

Preface

Assessment of the hydrological drought and impact analysis of this phenomenon on water quality are an important and interesting area of hydrogeological research. The main reason is that a sufficient amount of quality drinking water limits the possibilities of society development. Therefore, it is important to deal with this issue more widely and in greater depth.

The presented thesis represents a comprehensive overview of the results obtained in the described field during 4 years of doctoral study. The thesis is quite extensive and is supplemented by 75 tables, 122 illustrations and eight appendices. Overall, the work can be divided into several individual parts.

In the first part, the author deals with theoretical analysis of the problem and the current state of its completion in home and foreign literature. The next section briefly describes new programs that were developed for the purpose of input data processing. These programs are available for a download on a separate website and are currently used in over 50 countries.

The next chapter is devoted to the evaluation of hydrological drought in various components of the hydrological cycle of water in the catchment. At first, the drought in surface water is assessed in a regional scale for the area of Slovakia. Then the assessment of drought in surface- and groundwater, and the assessment of meteorological drought in the area of selected upper part of the Nitra river catchment are processed. Finally, the individual parameters of drought in the hydrological cycle are compared with each other.

Another extensive chapter is the evaluation of the quality of surface- and groundwater at selected quantitative states of river discharges and groundwater levels. At the end of the chapter, the individual results are summarized and compared. The last two chapters present the summation of all the results obtained in the work, and a short description of the opportunities for further research.

The work results have been published in individual articles and presented at several conferences. Some results are going to be published after their completion in other articles. An individual and extensive result of the work is software HydroOffice, which is still being developed.

Surface- and Groundwater Quality Changes in Periods
of Water Scarcity

Gregor, M.

2013, XVIII, 230 p., Hardcover

ISBN: 978-3-642-32243-3