Web application for Intensity of Erosion and Outflow

Name of the River Basin: Miocki potok

Country: Montenegro

Year: 2018

GPS coordinates, latitude and longitude with Google Maps: 43.138682,19.773887

INPUT DATA

Geometric characteristics of the river basins

F = 41.05907 km^2 (Surface area of the drainage basin)

O = 30.70126 km (Length of the watershed)

Fv = 26.20215 km^2 (Surface area of greater portion of the drainage basin)

Fm = 14.85692 km^2 (Surface area of smaller portion of the drainage basin)

Lv = 6.32589 km (Natural length of main water course)

Lb = 11.11752 km (Length of the drainage basin measured by a series of paraller lines)

Topograpfic characteristics of the river basins

Contour line length - Liz [km]: ["12.70622 ","22.47492 ","24.16420 ","19.89668 ","16.55711 ","13.36863 ","12.14923 ","6.36042 ","2.24839 ","0.45849 "]

The area between the two neighboring contour lines - f [km^2]: ["2.51322 ","5.22359 ","6.67593 ","6.59297 ","5.89601 ","4.61562 ","3.98547 ","3.40481 ","1.57289 ","0.54508 ","0.03348 "]

h0 = 600 m (Altitude of the initial contour)

▲h = 100 m (Equidistance)

Hmin = 535 (Lowest altitude in the drainage basin)

Hmax = 1553 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

ΣL = 13.88313 km (The total length of the main watercourse with tributaries of 1st and 2nd class)

Lm = 6.02786 km (The shortest distance between the fountain (head and mouth))

Water permeability

fp = 0.1234 (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))

fpp = 0.0373 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

fo = 0.8393 (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 = 0.494418976 (Part of the surface area of the drainage basin under the forest)

ft = 0.373520123 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

fg = 0.132060901 (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 = 1.10168 (Types of soil structures and allied types)

1.19 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

94.34 % (Serpentines, red sand stones, flishe deposits)

0 % (Podzols and parapodzols, decomposed schist)

4.46 % (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 = 0.51442 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

13.21 % (Plough-lands)

1 % (Orchards and vineyards)

20.82 % (Mountain pastures)

15.53 % (Meadows)

32.14 % (Degraded forests)

17.3 % (Well-constituted forests)

ϕ = 0.330515 (Numerical coefficient of visible and clearly pointed processes of soil erosion)

5.35 % (Depth erosion)

4.76 % (80% of the river basin under rill and gully erosion)

4.16 % (50% of the river basin under rill and gully erosion)

3.57 % (100% of the river basin under surface erosion)

15.53 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

1.78 % (50% of the river basin under surface erosion)

1.19 % (20% of the river basin under surface erosion)

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

13.21 % (The river basin mostly under plough-land)

50.44 % (The river basin under forests and perennial vegetation)

INPUT DATA

A = 0.94638789166426 (Coefficient of the river basin form)

m = 0.27849163162698 (Coefficient of the watershed development)

B = 3.6931860702747 km (Average river basin width)

a = 0.55262966258125 ((A)symmetry of the river basin)

G = 0.33812577829941 (Density of the river network of the basin)

K = 1.0494420905595 (Coefficient of the river basin tortuousness)

H_{sr} = 917.80807675381 m (Average river basin altitude)

D = 382.80807675381 m (Average elevation difference of the river basin)

I_{sr} = 31.75529548039 % (Average river basin decline)

H_{leb} = 1018 m (The height of the local erosion base of the river basin)

E_r = 128.01051012147 (Coefficient of the erosion energy of the river basins relief)

S_1 = 0.91477 (Coefficient of the regions permeability)

S_2 = 0.727528385 (Coefficient of the vegetation cover)

W = 1.6986538294287 m (Analytical presentation of the water retention in inflow)

$2gDF^{1/2}$ = 555.32164537716 m km s^{-1} (Energetic potential of water flow during torrent rains)

Q_{max} = 594.12867708269 m^3 s^{-1} (Maximal outflow from the river basin)

T = 0.99498743710662 (Temperature coefficient of the region)

Z = 0.50667215808297 (Coefficient of the river basin erosion)

W_{god} = 40441.706617163 m^3 god^{-1} (Production of erosion material in the river basin

R_u = 0.41997339165313 (Coefficient of the deposit retention)

G_{god} = 16984.440692251 m^3 god^{-1} (Real soil losses)

G_{god} km^{-2} = 413.65867985443 m^3 km^{-2} god^{-1} (Real soil losses per km^2)