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 km^2 (Surface area of the drainage basin)

O = 7.42855 km (Length of the watershed)

Fv = 1.7156 km^2 (Surface area of greater portion of the drainage basin)

Fm = 1.33162 km^2 (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 [km^2]: ["1.47046 ","0.66148 ","0.66309 ","0.25219 "]

h0 = 600 m (Altitude of the initial contour)

Δh = 100 m (Equidistance)

Hmin = 553 (Lowest altitude in the drainage basin)

Hmax = 828 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

ΣL = 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)

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)

ϕ = 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)

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 m (Average river basin altitude)

D = 96.86523782333 m (Average elevation difference of the river basin)

I_{sr} = 18.078117103458 % (Average river basin decline)

H_{leb} = 275 m (The height of the local erosion base of the river basin)

E_r = 66.253201413827 (Coefficient of the erosion energy of the river basins relief)

S_1 = 0.87274 (Coefficient of the regions permeability)

S_2 = 0.7158290372 (Coefficient of the vegetation cover)

W = 1.7663493042462 m (Analytical presentation of the water retention in inflow)

$2gDF^{1/2}$ = 76.10012692368 m km s^{-1} (Energetic potential of water flow during torrent rains)

Q_{max} = 103.65041044256 m^3 s^{-1} (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 m^3 god^{-1} (Production of erosion material in the river basin

R_u = 0.15183520732756 (Coefficient of the deposit retention)

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

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