



## **Presentation of environmental monitoring data applying GIS**

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The efficiency of nature protection, management of environmental quality, the use and restoration of natural resources substantially depends on the level of practical development of management system. Commonly, ecological problems require rapid and proper actions, which efficiency directly depends on the efficiency of data presentation and processing technique. This makes it necessary to systematize existing data, process them following requirements and assure data comprehensiveness.

The paper contains examples of presentation of research data on different environmental objects.

The impact of a set of man-made factors results in qualitative and quantitative changes in river water, this in turn leading to deterioration of ecological state of rivers.

The outcomes obtained in the frame of an ongoing NATO/OSCE project “South Caucasus river monitoring” are

- digitalization of Armenia’s river network contouring out Rivers Kura-Araks basin,
- reflection of 13 sampling points on a 1:200000 scale map of Armenia applying GPS and ArcView GIS 3.2a program,
- compilation of computer database on heavy metal contents in the study river waters,

- the database-underpinned calculation of mean contents, concentration index, summary pollution index of heavy metals,
- reflection of the noted digital indices in digital maps through ArcView GIS 3.2a program.

Our research pursues determination of the level of heavy metal contents for Yerevan's soils. A set of schematic maps was produced based on soil sampling data and applying Surfer 6.04 and the Kriging interpolation method. The maps show distribution of heavy metal concentration all across the city's soils.

Radiation safety is one of today's topical issues, so we have developed National Response Planning Program in joint with Armenian Nuclear Regulatory Authority and WS Atkins Environment. In the frame of the program a model was developed that allows determining direction and intensity of radioactive pollution in the case of plausible nuclear emergencies, zoning the area by exposure degree. The developed ArcView GIS 3.2a - based model comprises

- layers of the relief, settlements, water objects, highways, green zones,
- a sector model containing 16 sectors of a 30km belt surrounding the ArmNPP,
- a computer database on settlements and the number of inhabitants.

Thus, data presentation in form of digital maps applying GIS allows the analysis and forecast of environmental phenomena, identification of major factors and reasons, management of plausible consequences and relevant actions to be taken, plan strategic solutions and current actions.