Web application for Intensity of Erosion and Outflow

Name of the River Basin: Dapsicka rijeka

Country: Montenegro

Year: 2018

GPS coordinates, latitude and longitude with Google Maps: 42.852222,19.915897

INPUT DATA

Geometric characteristics of the river basins

F = 80.83718 km² (Surface area of the drainage basin)

O = 43.12901 km (Length of the watershed)

 $Fv = 40.65309 \text{ km}^2$ (Surface area of greater portion of the drainage basin)

Fm = 40.18409 km² (Surface area of smaller portion of the drainage basin)

Lv = 14.59089 km (Natural length of main water course)

Lb = 14.27343 km (Length of the drainage basin measured by a series of paraller lines)

Topograpfic characteristics of the river basins

Contour line length - Liz [km]: ["16.01063 ","28.71888 ","35.03008 ","35.51994 ","39.22990 ","26.47032 ","20.92235 ","15.49818 ","6.61357 ","4.06595 "]

The area between the two neighboring contour lines - f [km²]: ["5.39101 ","9.52462 ","16.65904 ","11.11142 ","11.76584 ","9.39669 ","6.41921 ","5.11992 ","3.05413 ","1.60851 ","0.78679 "]

h0 = 700 m (Altitude of the initial contour)

 $\Delta h = 100 \text{ m (Equidistance)}$

Hmin = 671 (Lowest altitude in the drainage basin)

Hmax = 1688 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

 $\Sigma L = 29.80422$ km (The total length of the main watercourse with tributaries of 1st and 2nd class)

Lm = 12.50909 km (The shortest distance between the fountain (head and mouth))

Water permeability

fp = 0.3414 (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))

fpp = 0.5782 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

fo = 0.0804 (Part of the surface area of the drainage basin which is composed of the rocks of poor water permeability (heavy clay, compact eruptive))

Land use

fs = 0.516199238 (Part of the surface area of the drainage basin under the forest)

ft = 0.426054438 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

fg = 0.057746324 (Part of the surface area of the drainage basin which is bare or under the soils without grass vegetation)

Meteorological data

hb = 115 mm (Level of torrent rain)

Up (years) = 100

to = 9.0 °C (Average annual air temperature)

Hgod = 944.3 mm (Average annual quantity of precipitation)

Erosion coefficients

Y = 1.07156 (Types of soil structures and allied types)

3.74 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

65.21 % (Serpentines, red sand stones, flishe deposits)

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0 % (Podzols and parapodzols, decomposed schist)
31.05 % (Solid and Schist limestone, Terra Rosa and Humic soil)
0 % (Brown forest soils and Mountain soils)
0 % (Epieugleysol and Marshlands)
0 % (Good structured Chernozems and alluvial well-structured deposits)
0 % (Bare, compact igneous)
Xa = 0.467035 (Planning of the drainage basin, rate of drainage basin regulation)
0 % (Bare lands)
5.77 % (Plough-lands)
2.74 % (Orchards and vineyards)
20.15 % (Mountain pastures)
19.72 % (Meadows)
30.97 % (Degraded forests)
20.65 % (Well-constituted forests)
\phi = 0.343115 (Numerical coefficient of visible and clearly pointed processes of soil erosion)
5.18 % (Depth erosion)
4.61 % (80% of the river basin under rill and gully erosion)
4.03 % (50% of the river basin under rill and gully erosion)
3.45 % (100% of the river basin under surface erosion)
19.72 % (100% of the river basin under surface erosion, without visible furrows, ravines and
land slides)
1.73 % (50% of the river basin under surface erosion)
1.15 % (20% of the river basin under surface erosion)
0 % (There are smaller slides in the watercourse beds)
5.77 % (The river basin mostly under plough-land)
54.36 % (The river basin under forests and perennial vegetation)
INPUT DATA
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A = 0.57639780369806 (Coefficient of the river basin form)

m = 0.45779524130161 (Coefficient of the watershed development)

B = 5.663472620106 km (Average river basin width)

a = 0.011603571524885 ((A)symmetry of the river basin)

G = 0.36869445470512 (Density of the river network of the basin) **K** = 1.166422977211 (Coefficient of the river basin tortuousness) $H_{sr} = 1012.7323480977$ m (Average river basin altitude) D = 341.7323480977 m (Average elevation difference of the river basin) $I_{sr} = 28.21471506057 \%$ (Average river basin decline) H_{leb} = 1017 m (The height of the local erosion base of the river basin) $E_r = 107.96134626936$ (Coefficient of the erosion energy of the river basins relief) $S_1 = 0.6217$ (Coefficient of the regions permeability) $S_2 = 0.7083094172$ (Coefficient of the vegetation cover) W = 1.3022668188937 m (Analytical presentation of the water retention in inflow) $2gDF^{1/2} = 736.20391777865 \text{ m km s}^{-1}$ (Energetic potential of water flow during torrent rains) $Q_{max} = 243.34604932447 \text{ m}^3 \text{ s}^{-1}$ (Maximal outflow from the river basin) **T = 1 (Temperature coefficient of the region)** Z = 0.43754382493108 (Coefficient of the river basin erosion)

 $W_{god} = 69407.013185067 \text{ m}^3 \text{ god}^{-1}$ (Production of erosion material in the river basin

 $R_u = 0.31223640541411$ (Coefficient of the deposit retention)

 $G_{god} = 21671.396307435 \text{ m}^3 \text{ god}^{-1} \text{ (Real soil losses)}$

 G_{god} km⁻² = 268.08699050901 m³ km⁻² god⁻¹ (Real soil losses per km²)

http://www.wintero.me