDR observers and representatives from stakeholder groups, strengthened their commitment to transboundary cooperation in the Danube River Basin.

Celebrating the Danube and capturing the spirit of the interdependence of Danube countries and the need for cooperation in water management was the focus of a Danube Ministerial Meeting that took place on 16 February. The Danube River Basin Management Plan, an action plan for achieving good status of all Danube Basin waters, was at the centre of discussions at the ICPDR Ministerial Meeting held in Vienna, Austria.

“The Danube and its tributaries such as the Sava and the Tisza are lifelines for man and nature. The actions for protection are set – their joint implementation will follow,” said Mitja Bricelj, ICPDR President for 2010.

The meeting brought together ministers and high level representatives responsible for water management from the Danube River Basin countries Austria, Bosnia and Herzegovina, Bulgaria, Croatia, the Czech Republic, Germany, Hungary, Montenegro, the Republic of Moldova, Romania, Serbia, Slovakia, Slovenia, Ukraine and the European Commission.

“The Danube waters are shared by us all and therefore we also share the responsibility,” said Mitja Bricelj, Secretary at the Slovene Ministry of the Environment and Spatial Planning and ICPDR President for 2010.

Addressing transboundary issues. The Danube River Basin Management Plan demonstrates an innovative approach to basin-wide issues by offering up answers to the pressures and impacts on water status in the region. The Danube River Basin Management Plan outlines concrete measures to be implemented by 2015 to improve the environmental condition of the Danube and its tributaries. These include the reduction of organic and nutrient pollution stemming from settlements and agriculture, stopping negative effects of man-made changes to the river, for example through the construction of fish by-passes, the introduction of phosphate-free detergents in all markets and effective risk management of accidental pollution. Measures to protect and reconnect wetlands will also be taken.



These issues are addressed by the Joint Programme of Measures, which forms an integral part of the Plan. The Joint Programme of Measures will serve as a common roadmap guiding activities in the region and ensuring the necessary harmonisation of actions at the basin level.

Putting the Plan into action. The Danube River Basin Management Plan is a significant first step towards achieving the ‘good status’ of water bodies that the EU Water Framework Directive (WFD) requires. However, measures within the Joint Programme of Measures will not be sufficient to achieve the environmental objectives of the WFD on the basin-wide scale by 2015 and need to be addressed by further actions.

In particular, nutrient pollution loads to the Black Sea will be well below present levels, but will still be 40% above targets. Limitations on phosphates in detergents are particularly cost-effective and necessary measures to complement the efforts of implementing urban wastewater treatment. Ministers at the meeting in February discussed introducing a phosphate ban in all Danube countries, which would set maximum limits for the total phosphorus content in laundry detergents for consumer use by 2012, and a market launch of

phosphate-free dishwasher detergents for consumer use by 2015.

Stakeholders make their voices heard. The active involvement of the public is a core principle in sustainable water management. To date, 19 organisations hold observer status and cooperate actively with the ICPDR and many ICPDR observers were on hand to present their views on the future use of the resources.

“Through successful partnerships like ours with the ICPDR, more companies are encouraged to enter into similar relationships to help conquer today’s and tomorrow’s challenges,” said Tony Baynes, Coca-Cola Hellenic, Public Affairs & Communications.

Observers to ICPDR were given the opportunity to make short statements in three groups: Business and Economic Interests, Environmental NGOs and International Organisations, as well as submitting written statements. WWF, Friends of the Earth Germany and BirdLife Germany presented the ICPDR with 100,000 signatures of a petition calling on Danube governments to protect the Danube as a living river and to avoid damage from infrastructure development connected to navigation.

“More than 100,000 citizens from Danube countries have signed our petition for balance navigation projects,” said Hubert Weiger, President of Friends of the Earth Germany. “We handed over this impressive proof of public concern to Danube ministers and called upon them to step up their efforts for a living Danube.”

A message from Danube Youth. Vasylyl Vataman from Ukraine, the 15-year old winner of the International Danube Art Master Competition 2009, addressed the Ministerial Meeting to bring the message of the Danube Youth to water ministers.

His artwork, entitled ‘Water Gives Life’, recreated the Danube ecosystem in miniature, presenting the strip of the

Danube that is most familiar to him: his village cut in half by the river with its particular features like a wooden bridge, fountain, and a small house and roads. “Let’s make all efforts to protect clean waters of the Danube River Basin – we children at our level and you government officials at yours – because the earth is our common home,” said Vataman.

Commitment to the Danube, now and for the future. As the highlight of the meeting, the ministers of all Danube countries endorsed the ‘Danube Declaration’, which expresses the commitment to further reinforce transboundary cooperation on sustainable water resource management within the Danube River Basin.

“The Danube and its tributaries such as the Sava and the Tisza are lifelines for man and nature. The actions for protection are set – their joint implementation will follow,” says Bricelj.

For more information, and to view a brief film on the Ministerial Meeting, please visit: www.icpdr.org/icpdr-pages/mm2010.htm.

Philip Weller is the Executive Secretary of the ICPDR.

Cooperation in the Danube Basin: in February 2010 Danube ministers and high representatives for water management formally adopted the Danube River Basin Management Plan, a milestone achieved through the joint efforts of all governments as well as the various interest groups in the regions.
Credit: ICPDR/Stögmüller.



A large number of chemicals do not degrade readily, rather, they end up bound to fine particles and remain as a threat for years in bottom sediments, or concentrated in plants or wildlife.
Credit: Zinke

Ecotoxicology – science contributes to water management issues

While aquatic ecosystems are subject simultaneously to pressures such as habitat loss, invasive species and climate change – all of these pressures make ecosystems even more vulnerable to toxic pollution.

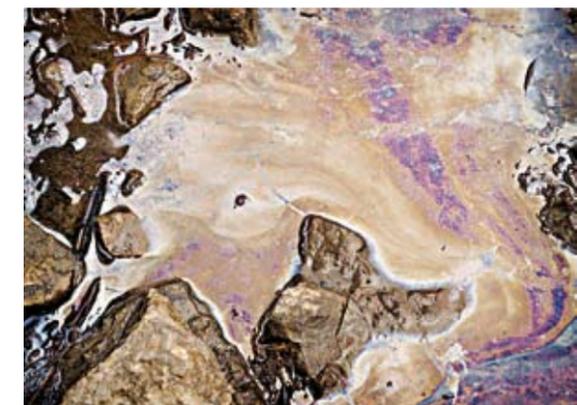
Dosis facit venenum. In the 16th century, alchemist Paracelsus already knew that the dose makes the difference between poison and remedy, meaning that all substances (including water) can be poisonous or at least harmful in high doses. Centuries later, we know that it is not only the dose (or concentration), but duration of exposure, bioaccessibility, bioavailability and many, many other factors which contribute to relative toxicity of a substance. But how do we set acceptable levels of substances that we are certain would cause no harm, in terms of lethal or sub-lethal effect, to humans and all other living organisms?

Ecotoxicology as a discipline is concerned with the study of toxic effects, caused by natural or synthetic pollutants, and aims to quantify and predict the magnitude of the stress on natural populations, communities or ecosystems so that the most efficient and effective action to prevent any detrimental effect can be identified, or in ecosystems that are already impacted by pollution, to identify the best course of action to restore ecosystem services and functions.

Understanding long-term effects. Focusing on an individual substance, it seems relatively simple – using various single-substance ecotoxicological tests and by the application of so-called safety factors, we can set the acceptable daily intake, effluent limits and even water quality standards. But by doing so, we are not even halfway through – because in real aquatic ecosystems, natural populations are exposed to a myriad of different chemicals simultaneously: as they are being discharged from direct sources, accidentally spilled into water or end up in aquatic ecosystems via run-off or atmospheric precipitation. In addition, through chemical and (micro) biological degradation, original compounds might be transformed into even more toxic by-products.

Unfortunately, the problem of hazardous substances in aquatic ecosystems comes into the limelight only in the case of big accidental spills, such as the well-known Baya Mare cyanide accident, or through oil spills. Though occurring rarely, high concentrations of toxic substances cause spectacular fish kills, which are reported in mass media, but long-term chronic effects and sub-lethal toxicity – which might cause

changes in behaviour, inhibition of growth, reproduction, or alterations of functional metabolic processes (photosynthesis, respiration) or even have teratogenic effects – do not generate as much attention as they are not apparent; they remain hidden behind the curtains of our general ignorance of ecosystem complexity and functions.



Narrow monitoring programmes. In spite of the enormous number of possible contaminants in the environment, risk assessment of toxic pollution in aquatic ecosystems is still based on few pre-selected and regularly monitored target compounds. The EU Water Framework Directive (WFD) has not changed the concept of toxic pollution monitoring and risk assessment. On the contrary, traditional, conservative monitoring programmes which rely on monitoring of substances rather than effects, underpinned with the list of 33 compounds selected as priority pollutants by the European Commission, remain the accepted and widely used concepts all over Europe, including the Danube River Basin.

The current EU list of priority pollutants is so short that official monitoring programmes are rather conservative. They say little to nothing about bioavailability, toxicity and, hence, risk to ecosystems from hazardous substances; and they pay almost no attention to emerging and other substances beyond this list. The introduction of a regularly monitored basin-specific list of pollutants could change this picture. The WFD classifies the quality status of aquatic ecosystems based on traditional hydromorphological, physico-chemical, biological parameters and priority pollutant (PP) con-

Unfortunately, the problem of hazardous substances in aquatic ecosystems comes into the limelight only in the case of big accidental spills, such as the well known Baya Mare cyanide accident, or through oil spills.

centrations. While this procedure allows for a rough quality assessment, a reliable diagnosis and prediction of toxic impacts on aquatic ecosystems and an efficient mitigation of toxic risks requires identifying the key toxic pollutants and understanding the cause-effect relationships between chemical pollution and biodiversity decline.

management issues were not an integral part of the Danube River Basin Management Plan nor does sediment quality assessment play an important role in assessing ecological/chemical status.

Better evaluation. To date, severe knowledge gaps impede the evaluation and mitigation of the causes for poor ecological status in many aquatic ecosystems. To address this, EU-funded projects such as Modelkey, AquaTerra, Liberation and NoMiracle, as well as related networks such as Norman, SedNet and RiskBase, have been recently launched to establish links between chemical quality of sediments and surface waters with measurable toxic effects.

Effect-based identification of key toxicants as well as analysis, modelling and assessment of bioavailability and food web accumulation are needed, as well as a better evaluation of monitoring data on contamination, toxicity and ecological quality at the basin level.



However, sound scientific concepts, models and decision support systems have to find their way to major stakeholders, water managers and even policy makers as their implementation would certainly contribute to the common European goal – achieving good ecological status.

As pollution by hazardous substances has been recognised as one of the significant water management issues within the Danube River Basin, some of the applied aspects of ecotoxicological research could bring practical benefits to water management.

For more information, please visit: www.iad.gs.

Ivana Teodorovic is the President of the International Association for Danube Research (IAD), and Associate Professor at the University of Novi Sad, Serbia, affiliated to the Faculty of Science, Laboratory of Ecotoxicology.

Making waterways ecological



Leading transport and environment policy makers agree that new infrastructure has to balance ecology and waterway needs. This began with the Joint Statement on Navigation and Environmental Protection (2007) and has developed further in the EU PLATINA Project as an interdisciplinary dialogue organised by the ICPDR. The most important output of this is the new 'Manual on Good Practices in Sustainable Waterway Planning', which will be published in May this year.

Preparatory work on the Manual included two training workshops hosted in Zagreb, Croatia, and Ruse, Bulgaria. More than 40 transport, environment policy and waterway managers met to discuss the content of the Manual and learn about examples of good practice from Germany on the Rhine and Main rivers, Austria on the Danube and England on the Thames. Success in these examples was a result of the combination of ecology with navigation interests, early and sustained stakeholder involvement as well as comprehensive monitoring.

The new Manual recommends five separate planning stages. The planning work should involve a Project Steering Committee, a Technical and Ecological Planning Team, an Interdisciplinary Advisory Board and an Integrated Monitoring Team. The Manual emphasises that effective involvement and cooperation of diverse stakeholders is the key to planning success. The Manual will be available from the ICPDR website soon and was developed by the ICPDR with support from via donau, Inland Navigation Europe and the University of Natural Resources and Applied Life Sciences, Vienna.

Alexander Zinke is the ICPDR project manager for navigation.

Financing the Joint Programme of Measures



The Danube River Basin Management Plan, finalised in December 2009, and the associated Joint Programme of Measures (JPM) identify a wide range of actions necessary in the Danube River Basin to achieve the good ecological status of water as required by the EU Water Framework Directive. These actions include policy changes as well as actions requiring technical assistance and investment. To facilitate and secure funding for water quality improvements, the ICPDR Secretariat and the Serbian Government will convene a Funder's Consultation Meeting in May 2010 involving members of the ICPDR delegations and representatives of financial institutions and programmes.

The conference will take place in Belgrade, Republic of Serbia, on 18–19 May 2010, with the objectives to present and to learn the funding needs for the actions identified in the Danube JPM, to explore existing potential funding, and to brainstorm and discuss the actions needed for securing the long-term matching of needs and funds – to make the plan a reality.

The meeting will bring together official representatives from Danube countries that have been at the forefront of contributing to the development of the Danube River Basin Management Plan and the Joint Programme of Measures, and representatives of financing institutions and programmes who will share their experiences with investments in the region with meeting participants.

Doris Gfrerer is an ICPDR consultant.

The Joint Programme of Measures offers answers to the pressures and impacts on water status in the region, but requires significant financial investments. *Credit: Röder*

For many Danube countries, financing the building or rehabilitating of wastewater treatment plants will be the largest burden. The ICPDR and the Serbian Government will hold a meeting in May on how to finance the measures needed.

The long-term chronic effects of toxicity include changes in behaviour, inhibition of growth, reproduction, or alterations of functional metabolic processes (photosynthesis, respiration) or even birth effects. *Credit: Vogrin (left) and istockphoto (right).*



The role of sediments. The EU Priority Substances Directive, adopted in 2008, aims to ensure a high level of protection against the risks of priority substances and other pollutants to the aquatic environment. Since approximately 80% of the listed priority substances are retained by sediment and suspended particulate matter, it has been agreed that Member States may apply environmental quality standards for sediment or biota instead of those for water. The newly proposed guidelines should raise the monitoring requirements for controlling the environmental quality standards.

While these new regulations and guidelines could be seen as an ideal vehicle for addressing the important role of sediments in watershed quality, it is uncertain to what extent sediment quality will explicitly play a role in assessing ecological quality under the WFD – as it is not mandatory. The WFD directs Member States to monitor macrobenthic invertebrates and develop sediment quality standards, so there is clearly scope for consideration of sediment quality as an integral part of river basin management. However, a preliminary overview of river basin management plans shows extreme inconsistency across Europe; sediment

Presidency 2010: Slovenia – linking the Danube to the Mediterranean Sea

In its continuing series, Danube Watch presents portraits of the leaders whose passion and commitment help determine the future of our river basin. In this issue we speak to ICPDR President for 2010, Mitja Brecej.

“It is crucial to bring the Danube River Basin Management Plan higher on the agenda of the other sectors, such as agriculture, navigation, and the energy sector. We need to ensure that all projects on and along the Danube rivers – whether infrastructure or agriculture – follow the principles of sustainability at the regional level.”



In the presence of diplomatic representatives from all Danube Basin countries, Norbert Halmo, from the Ministry of Environment of Slovakia, presented a bottle of Danube Water to Mitja Bricelj in Vienna on 14 January 2010. With this symbolic gesture, the ICPDR Presidency 2010 has been taken over by Slovenia.

Danube Watch: What are your goals for 2010?
Mitja Brecej: The ICPDR is at a crossroads. 2010 will be crucial for future development in the Danube regi-

on. Two central issues that are on our agenda are the Danube River Basin Management Plan and the EU Danube Strategy.

Danube Watch: What is the role of the Danube River Basin Management Plan?

Mitja Brecej: The Danube River Basin Management Plan is a roadmap to achieving sustainable river management, and it is crucial to bring the Plan higher on the agenda of the other sectors, such as agriculture, navigation, and the energy sector. We need to ensure that all projects on and along the Danube rivers – whether infrastructure or agriculture – follow the principles of sustainability at the regional level.

Furthermore, efficient adaptation to climate change can only be done based on the regional water cycle. And as the regional water cycle is the central issue of the Danube River Basin Management Plan, we have the basis for further work on this in our hands.

The current ongoing development of the EU Danube Strategy provides a unique opportunity. The ICPDR will need to ensure that the Danube River Basin Management Plan – with its goals and measures – is recognised as the environmental pillar for development in the region.

The Danube River Basin Management Plan cannot be implemented by the water managers alone, however. We need effective partnerships at the regional level – and the Danube Strategy might be a good tool to achieve this. I will personally do my best to ensure the

involvement of the different players – including authorities at regional, national and international levels.

Danube Watch: Slovenia is very active in promoting the sustainable management of the Mediterranean Sea. What are the links to the Danube in the approach?

Mitja Brecej: Firstly, there is a natural link between the Danube and the Mediterranean Sea – namely the Black Sea. And as the cooperation mechanism of the ICPDR has proved to be successful, it would be good to also apply it to the Mediterranean Sea.

In 2005 the Mediterranean Strategy for Sustainable Development was adopted at the 14th COP of the Barcelona Convention [14th Ordinary Meeting of the Contracting Parties to the Convention for the Protection of the Marine Environment and the Coastal

CV Mitja Bricelj

Mitja Bricelj was born on 4 April 1959 in Ljubljana, where he completed Gimnazija Vic High School. In 1978, he enrolled at the Faculty of Arts of the University of Ljubljana in geography and ethnology, focusing his studies on geographical environmental protection. He graduated in 1984 with his diploma work “Degradation of the environment in the case of Industrija usnja Vrhnika (Vrhnika Leather Industry)” for which he was granted a Prešeren Student Award. In 1991 he completed his master’s studies with a thesis entitled “The Economic Use of the Sava River and Environmental Protection”.

He has been employed at the Ministry of the Environment and Spatial Planning of the Republic of Slovenia since 1990. During 1993–1997, he was the director of the Agency of the Republic of Slovenia for the Protection of Nature at the Ministry of the Environment and Spatial Planning. During 2007–2009, which includes also the period of Slovenian Presidency to the European Council, he was State Secretary in the Ministry of Environment and Spatial Planning.

Since 1993, he has been national coordinator for the Convention for the Protection of the Mediterranean Sea Against Pollution with its accompanying protocols (Barcelona Convention) providing a legal basis for implementing the Mediterranean Action Plan.

Mitja Bricelj has been Slovenian Head of Delegation to the ICPDR since 1995, a member of the International Sava River Basin Commission since 2005 and is now the Slovenian President of all bilateral water management commissions.

Region of the Mediterranean and its Protocols] in the city of Portorož in Slovenia, providing the framework for further work. It is now time to develop effective cooperation tools in the Mediterranean context.

Therefore, I organised a meeting between the management structures of the Danube and the Barcelona Convention in Postojna in 2007 to share the lessons learned – and the meeting was fruitful. Postojna was chosen as the meeting place as it is in the Slovene carstic area, where the underground waters also link the Danube and the Mediterranean Sea.



Danube Watch: The Sava river, which is so important to Slovenia, is the first tributary of the Danube to have its own convention. What is the value of such sub-basin initiatives?

Mitja Brecej: The Danube level is good for the basin-wide approach, but specific problems connected with sub-basin characteristics can be best solved at the sub-basin level. The problems connected to the Sava can therefore best be solved at this level: the closer one is to the problems, the closer one is to the solutions.

Danube Watch: Thank you and all the best for your presidency!

As Danube tradition dictates, the ICPDR Presidency was symbolically presented to Mitja Bricelj, Secretary of the Slovenian Ministry of Environment and Spatial Planning, in the form of a bottle of Danube Water. Credit: Permanent Mission of Slovenia



The Drava River – a flowing controversy

The heart of the Drava River, which hosts some of the last free-flowing river sections in Europe, is deteriorating and many native species are in severe decline. But the river's biggest threat may be a lack of change in the water sector.

The Mura-Drava confluence is considered one of Europe's most precious floodplain and wetland areas. While riverbed maintenance activities for this area are recognised as devastating for the environment, they are being approved by local governments. Credit: Mobil/WWF

The Drava River is one of the five largest tributaries of the Danube River, and flows through five different countries to its mouth downstream of Osijek. The Drava's main tributary is the Mura River, and the two meet in Croatia to form a unique natural river mouth. The upper parts of both rivers are heavily regulated and their ecological status has deteriorated. But the lower parts of both rivers along the border of Croatia and Hungary are semi-natural to fully-natural lowland rivers with natural dynamics, thanks ironically to the former political situation of the Iron Curtain. Their free-flowing sections are some of the last remaining river ecosystems of the Europe, hosting numerous

endangered habitats and species. With deteriorating river health and many species in severe decline, those two rivers deserves special attention and protection measures. And that's where the controversy begins.

The area is protected by national legislation as a part of a National Ecological Network and a proposed regional park (International Union for Conservation of Nature Category V), and international protection is proposed through a possible UNESCO Man and Biosphere Transboundary Reserve. If properly implemented, both protections should ensure the future of this ecosystem. Public participation for the proposed regional

park is currently under way in all five counties along the Mura and Drava rivers, to collect opinions and comments from interested stakeholders. In addition, the Croatian and Hungarian governments recently signed an agreement on the protection and conservation of this valuable ecosystem – an important shift and huge step towards the integrated management of both rivers.

Threats to the region are becoming stronger. Despite this planned protection, both rivers are under huge pressure from an old-fashioned water management sector. Though the commercial excavation of sediments is now forbidden, the river bed is still under threat of regular river maintenance projects for flood protection, navigation, and similar activities. In addition, two new dams with reservoirs at Novo Virje and Osijek are still under consideration, and while the Novo Virje hydropower plant is off energy production plans, it is still a threat for the future in the form of two smaller dams Move 1 and 2. Riverbed maintenance activities could be very destructive if planned for areas of great ecological values, like the Mura-Drava confluence. Although these plans have been recognised as devastating for nature and environment, they have still received all the necessary licences and positive environmental impact assessments, and are being approved by local governments.

The most devastating activity was executed some 30 km from the mouth of the Danube, at Petrijevci, where Croatian water management and construction firms excavated more than 3,000,000 m³ of sand. This was conducted without any licence, legal document, environmental impact assessments or nature impact assessments. Instead, the sand was used in the construction of the Vc Highway. As the project was declared a matter of national interest all laws and regulations were ignored, showing shameful behaviour by the Croatian Government toward its natural treasures. This illegal extraction stopped abruptly in September 2009 after an EU report on the Drava regulation project was issued.

All these works, together with a total of 22 hydropower plants on the Drava, cause a huge sediment deficit in the river resulting in severe problems for wildlife, agriculture, forestry, groundwater levels and river stability. The last decade witnessed extensive gravel and sand extraction projects that further increased the problem of the sediment deficit in the Drava River.

Sluggish water management policies. The Drava River is a perfect example of the lack of change in the water sector and of very conservative water policies and practices, and the recently published Croatia 2009 EU Progress Report clearly shows that there has been little progress in the water sector. While the new Water Act, which came into force in January, includes significant changes to the approach of water management and has substantially incorporated the EU Water Framework Directive requirements, there is still much concern for how these new legal obligations will be interpreted by local water management units and how they will be implemented in the field.

Meanwhile, old-fashioned water management policies are at the heart of a plan to regulate the whole of the



final 56 km-long stretch of the Drava River with some 112 different structures and for the construction of a 25 km long reservoir as a part of the multifunctional Osijek system (energy, flood protection, irrigation, navigation, tourism, recreation). Despite strong opposition from the NGO sector during the public hearing process, as well as conclusions of the independent EU experts on the project, the environmental impact assessment has been approved by the Government. The official position is that the project will go ahead, despite the fact that this regulation project is not in line with EU environmental standards and legislation. Change, it seems, flows slowly.

Irma Popović is a coordinator of the Freshwater Programme of the Green Action/FoE NGO in Croatia. *Tibor Mikuska* is employed at the Croatian Society for Bird and Nature Protection.

The Drava River is a perfect example of the lack of change in the water sector and of conservative water policies and practices.

At Petrijevci, 30 km from the mouth of the Danube, Croatian water management and construction firms excavated more than 3,000,000 m³ of sand – without licences, legal documents, environmental impact assessments or nature impact assessments. Credit: Mobil/WWF

New life for the Great Marsh

For the first time in decades, the marshes of the 'Kalimok Brushlen' protected area are returning unspoilt nature of the floodplains along the Danube in Bulgaria, due to the efforts of the largest wetlands restoration project in Bulgaria.



The Sands of Radetzki Island are part of a new protected area of approximately 6,000 hectares called 'Kalimok Brushlen'. This protected site covers the eastern part of the Great Marsh as well as the adjacent section of the Danube River (km 434 to km 461) and eight islands.

Credit: Kutsarov

In the past, the largest lowland floodplain of the Danube River in Bulgaria was known as the Great Marsh. It attracted people from around the region, offering protection against enemies and abundant food – evidence of fishing in the floodplain goes back some 6000 years. Over the centuries, fishing has remained the main livelihood of the region, and local fishermen are known as the best on the Danube River.

Up to the 1940s, the Great Marsh was under the care of a local fishermen's association. The mouth of the swamp where it connects with the Danube was cleaned every autumn to be ready for fish spawning. The marsh was rich – catches of carp alone amounted to 600 tonnes per season. But in 1948 the new government in Bulgaria decided to dry all the marshes around the Danube and turn them into fields.

Rebuilding the Great Marsh. In 1980 the construction of the largest fishponds in Bulgaria began. While production of fish never came close to the amount of fish caught in the swamp, fishponds served a positive purpose. Nature around them began to recover in full force, reminiscent of its former brilliance. From this moment on, environmentalists in Bulgaria have strived to preserve this territory.

Early in the 21st century, the Bulgarian government launched the largest nature conservation project 'Restoration of wetlands and reduce pollution of the Danube River' to meet the commitments of the Green Corridor – Lower Danube (see article page 26). The first step in 2001 was to announce a new protected

area of about 6,000 hectares called 'Kalimok Brushlen'. This protected site covers the eastern part of the Great Marsh as well as the adjacent section of the Danube River (km 434 to km 461) and eight islands. Some 1750 ha have been revitalised by restoration activities, including three locks at the Danube dike to reconnect the restored marsh with the Danube River and the removal of fishpond dikes to ensure water movement throughout the territory. The restoration measures have been accompanied by the construction of a new dike and a drainage channel around the restored zone to protect agricultural land around the marsh.

Flooding returns. As a result of the restoration efforts, for the first time in decades the Kalimok-Brushlen marshes were flooded again during the high water period in 2009. The whole territory has changed into a huge wetland offering perfect conditions for characteristic species like Spoonbill, Glossy Ibis and Whiskered Tern to breed again in large numbers.

Due to its international importance for nature protection, the Kalimok-Brushlen Protected Site has been declared internationally as an Important Bird Area. Since 2009, it has been a partner of DANUBEPARKS – the Danube River Network of Protected Areas. This initiative is funded by the EU in the European Territorial Cooperation South-eastern Europe programme to develop a platform for continuous cooperation of protected areas and establish a habitat network with the Kalimok-Brushlen as a cornerstone.

Yordan Kutsarov is the Executive Director of the Kalimok-Brushlen Protected Site NGO.

Encouraging young people to dive in to water management

A new water platform from the Austrian Ministry of Agriculture, Forestry, Environment and Water is targeting young people to educate them about protection of water resources, and their future responsibility for water management.

Water is a valuable resource, which must be protected and treated accordingly – and since it is not constrained by national borders, it is necessary to cooperate in a spirit of solidarity to share experiences and knowledge throughout Europe. This demands a clear understanding, increased awareness and deep knowledge within the generation that will affect and form the future of the water – our young people.

A programme from the Austrian Ministry of Agriculture, Forestry, Environment and Water Management initiated six years ago is getting in touch with young people and confronting them with their future responsibility for water management. It is called Generation Blue. This programme is a water platform to invite

online games, school projects and competitions, and a profile on Facebook complete this unique offer for young people. Close to 20,000 pupils are taking part in the current 'Trinkpassaktion' where kids monitor their water consumption and can win great prizes in a creative challenge.

Generation Blue is a master project following the educational efforts of the ministry and participation of schools to communicate environmental activities to young people. Starting with the Czech Republic, there are plans to extend this project to other European countries to share experiences and implement common activities. Generation Blue International will engage young people to protect water resources across Euro-



Generation Blue is a water platform for young people, and includes a web portal, online games, school projects and competitions, and a profile on Facebook.

young people to access information, participate and raise their awareness of sustainable management of water and water related issues. It provides exciting information on water, as well as lots of fun and action on the subject of water. Generation Blue targets young people between the ages of 13 to 19 years. It is the biggest water project for youth in Austria and cooperates with pedagogic institutes, schools and teachers under the participation of public and private entities.

Using new technologies to address young water leaders. The central communication tool of Generation Blue is a web platform. In addition, information,

pe. By extending the project to other countries, best practices adjusted to local circumstances will promote cross-national awareness, participation and cooperation. Young people will learn and profit from each other. It will facilitate the understanding of transboundary water issues and encourage the implementation of the aims of the Water Vision for Europe. **For more information, please visit: www.generationblue.at.**

Susanne Brandstetter is the Project Manager of Generation Blue from the Austrian Ministry of Agriculture, Forestry, Environment and Water Management, and the Co-Chair of the ICPDR's Public Participation Group. *Thomas Schlatter* is the Project Manager of Generation Blue from AQA GmbH.



Sustainable development – from paper to practice.

Three years ago, the International Friends of Nature and Friends of Nature Romania proclaimed the Danube Delta 'Landscape of the Year 2007-2009' to promote development that conserves this unique habitat while creating new sources of income for local people. Since then much has been achieved.

LANDSCAPE OF THE YEAR

Since the beginning of the 1990s, the International Friends of Nature, with more than 500,000 members worldwide, has supported sustainable development in peripheral, cross-border regions of Europe by awarding the title 'Landscape of the Year'. For more information, please visit the website: www.landscapeoftheyear.net.



“People must still come to value participation and cooperation as something worthwhile. And that’s exactly what they have experienced in this project,” said Carmen Chaşovschi, an expert with gtz tourism.

Other measures included a cross-border model tour and the implementation of a Natura Trail together with school children. In fact, all these activities demonstrated what is possible – but also what is necessary, generating the required feedback for the conceptual level.

Putting a common strategy into practice. The notion of a 'common sustainable tourism strategy' for the Danube Delta, developed and agreed upon by all stakeholders, has been the leitmotif of diverse studies, discussions and seminars, to which the Landscape-of-the-Year partners contributed actively.

The Danube Delta has the potential to position itself on the European tourism market. Marketing ought to focus on products that meet the criteria of sustainability and local values.

As the region includes many divergent interests, this has been all but an easy process. But in the end, the efforts have given results. Sustainable solutions and concrete proposals on how to tackle them are on the table. Now it’s up to public and private decision-makers to take the necessary steps.

As a result of a panel debate and on the base of the existing concepts and former discussions, a Resolution on Sustainable Tourism Development in the Danube Delta

was elaborated.

Another paper? Yes, but one that summarises in a single page the decisive steps to implement the common strategy systematically. This makes it a point of reference for future action, agreed and signed by all relevant stakeholders, and explicitly supported by the Romanian minister for environment, László Borbély, who affirmed in a personal meeting with the LoY partners:

“We cannot afford to let such initiatives pass by without lasting effects. We must use the results and suggestions in a pragmatic way and establish synergies between the different projects”. In the Danube delta, the time is ripe to make these words come true.

For more information on the Landscape of the Year, including the final report, please visit: www.landscapeoftheyear.net/danubedelta.

Stefanie Röder was NFI coordinator of the Danube Delta – Landscape of the Year Project

The Landscape of the Year (LoY) formally concluded in September last year with a conference called, Promoting sustainable economy – the key to conserving nature and biodiversity, held in the new eco-tourism centre of Tulcea. The title of the conference made it clear that this closing event was a call for further action – as all activities have been since the initiative’s kick-off in June 2007.

In fact, sustainable development is a complex process and always a work in progress. For three years the Landscape-of-the-Year project in the Danube Delta focused on the issues of sustainable tourism, environmental education and the sustainable use of reed – the delta’s most abundant natural resource. The project stimulated action at the conceptual level and in practice, following three essential principles: First, an open and dependable communication designed to gather people from diverse organisations around one table. Second, to look beyond the Danube Delta and cooperate with international experts. Third, to implement practical measures involving local people that may serve as models to build on in the future.

This approach proved to be of value not only for the content, but also for the contacts. “The amicable note was of great importance,” said Cristian Mititelu from the Danube Delta Biosphere Administration and member of the LoY project group, “as it opened up new communication channels between individuals, institutions, the local population, and decision-makers. Less bureaucracy, more interpersonal exchange.”

Transferring ideas. For the reed issue, the point was to transfer an idea from Austria to the Danube Delta: the use of reed as multifunctional construction material. The delta boasts the largest unbroken expanse of reed worldwide. Why not try to install a sustainable, regional economic cycle from harvesting to the marketing? Such a cycle would also meet ecological aims, as reed must be harvested at regular intervals to avoid a silting-up process.

Romanian and Austrian specialists met near Lake Neusiedel – a trailblazer for innovative reed products – and laid the base for an experts seminar in Tulcea, before the issue was finally presented to the public during

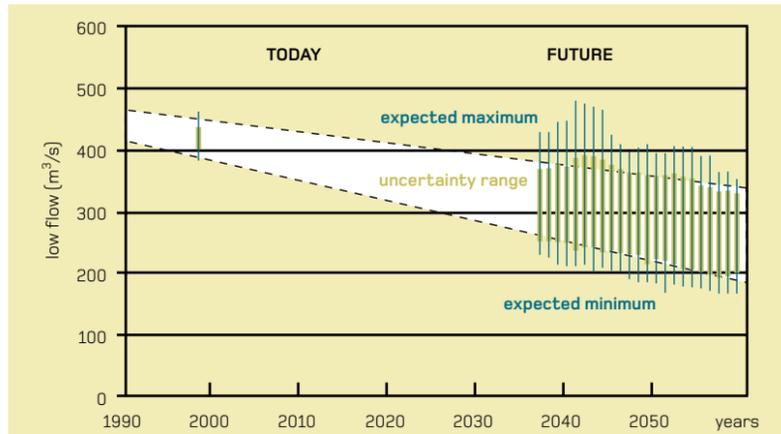
the concluding conference. “The real barriers are in our minds,” said Austrian specialist Rudolf Denk. “Therefore it is all the more important to find fellow-campaigners and to put in place best-practice examples. Why not one of the Biosphere Reserve’s envisaged new visitor centres?”

Implementing sustainable tourism. The Landscape-of-the-Year partners set practical examples in the field of sustainable tourism, which is a constant issue in the area given the economic potential of the tourism sector on the one hand and the ecological impacts of an uncontrolled development on the other.

By offering special training courses for nature guides and guest house managers in the delta, a crucial point of all sustainable concepts was translated into reality: to qualify local people for tourist services – as a base for an additional income – while educating them on ecological values and needs, encouraging them to take over an active, responsible role in the development of sustainable tourism.

The future of water – consequences of climate change in Central Europe

An integrative research project from Germany is analysing the probable consequences of climate change to develop alternatives for sustainable future watershed management and determine the future of water resources.



Climate change will alter the water cycle in Central Europe and force water resource managers to adapt. Higher regional risks of droughts and floods, the retreat of glaciers and snow cover in the Alps as well as changes in the natural and agrarian vegetation will be likely consequences of climate change. GLOWA-Danube is an integrative research project analysing possible futures of the water resources in the Upper Danube.

GLOWA-Danube was launched in 2001 as part of the GLOWA- (Global Change of the Water Cycle) -initiative of the German Federal Ministry for Education and Research. The project focuses on the Upper Danube Basin (77,000 km²), which consists of a mountainous region in the Alps and its forelands

A changing water cycle will most likely affect tourism, hydropower production, agriculture, industry and households through a change in seasonal water availability.

The role of the Upper Danube Basin. The water resources of the Upper Danube watershed, though currently plentiful, are used intensively by agriculture, industry and households. A broad palette of hydraulic structures like reservoirs, dams, hydropower structures and water transfers are already operational in the watershed to optimise water use for the current hydrologic situation.

“Because of its large altitudinal gradient of up to 3,600 m, the Upper Danube watershed will be most sensitive to the expected climate change,” says Wolfram Mauser, project leader of GLOWA-Danube. A changing water cycle will most likely affect tourism, hydropower production, agriculture, industry and households through a change in seasonal water availability.



The view from the Walhalla near Regensburg on the Danube. The Upper Danube watershed with its current water surplus serves the large downstream regions of the Danube with water supplied for transportation, irrigation, hydropower generation and industrial water use. Credit: Michelbach.

The Upper Danube watershed with its current water surplus serves the large downstream regions of the Danube with water supplied for transportation, irrigation, hydropower generation and industrial water use. “Any change in the water availability in the Upper Danube will therefore affect the large and developing population in the downstream Eastern European EU-countries,” says Mauser.

Investigating the impacts of climate change. As part of the interdisciplinary GLOWA-Danube project, researchers from natural and socio-economic sciences are collaborating to investigate the regional impact of climate change on water resources, energy production, agriculture, water use (domestic and industry) and tourism to identify and simulate effective and efficient regional strategies to adapt.

For this purpose the decision support system DANUBIA was developed. It is a coupled and transferable simulation tool that combines climate and natural sciences, socio-economic sciences as well as their interactions in a novel way. “DANUBIA is being applied to

simulate the impacts of complex future scenarios like climate change, changing demography, life styles and land use,” says Mauser.

Over 150 key stakeholders (decision makers from policy, economy and administration) in the watershed discuss the findings to develop and evaluate decision alternatives for a sustainable future watershed management. At the end of the project in October 2010

Impact on downstream countries. These changes will also affect tourism in the watershed: winter tourism in the low-lying skiing resorts will vanish whereas high-altitude resorts may profit. Based on the mentioned scenario simulations, water delivery to downstream countries, which depend on Upper Danube water, will decrease moderately to significantly until 2060 by -5% to -35%.

“Any change in the water availability in the Upper Danube will therefore affect the large and developing population in the downstream Eastern European EU-countries,” says Wolfram Mauser, project leader of GLOWA-Danube.

DANUBIA will be made available as ‘open source’ and will particularly serve decision makers as a tool for a foresighted planning of water resources against the background of global change.

A clear picture of future water resources. The simulation results from an ensemble of 18 regional climate scenarios based on a thorough analysis of IPCC findings, regional climate models and historical climate data of the region covering the uncertainty of climate change in the watershed for the first time give a quantitative view on probable regional climate change impacts in the Upper Danube Basin. “Generally, water in the Upper Danube will become scarcer but will not be scarce until 2060,” says Mauser.

The reduced water availability results from complex interactions of a slight decrease in annual precipitation (-3.5% to -16.4%) with future temperature (+3.3°C to +5.2°C) and evapotranspiration increases (+10% to +25%). “This will increase yields for farmers in the watershed,” Prof. Dabbert, the agricultural economist in the project says.

Additionally the simulations show that decreasing snowfall and snowmelt will cause a shift of peak flow from summer to spring and will strongly reduce low flows by -25% to -53% and will further restrict navigation. As a consequence, shrinking water availability will reduce hydropower production by 10% to -16% and increasing water temperature will more frequently limit the cooling capacities of thermal power plants.



Reduced water availability will result from a combination of a slight decrease in annual precipitation with future temperature and evapotranspiration increases.

“The synopsis of the results calls for a re-evaluation of the role of the Upper Danube as the European ‘water tower’ considering the impacts of climate change as well as new water transfer options,” says Mauser.

For more information, please visit:
www.glowa-danube.de

Sara Stoeber is the Project Coordinator of GLOWA-Danube.

Danube Day 2010: Get active for the rivers



Spring is in the air and it is time to start planning the Danube Day celebrations for 29 June.

This year's slogan 'Danube Day: get active for the rivers' underlines the need for each and every one of us to do our bit for the Danube and its tributaries. We can and should get active by avoiding phosphate containing washing liquids, by leaving space to natural floodplains and by not dumping waste into rivers.

Under the leadership of all countries of the Danube countries, activities are planned by governmental and non-governmental organisations, youth and sport clubs, and many more. Again hundreds of thousands of people will hold the Danube Day flag up on 29 June, the anniversary of the signing of the Danube River Protection Convention.

In cooperation with the Danube Environmental Forum, the International Danube Art Master School Competition is organised again this year. Children are invited to take inspiration from the rivers to create an art work which will compete for the prestigious International Danube Art Master crown in autumn. Strong partners such as the Coca-Cola System join in again to blow the horn of Danube Day. So stand up and get active too!

For more information on Danube Day, to post your Danube Day event and link with other Danube Day aficionados, please visit: www.danubeday.org

Jasmine Bachmann works as Technical Expert for Communication and Public Participation in the ICPDR Secretariat, and is the Executive Editor of Danube Watch.

Danube students competing for water protection



Winning students from the Barnim Gynmasium Bernau (Brandenburg, Germany) at the cheque presentation. The class will use the prize money for research and water quality tests. *Credit: Coca-Cola Germany*

Watering the athletic fields in a sustainable way and exploring the Danube back to its origin – these are two project proposals submitted by schools from all over Germany as part of a nation-wide competition launched by Coca-Cola Germany in September 2009. Students and teachers were invited to create proposals for day or week-long projects inspired by the Danube Box materials, promoting water protection.

Under the slogan 'Wasserschutz macht Schule (Water protection goes to school)', ten schools were selected and awarded with a prize of €1000 to implement their ambitious projects. Excursions to a waste water treatment plant and to the origin of the Danube, constructing a solar powered watering system in the school yard, creating interactive exhibitions on water use and water protection, animation with water songs and stories, and research on species diversity in the Danube will be on the lesson plans of the winning classes in spring 2010.

Youth competitions are popular in Hungary, where the third online Danube quiz competition, supported by Coca-Cola Hungary, goes to its final round in May. The competition will go international in 2011, accompanied by an international teacher's workshop to share experiences on the Danube Box teaching materials.

For more information see: www.danubebox.org

Doris Gfrerer is an environmental education expert and ICPDR consultant on the Danube Box.

Towards a shared vision for the Sava River

Bosnia and Herzegovina, Croatia, Serbia and Slovenia are working to reconcile economic development with the protection and sustainable use of biological and landscape diversity in the Sava River Basin.



The Sava River floodplains have the potential to provide not only security and protection to the livelihoods of the people living along its banks but also to be a model of transboundary integrated river basin management. There is a clear need for the strengthened transboundary cooperation between the Sava countries (Slovenia, Croatia, Bosnia and Herzegovina, Serbia), along with the need for improved integration and coordination of relevant sectors for the benefits of nature and local communities.

This vision was created during the IUCN international conference 'Towards a Shared Vision for the Sava River' held in November 2009 in Zagreb, Croatia. Apart from sharing experiences between different sectors and discussing future steps in the management of the Sava River Basin, the conference built on the result of the LIFE III project 'Protection of Biodiversity of the Sava River Basin Floodplains'.



Protecting important habitats. The project identified and assessed the ecological status of 49 sites as core areas for the future ecological network along the river in compliance with the European Union Birds and Habitats Directives, of which four are designated Ramsar sites: Bardaca Wetlands (Bosnia and Herzegovina), Lonjsko i Mokro polje (Croatia), Zasavica, and Obedska bara (Serbia). Recent research shows that there are a number of important nature sites that comprise exceptionally important habitats which shelter many globally rare and threatened animal and plant species and would serve as a basis for the future Natura 2000 network along the Sava River.

Some of the significant features of the Sava River are its floodplain areas, which support biodiversity and prevent flooding. "Traditional forms of land use, such as grazing and mowing, together with the natural activity of the river, have created the present day characteristic appearance of the floodplains. The most important evidence of this is seen in the middle reaches of the Sava River in Central Posavina," says Henk Zingstra of Wageningen International, the Land Use Working Group Coordinator. This part of the Sava River represents a unique landscape and ecological system of flooded river side areas that exist due to the joint impacts of natural flooding processes and human activities.

One of the key challenges in managing the Sava River is the reconciliation of economic development with the protection and sustainable use of biological and landscape diversity. To allow for the integrated management



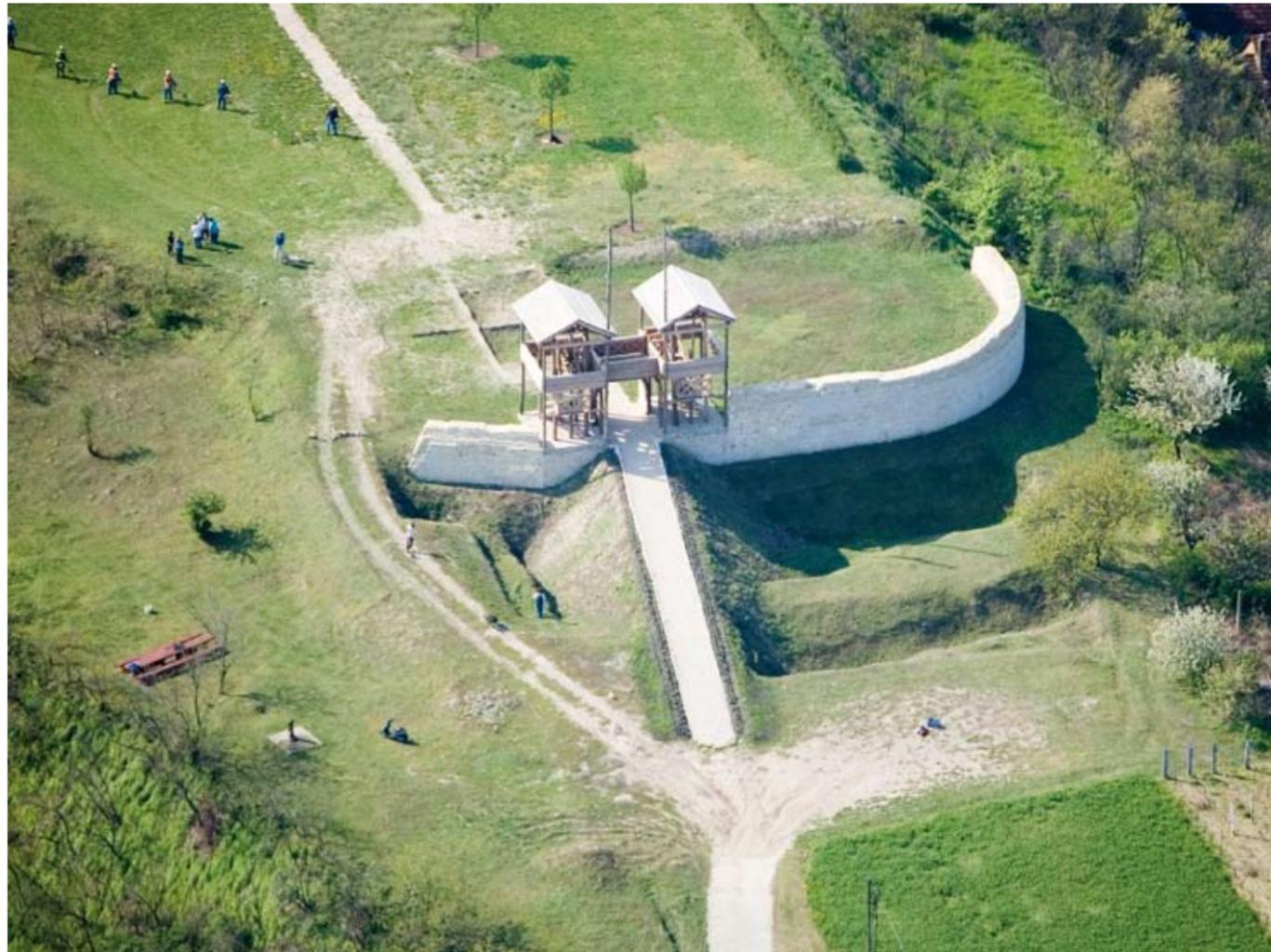
of the Sava River floodplains, it is essential to keep the momentum of good transboundary cooperation, strengthen the capacities of existing management structures, and to improve cooperation across various sectors managing natural resources of the Sava River floodplains.

For more information, please see: www.savariver.com

Boris Erg is the Director of the IUCN Programme Office for South-Eastern Europe.

The Sava River represents a unique landscape and ecological system of flooded river side areas that exist due to the joint impacts of natural flooding processes and human activities.

Research has shown that a number of important nature sites in the Sava River Basin shelter many globally rare and threatened animal and plant species.



The Roman fort of Lussonium/Paks in Hungary will be turned into an archaeological park. Credit: University of Pécs/Szabó.

Re-shaping the Danube Limes

The frontiers of the Roman Empire, from the Danube to the Black Sea, played a crucial role in making and breaking emperors and creating vibrant societies along its course, and a UNESCO World Heritage Project is ensuring Rome's cultural legacy and survival.

Within the framework of efforts to preserve the archaeological heritage of the Romans in Europe, the frontiers of the Roman Empire, which form the single largest monument to this civilisation, have received a very special role within the context of a newly created transboundary, 'Frontiers of the Roman Empire World Heritage Site'. This unique site, accepted by the UNESCO Commission in 2005, will now be extended into the Danube countries.

Looking at landscapes long gone. Following the footsteps of the Roman soldiers along the Danube from Bavaria to the Black Sea there is a lot to discover: a frontier system with fortresses and fortlets built by the Roman army preserved in archaeological parks and

recreation areas, like Carnuntum (Austria), Aquincum (Budapest, Hungary), Viminacium (near Belgrade, Serbia) or Novae (Svistov, Bulgaria). Together with hundreds of watchtowers and large urban settlements they are part of an impressive archaeological landscape. Yet, far from being at the periphery of the Roman world, this frontier played a crucial role in making and breaking emperors, creating vibrant societies along its course, and ensuring Rome's cultural legacy and survival.

A string of archaeological pearls. The river itself was the most dominant element of the frontier system, used as a demarcation line against the Barbarian world to the north and as a fortified transport corridor.



The Danube River was the most dominant element of the Roman frontier system, used as a demarcation line against the Barbarian world to the north and as a fortified transport corridor.

Roman forts and towers like this one in Mautern, Austria, survived remarkably well. Credit: Kuttner.

The forts, situated mostly on the right side of the river, acted as check-points to control traffic in and out of the empire. Their ruins, above and below ground, visible or non-visible, are often in remarkable shape, well integrated in the landscape and certainly deserve more generous attention. "The frontier once a great divide, forms a unifying element in today's world," says Francesco Bandarin, Director of the World Heritage Centre in Paris.

Legends tell how the Roman empire guarded and maintained this border line for more than 500 years, from its beginning under Augustus to its decline and fall amidst the barbarian invasions of the 5th and 6th centuries AD. Mark Aurel, one of the greatest Roman emperors and a philosopher on Rome's throne, wrote his lifetime memories here and died on the Danube shores. Although it is fascinating that so many of the remains have survived from antiquity in the world of today, they are more threatened than ever before by urban and rural development. We need to act together to protect and preserve those landscapes and monuments as a historical witness for future generations.

Proactive archaeological heritage management. The 'Danube Limes - UNESCO World Heritage' Project, co-funded by the Central Europe programme, concentrates on protecting and developing the Danube Limes monuments by nominating them for World Heritage status. The process has started in Slovakia, Hungary and Austria and it is intended to spread to all the Danube countries step by step. The project is supported by all the national governments, and NGOs like the ARGE Donauländer and the International Danube Tourist Commission, who declared 'The Romans on the Danube' their theme for the year 2010. Regional politicians, mayors and many experts agree that one of the most important issues for the understanding and long-term protection of the Roman remains is the provision of information about the monument to the public and providing better access to the sites.

For more information, please visit www.danubelimes.eu; www.limes-oesterreich.at.

Sonja Jilek works as communication manager of the CE Project 'Danube Limes - UNESCO World Heritage' and coordinates the transnational cooperation of the Danube countries.



Kalimok Marsh, Bulgaria. This Danube River Basin marsh has been reconnected with the river, creating spawning places in the once cut off wetlands. *Credit: Ivanov.*

Ten years of the Green Corridor

The Lower Danube is one of the last free-flowing stretches of river in Europe, and for the last ten years it has been the site of the most ambitious wetlands protection project in Europe – with some outstanding results.

A decade after four governments agreed to work together to establish a ‘green corridor’ along the entire length of the Lower Danube River, Europe’s most ambitious wetland protection and restoration programme is well ahead of targets for creating protected areas.

The Lower Danube Green Corridor Declaration, signed by environment ministers of Bulgaria, Romania, Ukraine and Moldova in 2000, pledged to boost protection for 775,000 ha of existing protected areas and bring another 160,000 ha under protection along the river’s final 1,000 kilometres.

The level of achievement however was much higher as some 1.4 million ha has been brought under protection to the benefit of some of Europe’s most outstanding wildlife, and enhancing water security, flood control and recreational opportunities for the area’s 29 million people.

Running behind target however is the task of wetlands restoration with the countries slightly more than a quarter of the way to their target of restoring 224,000 ha of former wetlands. It is calculated that over the past couple of centuries, some 80% of the Danube’s original floodplains, including important wetland areas, have been lost mostly due to drainage for agriculture and industry as well as flood prevention and navigation.

Wetlands protection and restoration key to a healthy river. “Wetlands protection and restoration is the key to a healthy river able to better deal with both droughts and floods,” said Andreas Beckman, Director of WWF’s Danube-Carpathian Programme. “Wetlands are not only cheap to maintain, but also save money and this is why we are taking steps not only to protect what remains, but actually to regain at least some of what has disappeared.”

The wide array of benefits provided by wetlands include flood and drought management through holding and slowly releasing water and water purification through filtration. Wetlands are also areas rich in resources such as fish and reeds.



Danube Delta, pelicans and cormorants. There is more life in one acre of a healthy wetland than there is in one acre of almost any other kind of habitat: 100 fish species live in the Danube and 5000 animal species live along the river. The Danube Delta is a resting and breeding area for more than 320 bird species. *Credit: WWF/Vorauer.*

€500 per hectare a year in wetland benefits. The value of the various benefits from Danube floodplains is estimated to be at least €500 per hectare a year.

But while WWF would like to see more work on wetlands restoration, Beckman said it was still appropriate to pay tribute to the protected area achievements of the four countries.

“The Lower Danube Green Corridor was and still is the most ambitious wetland protection and restoration initiative in Europe,” he said.

“We are looking forward to more ambitious targets for the next phase of developing the green corridor – and hopefully to celebrating again that the river is better protected than we had expected.”

Ministers of the environment and their deputies from the four nations gathered in Vienna in February to celebrate the ten year anniversary of the Lower Danube Green Corridor and affirmed their commitment to continue working together to develop the corridor. The celebration was a side event at the ICPDR Ministerial Meeting where Danube countries adopted The Danube River Basin Management Plan (see article page 6).

WWF research around the world has also shown that rivers and basins functioning naturally will be those best able to cope with challenges of climate change such as more frequent and severe floods and longer and deeper dry spells.



“WWF is calling on all countries of the Danube basin to set qualitative and ambitious targets for each country for wetland protection and restoration as a cost-effective means for securing a host of essential ecosystem services including flood management, clean drinking water and better protection from climate impacts,” said Beckman.

“Let us continue giving life to the Danube, so that the Danube can continue giving life to us.”

Olga Apostolova is the Regional Communications Officer of the WWF Danube - Carpathian Programme.

“The Lower Danube Green Corridor was and still is the most ambitious wetland protection and restoration initiative in Europe,” said Andreas Beckman, Director of WWF’s Danube-Carpathian Programme.

Celebrating the 10th anniversary of the Lower Danube Green Corridor agreement at the ICPDR Ministerial Meeting in Vienna on 16 February 2010. *Credit: Stögmüller.*



The Lower Danube Green Corridor has protected some of Europe’s most outstanding wildlife and enhanced water security, flood control and recreational opportunities for the area’s 29 million people. Fold out to see the Lower Danube Green Corridor map, and highlights of the project’s achievements.



Along the lower Danube green corridor.

After squeezing through the Iron Gates gorge and dams between Serbia and Romania, the Danube flows free for 1000 kilometres through Romania, Bulgaria, Moldova and Ukraine before emptying into the Black Sea. Credit: WWF

BULGARIA

The most ecologically important areas along the Lower Danube Green Corridor in Bulgaria are the Islands of Belene and Kalimok Marshes. There, former floodplain forests and wetlands are being restored, reconnecting them with the river, creating rich feeding, breeding and spawning grounds for fish, flora and fauna. This has provided opportunities for fishing, and economic benefits from grasslands and wetland resources, along with the survival of the riverine floodplain forest as an ecologic benefit. These model projects are the first of their type in Bulgaria.

ROMANIA

The Danube Delta is one of the world's most important eco-regions for biodiversity. In Romania, dry and unproductive land on the major islands of Babina and Cernovca has been returned to the river. The islands have been turned into a mosaic of habitats that offer shelter and food for many animals, including rare birds and valuable fish species. The economic benefits of the restoration works (3680 ha), in terms of increased natural resources productivity (fish, reed, grasslands) and tourism, is about €140,000 per year. Progress with restoration is also moving forward on the Lower Danube islands from Calarasi to Braila.

MOLDOVA

In Moldova, large sections of the Lower Prut River have been brought under protection and management plans are being prepared. With the support of the local community, a new management plan will be implemented at the Lake Beleu Scientific Reserve. This first attempt for an integrated management of wetlands will be expanded in the Lower Prut area as part of a Trilateral Biosphere Reserve between Moldova, Romania and Ukraine.

UKRAINE

On the Ukrainian side of the Danube Delta, authorities and NGOs are working hand in hand to develop a vision for the protection and restoration of the wetland areas – and have taken steps toward its realisation. Bulldozers have breached dikes on Tataru and Ermakov Islands, restoring natural flooding to 800 ha. This has allowed for the re-establishment of natural flooding conditions, creating rich feeding, breeding and spawning grounds for fish, flora and fauna. Today amazing rare birds, such as white-tailed eagles, pygmy cormorants and ferruginous ducks, thrive on Tataru Island, while inner lakes serve as spawning places for young fish from the Danube.

ICPDR MEETINGS

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

27-28/4/2010

SZOLNOK, HUNGARY

TISZA GROUP

29-30/4/2010

REGENSBURG, GERMANY

RIVER BASIN MANAGEMENT EXPERT GROUP

3-4/6/2010

LJUBLJANA, SLOVENIA

ICPDR STANDING WORKING GROUP

17-18/6/2010

ZNOJMO, CZECH REPUBLIC

PRESSURES AND MEASURES EXPERT GROUP

29/6/2010

DANUBE RIVER BASIN

DANUBE DAY!

14-15/9/2010

TIMIȘOARA , ROMANIA

INFORMATION MANAGEMENT AND GEOGRAPHICAL INFORMATION SYSTEM EXPERT GROUP

16-17/9/2010

BUCHAREST, ROMANIA

PRESSURES AND MEASURES EXPERT GROUP**DW 02/10****UPCOMING ISSUE****BIODIVERSITY****DANUBE DAY 2010****BRIDGES OF THE DANUBE**