Web application for Intensity of Erosion and Outflow

Name of the River Basin: Nedakusi

Country: Montenegro

Year: 2018

GPS coordinates, latitude and longitude with Google Maps: 43.061861,19.765378

INPUT DATA

Geometric characteristics of the river basins

 $F = 3.04722 \text{ km}^2$ (Surface area of the drainage basin)

O = 7.42855 km (Length of the watershed)

 $Fv = 1.7156 \text{ km}^2$ (Surface area of greater portion of the drainage basin)

Fm = 1.33162 km² (Surface area of smaller portion of the drainage basin)

Lv = 1.17361 km (Natural length of main water course)

Lb = 2.98208 km (Length of the drainage basin measured by a series of paraller lines)

Topograpfic characteristics of the river basins

Contour line length - Liz [km]: ["2.23821 ","1.87280 ","1.39779 "]

The area between the two neighboring contour lines - f [km²]: ["1.47046 ","0.66148 ","0.66309 ","0.25219 "]

h0 = 600 m (Altitude of the initial contour)

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

Hmin = 553 (Lowest altitude in the drainage basin)

Hmax = 828 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

 $\Sigma L = 1.17361$ km (The total length of the main watercourse with tributaries of 1st and 2nd class)

Lm = 1.08767 km (The shortest distance between the fountain (head and mouth))

Water permeability

fp = 0 (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))

fpp = 0.4242 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

fo = 0.5758 (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 = 0.570047170 (Part of the surface area of the drainage basin under the forest)

ft = 0.280760474 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

fg = 0.149192356 (Part of the surface area of the drainage basin which is bare or under the soils without grass vegetation)

Meteorological data

hb = 157.6 mm (Level of torrent rain)

Up (years) = 100

to = 8.9 °C (Average annual air temperature)

Hgod = 873.7 mm (Average annual quantity of precipitation)

Erosion coefficients

Y = 1.45928 (Types of soil structures and allied types)

39.92 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

60.08 % (Serpentines, red sand stones, flishe deposits)

0 % (Podzols and parapodzols, decomposed schist)

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0 % (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 = 0.508335 (Planning of the drainage basin, rate of drainage basin regulation)
0 % (Bare lands)
14.92 % (Plough-lands)
5.88 % (Orchards and vineyards)
5.91 % (Mountain pastures)
16.29 % (Meadows)
37.05 % (Degraded forests)
19.95 % (Well-constituted forests)
\phi = 0.23044 (Numerical coefficient of visible and clearly pointed processes of soil erosion)
1.52 % (Depth erosion)
1.35 % (80% of the river basin under rill and gully erosion)
1.18 % (50% of the river basin under rill and gully erosion)
1.01 % (100% of the river basin under surface erosion)
16.29 % (100% of the river basin under surface erosion, without visible furrows, ravines and
land slides)
0.51 % (50% of the river basin under surface erosion)
0.34 % (20% of the river basin under surface erosion)
0 % (There are smaller slides in the watercourse beds)
14.92 % (The river basin mostly under plough-land)
62.89 % (The river basin under forests and perennial vegetation)
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INPUT DATA

A = 1.2342833223984 (Coefficient of the river basin form)

m = 0.18965616489762 (Coefficient of the watershed development)

B = 1.0218438137139 km (Average river basin width)

a = 0.25201987385223 ((A)symmetry of the river basin)

G = 0.38514121067727 (Density of the river network of the basin)

K = 1.0790129359089 (Coefficient of the river basin tortuousness) $H_{sr} = 649.86523782333 \text{ m (Average river basin altitude)}$ D = 96.86523782333 m (Average elevation difference of the river basin) $I_{sr} = 18.078117103458 \text{ % (Average river basin decline)}$ $H_{leb} = 275 \text{ m (The height of the local erosion base of the river basin)}$ $E_r = 66.253201413827 \text{ (Coefficient of the erosion energy of the river basins relief)}$ $S_1 = 0.87274 \text{ (Coefficient of the regions permeability)}$ $S_2 = 0.7158290372 \text{ (Coefficient of the vegetation cover)}$ W = 1.7663493042462 m (Analytical presentation of the water retention in inflow) $2gDF^{1/2} = 76.10012692368 \text{ m km s}^{-1} \text{ (Energetic potential of water flow during torrent rains)}$ $Q_{max} = 103.65041044256 \text{ m}^3 \text{ s}^{-1} \text{ (Maximal outflow from the river basin)}$ T = 0.99498743710662 (Temperature coefficient of the region) Z = 0.48634368558007 (Coefficient of the river basin erosion) $W_{god} = 2822.5948071498 \text{ m}^3 \text{ god}^{-1} \text{ (Production of erosion material in the river basin)}$

 $R_u = 0.15183520732756$ (Coefficient of the deposit retention)

 $G_{god} = 428.56926774527 \text{ m}^3 \text{ god}^{-1} \text{ (Real soil losses)}$

 $G_{god} \text{ km}^{-2} = 140.64270638328 \text{ m}^3 \text{ km}^{-2} \text{ god}^{-1} \text{ (Real soil losses per km}^2\text{)}$

http://www.wintero.me