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### **Zuzana Vítková and Anna Patschová / SHMI Bratislava**

#### ***Monitoring of the ground water quality***

The objective of the monitoring, which has been carried out by the Slovak Hydrometeorological Institute (SHMI), is not only the documentation of quantitative characteristics of the ground water chemical composition but also the evaluation of its quality. This has been done since 1982 within the national monitoring programme. The article brings concrete results of the last year's monitoring. More information about this subject is in the magazine's enclosure.  
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### **László Miklós / Minister of the Environment**

#### ***Integrated landscape management – the topical requirement of the present time***

The Minister of the Environment stresses the topicality and the necessity to implement an integrated approach in the landscape management. Water management is its essential part. As he says, the landscape and environment we do not understand yet as a consistent unit but perceived from the point of view of individual ministries, leading often to the extreme exploitation of natural resources. Drinking water shortage is the most acute problem. After the World Summit in Johannesburg at the 3<sup>rd</sup> World Forum on Water in Kyoto, Slovakia acceded the plan to implement gradually the integrated management in the territory – the new Water Act, Framework Directive on Water.  
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### **Zita Izakovičová / Landscape Ecology Institute of the Slovak Academy of Sciences in Bratislava**

#### ***Integrated management of water sources protection and use***

Water as the essential and basic source, necessary for life, is the main topic of this article (and also motto of this Enviromagazin),. water that is the essential life environment for some organisms. It is also the main condition for social-economic development. The author of the article writes about the

risks to water sources, about basic steps of integrated management of water sources protection and use. Its practical application will contribute to the elimination of environmental problems and to the strengthening of the social-economic development of rural areas.  
(page 4-5)

**Eleonóra Bartková – Water Management Department of MoE SR**  
*EU Framework Directive on Water*

By the adoption of the Framework Directive on Water, which came into force in December 2000, the attitude to water sources protection has changed. It focuses on the creation of conditions for the sustainable use of water sources through the integrated management in catchment areas. This new relation of man to water requires the implementation of new approaches in water protection from the side of state authorities. The Framework Directive on Water expands the system of water protection, in comparison with previous regulations, on “all” waters and sets a clear objective – achievement of “good quality” of water by the year 2015 and use of water sources in the sustainable way.  
(page 6 – 7)

**Peter Rončák / SHMI Bratislava**  
*Situation and protection of surface water quality in Slovakia*

Water is an important environmental component that together with human activity affects the quality of the environment. Surface water sources are used for various purposes, particularly by industry (83.3%), agriculture (9%) and for water supply to inhabitants (7.8%). Eutrophication, microbiological pollution, contents of heavy metals and organic substances, sedimentation and change of water ecosystems biodiversity belong to major problems caused by surface water use. These problems are evident mainly in watercourses with low water content, while larger watercourses in Slovakia have sufficient assimilatory capacity to cope with in-coming pollution. It is necessary to find a balance between protection instruments, such as legal regulations and their enforcement, application of economic instruments for water sources protection and involvement of all stakeholders in water protection in catchment areas. Such integrated approach will result in the efficient protection of watercourses and in the satisfaction of the society's needs.  
(page 8 – 9)

**Anna Patschová and Eugen Kullman / SHMI Bratislava**  
*Ground water resources*

Natural resources of ground water in Slovakia are set to  $147 \text{ m}^3 \cdot \text{s}^{-1}$ . More than 50% of this volume represent documented usable volumes (sources) of ground water. More than a half of ground water resources in Slovakia (59%) are located in quaternary hydrogeological structures created by fluvial sediments (Žitný island and valleys of significant watercourses) that cover about 26% of the total area of Slovakia and represent the most significant areas in Slovakia from the water management point of view. In 2002,  $13,013 \text{ l} \cdot \text{s}^{-1}$  of ground water were withdrawn, 79% of which for drinking purposes.  
(page 10 – 11)

**Margita Slovinská and Elena Buchlerová / Research Institute of Water Management in Bratislava**  
*Drinking water quality in public water supplies in SR in 2002*

After the overall evaluation of the drinking water quality in public water mains on the basis of the percentage of analysis exceeding limit values (0.99%) the situation can be considered as satisfactory. In the evaluation of the proportion of samples, in which at least one indicator exceeds the limit value (13.14%), situation is not so satisfactory. However, this evaluation is distorted to a certain degree because it does not take into account the health significance of individual indicators.  
(page 12 – 13)

**Vladimír Mužík / SEA**

***Minimum summer water flows and their impact on the river hydrofauna***

Hydrological conditions in Central Europe were characterised from the beginning by a shortage of precipitation resulting from dry and warm weather. These extremes affected especially fishes, which, as typical hydrobionts, have no possibility to escape or to move to the better environment. The occurrence of ecological accidents is alarming. 31 accidents occurred in Slovakia from the beginning of July to the mid-August. The author of the article focuses concretely on the company Biotika Slovenská Lupča, which caused three documented accidents on the Hron river during the last six years. The financial value of perished fish for this period of time highly exceeds 5 mil Slovak crowns. The article brings also the standpoint of the chairman of the board of directors and the general director of Biotika Jozef Krištofčák.

**Juraj Tolgyessy and Margita Harangozó / Faculty of Natural Sciences, Matej Bel University Banská Bystrica**

***Environmental policy for neat-handed***

The authors of the article focus on the manual production of recycled paper and its use for decorative and utility products. They advise what to do with glass bottles and dangerous substances in households.

(page 15)

**Renáta Grófova / Slovak Environmental Agency (SEA) Banská Bystrica**

***Water resources and their quality from the European point of view***

There are three main aspects, connected with the existence of human society, which affect very significantly the original, natural quality of water resources not only in Europe but also on other continents: agricultural activity, industrial production and human beings with their biological and social needs. The Framework Directive on Water, valid for EU member states, has changed very significantly the idea of water sources monitoring, evaluation and management. It introduces the term “ecological situation of surface water” that should be evaluated on the basis of biological, hydromorphological, physical and chemical indicators.

page 16 and 21)

***Miniatlas of water invertebrates***

**Compiled by Tomáš Kizek / SEA Banská Bystrica**

(page 17 – 20)

**Ján Szolgay / Slovak Technical University in Bratislava**

***Possibilities of adaptation to the climate change in water management***

Commonly used methods for the estimation of the climate change impact on runoff regime are briefly described. General tendencies of expected river runoff changes at the territory of Slovakia are presented. The article draws attention to uncertainties of the approaches used in impact studies and suggests adaptation measures for water resources management and planning in Slovakia.

(page 22 – 23)

**Anna Gudzová / SEA Banská Bystrica**

***Laco Hanniker: Fish is a man living underwater***

The prosecutor, writer, fisherman .... this all is Laco Hanniker. And he is a very untraditional fisherman. He frees fish he has angled. He has big sympathy to fishes because fish, according to him is a man living underwater. He has written several tales and books about his experiences, feelings and

life with fish (but not only with fish). As a writer he meditates also about the life and coexistence with people – and these thoughts are not always pleasant. Angling is his biggest passion.  
(page 24 – 25)

**Aleš Mazáč – Slovak Water Management Company, Banská Štiavnica**  
*New perspectives of the Slovak Water Management Company*

Water management has a special position in the economy of Slovakia. Although it participates in the gross product creation only indirectly, it is an important element of social and economic development and fulfils national tasks in compliance with the Programme Declaration of the Slovak Government and the Strategy of the Water Management Policy in Slovakia. The present period is characterised with a striking dynamics of global natural, political, economic and ecological changes. It touches also water management and the Water Management Company in Banská Štiavnica.

**Eva Klementová and Martina Juráková / Slovak Technical University in Bratislava**  
*Artificial water reservoirs in the landscape*

In Slovakia, small water reservoirs contain large amount of water. Through Agenda 21 we undertook to use water in a rational way. In majority of case they were built as water supplies intended for irrigation. However, after the change of social, market, economic and proprietary conditions it was necessary to find out their current utilisation, technical conditions and their significance in the landscape. Therefore the comprehensive evaluation of small water reservoirs has been prepared for catchment areas management as well as the evaluation of their landscape-ecological significance and the level of ecological stability for the locality of a small water reservoir.  
(page 28 – 29)

**Vladimír Mužík / SEA, Miroslav Zontág / State Nature Protection of SR, Pavol Kráľ / TANAP State Forests**  
*Optimisation of the Štrbské pleso water ecosystem*

At the end of the 20<sup>th</sup> century several negative anthropogenic phenomena were recorded in Štrbské pleso (lake). In this originally oligotrophic lake such big changes occurred that it cannot be evaluated and classified any more as oligotrophic lake but as mesotrophic and in some parts as weakly eutrophic. The authors of the article characterise Štrbské pleso and the life in it. Its oldest inhabitant is the brown trout, which was brought here by local foresters in the middle of the 19<sup>th</sup> century. About 50 years later it was the brook trout and in 1929 the whitefish belonging at present to critically endangered species from the world-wide point of view. Štrbské pleso is one of very rare (if not the only locality, in which this species occurs in wild nature, probably with original gene pool.  
(page 30 – 31)

**Juraj Galvánek**  
*Water forms in the Hron river region*

Hron, the second longest Slovak river, is, from the landscape point of view, a variable territory. The Hron valley has, in spite of its morphological manifoldness, one common character that affects probably the most fascinating form of water – the river level is relatively the lowest point of the surrounding landscape, it is covered by gravel deposits often combined with other types of sediments. Water moves here by operation of gravitation and water level height varies according to the principle of communicating vessels and it depends on the height of the watercourse level. This basic principle has been influencing the character and variability of wetland communities accompanying the river from its spring down to the junction.  
(page 32 – 33)

### ***World heritage***

Kinabalu Park in Malaysia, historical town Ayutthaya in Thailand, town Luangprabang in Laos, Banc d'Arguin National park in Mauretania.

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### **ENVIROMAGAZÍN**

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