



Watershed areas and the source Bošnjaci Characteristics

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Watershed areas of Bošnjaci source belong to the geomorphology forms in mountain areas around: Veliko Ruište with highest point of 1652 m.s.l., Malo Ruište, Crna gora, north-west slope of Veleži, karst plateau Pločno and karst depression of Donje Zijeplje and Gornje Zijeplje. The watershed structure has specifics surface and underground elements of karstification processes. The karstification of watershed to have look oneself in the forms; holes, graves, abysses, fluvio-glacial elements and karst sources, which one is Bošnjaci as a main object of our investigation.

In a watershed zones we determined the sediments of: Triassic (T_1, T_2^2, T_3), Jurassic ($J_1, J_2, J_3, J_3^{1,2}, J_3^{2,3}$), Krita (K_1, K_2, K_2^1, K_2^2), Neogen and Kvaratar (*gl, fgl, d, s*).

There have no precise data evidence about tectonic of watershed, however four tectonic zones were defined: A- the block of Veleži, B- the block of Zijeplje, C- The block of Crna gora, D- The block of Bijelo polje.

The key role for our investigation in the watershed areas has a stony massifs which are selected in seven categories: i) inter grain porosity and very bad water permeability, ii) inter grain porosity and well water permeability, iii) good cementing sediments – here and there very well water permeability, iv) cavernian and fissure porosity in hard stone massifs– bad water porosity, v) cavernian and fissure porosity in hard stone massifs– middle water permeability, vi) cavernian and fissure porosity in hard stone massifs– well water permeability and vii) non permeable stone massifs. On that elaborated elements of porosity and karstification stone massifs we defined hydrogeological functions as: i) karst aquifers which are divided in two groups, (W.B.White, 1969.),

ii) hydrogeology barriers.

We analysed the role of vegetation, then water filtration and water protection characteristics of defining type of soils in a frame of defining watershed areas. There was established the next types of soil: i) lithosol, ii) calcomelanosol, iii) calcocambisol, iv) colluvium, v) terra rossa, vi) eutric cambisol.

We estimated rainfall and temperature for 62-year period and gave the maximum, minimum, average levels, PET and their tendency for 10-year period. We established i) rainfall yearly tendency, $y = -55,8x + 111938$; ii) minimal rainfall monthly tendency, $y = -9,28x + 18466$; iii) PET yearly tendency, $y = 0,3x + 232$; iv) monthly PET tendency for July, $y = 5,1x + 9976,6$.

Using comparative methods for long period measuring (1936. –1975.) for source Radobolja, and source Bošnjaci (1988., 1999.) we estimated source water flow for: i) maximum average yearly flow, $Q_{av.max.} = 0,445\text{m}^3/\text{s}$, ii) minimum average yearly flow, $Q_{av.min.} = 0,204\text{m}^3/\text{s}$, iii) yearly average flow, $Q_{av.} = 0,325\text{m}^3/\text{s}$.

Disharmony between surface and underground watershed is a main characteristic of Bošnjaci source and that indicates the differences between orographic watershed and hydrology watershed.

Key words: Watershed, water, karst, soil, sources.