

IN THE

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Keeping a close eye on groundwater resources

What has been the main focus of your work in the EPIRB project?

My main focus has been to translate the complicated Water Framework Directive [WFD] and Groundwater Directive requirements on the identification, delineation, classification and monitoring of groundwater bodies, and also to provide

Good professional relations and friendly contacts have been established between stakeholders in most of the project countries.

training and offer advice on measures to protect and manage groundwater bodies. I spent 250 days in six project countries, submitted 16 detailed technical reports, and gave 12 presentations at various workshops and seminars.

What are the main challenges related to groundwater protection that EPIRB project countries are facing?

Groundwater is an “invisible” resource that the governments of all the project countries are neglecting. Groundwater is of very high importance, and a major share of the drinking water supply in Armenia, Belarus, Moldova and Georgia comes from the subsurface. In Ukraine and Azerbaijan, the significance of groundwater is increasing as well, due to pollution and the high cost of surface water treatment.

At the start of the EPIRB project, groundwater monitoring networks were missing in Georgia and Ukraine [Prut basin], and in Azerbaijan a big part of the network had been destroyed. Available information was not reliable, as some groundwater laboratories were outdated, and monitoring wells were never purged prior to sampling. Improper management caused groundwater over-abstraction and pollution in Armenia, Belarus and Moldova. In Azerbaijan, Georgia and Ukraine, groundwater status was unknown due to the lack of data. Thus the main project tasks were to emphasise the importance of groundwater resources, to include them into the river basin management plans, and to implement some basic protection measures.

How did the EPIRB project help to address these issues? And what are the main project outcomes related to groundwater?

The project introduced surveys in all countries to fill data gaps. Four field expeditions were carried out in each pilot basin, modern groundwater monitoring equipment was rented, and 37 local specialists received hands-on training in WFD-compliant groundwater monitoring techniques. In addition to providing technical reports on European approaches to groundwater management, other practical measures were implemented in all pilot basins.

In Armenia and Moldova, new monitoring wells were drilled and equipped with telemetric stations; 10 new monitoring



HANDS-ON EXPERIENCE: Paukstys is doing his best to help raise the profile of groundwater resources.

installations were constructed in Armenia, and six in Georgia; in Moldova, 15 wells were refurbished and equipped with electronic devices; and 25 monitoring wells were restored in Azerbaijan. Besides the technical assistance, another important outcome of the project was that local specialists gained knowledge on river basin planning and became much more confident in their work.

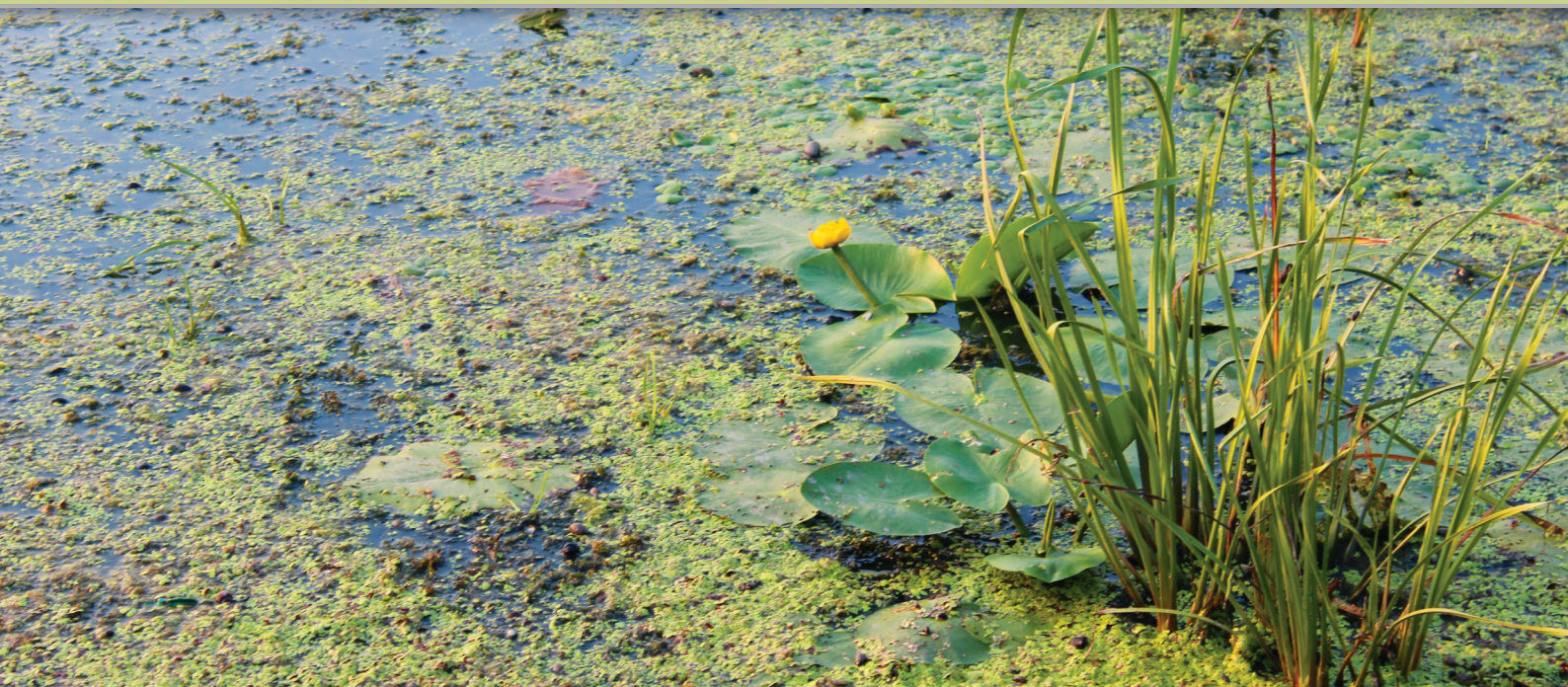
Bernardas Paukstys is a hydrogeologist who has worked on groundwater-related issues for over 40 years, primarily in Lithuania. He has undertaken missions to new EU member states (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Poland, Romania, Slovakia and Slovenia) and has also worked in EPIRB project beneficiary countries (Moldova, Russia and Ukraine).



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BASIN SPOTLIGHT

ALL IN GOOD TIME: Achieving legal and natural harmony can be a lengthy process.

Countries move closer to RBMP adoption

UKRAINE

Ukraine took important steps towards approximating its water legislation to EU norms by signing the Association Agreement in 2014. This provided political momentum for incorporating river basin management principles into existing and forthcoming Ukrainian legislation. Draft amendments to some laws, including the Water Code, passed through Parliament in May 2016 and are awaiting approval at a second, final hearing.

ARMENIA

In March 2016, the EPIRB project formally submitted a draft RBMP for the Akhuryan River Basin to the Ministry of Nature Protection of the Republic of Armenia, a step that initiated the formal adoption process. The EPIRB project is currently helping to carry out an EIA of the draft plan, pursuant to the requirements of the Law on Environmental Impact Assessment and Expert Examination. The project will help to address any comments that might arise when the ministry officially circulates the draft among government institutions.

AZERBAIJAN

A draft RBMP for Central Kura will likely be approved in autumn 2016. The National Environmental Monitoring Department of the Ministry of Ecology and Natural Resources (MENR) is now developing a water monitoring project and assessment methodology in the pilot river basin. Pending approval, work will be carried out to implement the Programme of Measures. The Scientific Research Hydrometeorology Institute of the MENR will use the Central Kura RBMP as a basis to develop similar RBMPs in other basins in the country.

MOLDOVA

In August and September 2016, the Institute of Ecology and Geography of the Academy of Science of Moldova, together with the Ministry of Environment, will hold public consultations regarding the Danube–Prut and Black Sea RBMP in the pilot river district. The RBMP contractor will introduce any objections that arise during the public consultation phase. In October 2016, the contractor, together with the Ministry of Environment and main beneficiaries, will elaborate an integrated executive summary of the

RBMP for the Danube–Prut and Black Sea River Basin District, which will also include the Prut RBMP.

GEORGIA

The adoption process of the Chorokhi–Adjara RBMP would benefit from improved national water legislation. The new Water Law, which includes secondary legislation with clear instructions for adopting basin management plans, is undergoing final review and will likely be approved this autumn. The EPIRB project, meanwhile, recommends that the draft RBMP be submitted to the regional government of the Autonomous Republic of Adjara through the Environmental Directorate as a “working document”.

BELARUS

The first session of the Dnieper Basin Council adopted a draft RBMP for the Upper Dnieper in March 2016, which the Ministry of Natural Resources and Environmental Protection submitted to regional committees for approval. A second council session will be held in September/October 2016. The Upper Dnieper RBMP enters into force in November/December 2016.

EPIRB-SUPPORTED PILOT PROJECTS

BELARUS: Flood Risk Assessment and Mapping of the Upper Dnieper Basin

Floods are natural phenomena that, in many instances, cannot be prevented. However, the implementation of proper anticipatory measures can significantly reduce the adverse consequences of flooding. The main objective of this pilot project is to enhance flood risk management in the Upper Dnieper Basin in Belarus through the practical implementation of EU Floods Directive requirements.

The EU Floods Directive sets out in detail three main ways to mitigate flood-related damage: preliminary flood risk assessment; flood mapping, which involves developing flood hazard maps and flood risk maps; and flood risk management plans. In implementing directive requirements, the pilot project will determine areas most at risk; conduct field surveys of critical sites; and follow through with mapping and the initial design of protection measures for the pilot territory.

Did you know? Large-scale flood mapping of the entire settlement of Dobrush is being carried out for the very first time, making this pilot project a pioneering effort for Belarus in flood management practices.



ARMENIA: Improvement of Water Resources Management and Ensuring Efficient Water Use in the Metsamor River Basin

Most of the Metsamor River Basin lies in the Ararat Valley, Armenia's largest agricultural zone. The basin's high-quality artesian groundwater has historically been used for drinking and irrigation purposes. However, groundwater extraction for domestic, industrial and cooling purposes has reached alarming levels in recent decades, and experts warn of eventual depletion if current trends continue unabated.

This pilot project aims to help regulate surface water and groundwater use in the basin through the development and introduction of a centralised and automated control system. Monitoring systems have already been installed at sites in three communities: Metsamor, Araks and Jrarat.

Did you know? System replication throughout the entire basin (all 213 water abstraction points) will require a one-time investment of approximately EUR 725,000. According to expert assessment, savings and revenue generation from the new system will recoup the cost of investment within 10 years.



MOLDOVA: Baseline Monitoring and Design of WFD-Compliant Surveillance Programme for the Lake Beleu Protected Area in the Lower Prut Basin

Beleu Lake, situated in the lower part of the Prut River flood plain, provides a habitat for many fish and bird species and serves as a breeding ground for several Danube region bird populations. The lake's water level, influenced by the flows of both the Danube and Prut rivers, varies with spring and summer floods. In order to understand the lake's ecosystem and periodic draining, a wide range of biological and chemical parameters need to be studied, and WFD-compliant monitoring systems need to be established.

The main objectives of the pilot project are to establish a biological, chemical and hydro-morphological baseline for the lake and to design a monitoring programme in line with the WFD, the new Water Law and other international legislation. Such a baseline programme could serve in the future as an example for other natural lakes in Moldova.

Did you know? Persistent drought in the summer and autumn of 2015 made it impossible to perform chemical analyses at Lake Beleu in order to evaluate water quality. The extended EPIRB project period therefore comes as a relief, as it will now be possible to compile a brand new set of data in line with WFD and Water Law requirements.



MOVING FORWARD



FRIENDLY WEATHER: It was a gorgeous June day for taking macroinvertebrate samples from the Black Sea.

Going deeper. EPIRB project takes on a marine context

The EPIRB project ventured into new territory in 2015. Alongside its work within the freshwater-based Water Framework Directive (WFD), the project provided guidance on the development of coastal and transitional water body typologies, as well as on the monitoring of such water bodies in compliance with EU environmental legislation. Because of the spatial overlap between the WFD and the Marine Strategy Framework Directive (MSFD), and to avoid any misallocation of work between the EPIRB project and its sibling, the EMBLAS project, a training course was held in Batumi, Georgia, on June 14–16, 2016. The training focused on:

- links between the WFD and MSFD;
- biological monitoring for both directives (macrophytes and macroinvertebrates);
- interpretation and intercalibration of biological data;
- options for “salty” water body delineation; and
- developing combined programmes of measures to satisfy both directives.

Deploying a hired vessel, a sediment grabber and a scuba diver on the first day of the course, the team collected macroinvertebrate samples from the Black Sea. The second day was spent in the laboratory, processing the samples, and the third

consisted of a series of informal presentations and discussions. Twelve participants attended — four each from Azerbaijan, Georgia and Ukraine — and were encouraged to ask questions and express opinions.

A preliminary delineation of coastal and transitional water body boundaries has already been undertaken for the Chorokhi-Adjaristskali Basin, and plans are in the works to conduct a pilot monitoring exercise concerning these water bodies, based on the training provided.

A three-day training was held to address overlapping areas between the Water Framework Directive and the Marine Strategy Framework Directive.

CALENDAR

July

- **6:** Installation and handover ceremony of groundwater monitoring stations to the National Environmental Agency, Batumi, Georgia
- **21:** Ukraine-Moldova-Romania Prut Working Group meeting, Vienna, Austria
- **25-26:** EPIRB Web GIS Portal regional training, Minsk, Belarus

August

- **2-3:** Public consultation meetings of Chorokhi–Adjaristskali RBMP

The above dates are all subject to confirmation. For final dates please consult the online EPIRB calendar, available at www.blacksea-riverbasins.net



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