Web application for Intensity of Erosion and Outflow

Name of the River Basin: Novsicki potok

Country: Montenegro

Year: 2018

GPS coordinates, latitude and longitude with Google Maps: 42.639204,19.935218

INPUT DATA

Geometric characteristics of the river basins

F = 1.71344 km^2 (Surface area of the drainage basin)

O = 6.45006 km (Length of the watershed)

Fv = 0.94913 km^2 (Surface area of greater portion of the drainage basin)

Fm = 0.76431 km^2 (Surface area of smaller portion of the drainage basin)

Lv = 1.42343 km (Natural length of main water course)

Lb = 2.6646 km (Length of the drainage basin measured by a series of paraller lines)

Topograpfic characteristics of the river basins

Contour line length - Liz [km]: ["0.261558 ","0.905049 ","1.0548 ","1.212138 ","1.34163 ","1.354167 ","1.24047 ","1.091133 ","1.089738 ","1.064502 ","1.049994 ","1.293858 ","1.194219 ","1.08999 ","0.854883 ","0.534033 ","0.368307 ","0.244101 "]

The area between the two neighboring contour lines - f [km^2]: ["0.0138288 ","0.0788018 ","0.1011102 ","0.1186542 ","0.1418914 ","0.1085062 ","0.1267812 ","0.1081794 ","0.103157 ","0.0776494 ","0.0957524 ","0.1020734 ","0.1109314 ","0.0946086 ","0.1132362 ","0.056373 ","0.0948408 ","0.0520902 ","0.0

h0 = 900 m (Altitude of the initial contour)

Δh = 50 m (Equidistance)

Hmin = 870 (Lowest altitude in the drainage basin)

Hmax = 1778 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

ΣL = 1.42343 km (The total length of the main watercourse with tributaries of 1st and 2nd class)

Lm = 1.24777 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 = 0.156 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

fo = 0.844 (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 = 0.562633764 (Part of the surface area of the drainage basin under the forest)

ft = 0.387425290 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

fg = 0.049940946 (Part of the surface area of the drainage basin which is bare or under the soils without grass vegetation)

Meteorological data

hb = 89.4 mm (Level of torrent rain)

Up (years) = 100

to = 8.1 °C (Average annual air temperature)

Hgod = 1182.3 mm (Average annual quantity of precipitation)

Erosion coefficients

Y = 1.24184 (Types of soil structures and allied types)

15.76 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

84.24 % (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 = 0.31957 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

4.99 % (Plough-lands)

1.5 % (Orchards and vineyards)

9.13 % (Mountain pastures)

28.11 % (Meadows)

12.51 % (Degraded forests)

43.76 % (Well-constituted forests)

ϕ = 0.307305 (Numerical coefficient of visible and clearly pointed processes of soil erosion)

2.35 % (Depth erosion)

2.09 % (80% of the river basin under rill and gully erosion)

1.83 % (50% of the river basin under rill and gully erosion)

1.57 % (100% of the river basin under surface erosion)

28.11 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

0.78 % (50% of the river basin under surface erosion)

0.52 % (20% of the river basin under surface erosion)

0 % (There are smaller slides in the watercourse beds)

4.99 % (The river basin mostly under plough-land)

57.76 % (The river basin under forests and perennial vegetation)

INPUT DATA

A = 0.88361331431823 (Coefficient of the river basin form)

m = 0.30675858943571 (Coefficient of the watershed development)

B = 0.64303835472491 km (Average river basin width)

a = 0.21572976001494 ((A)symmetry of the river basin)

G = 0.83074400037352 (Density of the river network of the basin)

K = 1.1407791500036 (Coefficient of the river basin tortuousness)

H_{sr} = 1382.1793204314 m (Average river basin altitude)

D = 512.1793204314 m (Average elevation difference of the river basin)

I_{sr} = 50.321487767299 % (Average river basin decline)

H_{leb} = 908 m (The height of the local erosion base of the river basin)

E_r = 252.62059314954 (Coefficient of the erosion energy of the river basins relief)

S_1 = 0.9532 (Coefficient of the regions permeability)

S_2 = 0.6974614364 (Coefficient of the vegetation cover)

W = 1.1331697855215 m (Analytical presentation of the water retention in inflow)

$2gDF^{1/2}$ = 131.21847069973 m km s^{-1} (Energetic potential of water flow during torrent rains)

Q_{max} = 87.348699391567 m^3 s^{-1} (Maximal outflow from the river basin)

T = 0.95393920141695 (Temperature coefficient of the region)

Z = 0.40347490283018 (Coefficient of the river basin erosion)

W_{god} = 1555.9367842345 m^3 god^{-1} (Production of erosion material in the river basin

R_u = 0.31821919146491 (Coefficient of the deposit retention)

G_{god} = 495.12894544961 m^3 god^{-1} (Real soil losses)

G_{god} km^{-2} = 288.96777561491 m^3 km^{-2} god^{-1} (Real soil losses per km^2)