



Impact of an inter-basin water transfer and reservoir operation in karst on the hydrological regime: the example of the Sabljaki and Bukovik reservoirs (Croatia)

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The Sabljaki reservoir in the Zagorska Mrežnica River and the Bukovik reservoir in the Upper Dobra River began operation in 1959. Both are part of the hydroelectric power plant (HEPP) Gojak. Their water volumes at the spillway altitude of 320.10 m a. s. l. and 320.15 m a. s. l. is 3.3×10^6 m³ and 0.24×10^6 m³ respectively. Water from the Sabljaki reservoir is provided by 9376 m long tunnel to the HEPP Gojak constructed in the neighboring Lower Dobra River. The Sabljaki reservoir is located in the Mrežnica karst polje while the Bukovik reservoir is located in the neighboring Ogulin karst polje. The consequence of the inter-basin water transfer is strong and abrupt change of hydrological regime on the downstream parts of both rivers. At the same time construction and development of the both reservoirs caused hydrological changes on the upstream part of the Upper Dobra River. The both Dobra and Mrežnica Rivers are at the same time losing, sinking and underground karst rivers. The presentation describes hydrological changes caused by inter-basin water transfer and the reservoirs development on the hydrological regime on the both rivers.