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 km² (Surface area of the drainage basin)

O = 30.70126 km (Length of the watershed)

Fv = 26.20215 km² (Surface area of greater portion of the drainage basin)

 $Fm = 14.85692 \text{ km}^2$ (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 [km²]: ["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)

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

Hmin = 535 (Lowest altitude in the drainage basin)

Hmax = 1553 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

 $\Sigma L = 13.88313$ 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)

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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)
\phi = 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
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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) $H_{sr}=917.80807675381 \text{ m (Average river basin altitude)}$ D=382.80807675381 m (Average elevation difference of the river basin) $I_{sr}=31.75529548039 \text{ % (Average river basin decline)}$ $H_{leb}=1018 \text{ m (The height of the local erosion base of the river basin)}$ $E_{r}=128.01051012147 \text{ (Coefficient of the erosion energy of the river basins relief)}$ $S_{1}=0.91477 \text{ (Coefficient of the regions permeability)}$ $S_{2}=0.727528385 \text{ (Coefficient of the vegetation cover)}$ W=1.6986538294287 m (Analytical presentation of the water retention in inflow) $2gDF^{1/2}=555.32164537716 \text{ m km s}^{-1} \text{ (Energetic potential of water flow during torrent rains)}$ $Q_{max}=594.12867708269 \text{ m}^{3} \text{ s}^{-1} \text{ (Maximal outflow from the river basin)}$ T=0.99498743710662 (Temperature coefficient of the region)

Z = 0.50667215808297 (Coefficient of the river basin erosion)

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

 $R_u = 0.41997339165313$ (Coefficient of the deposit retention)

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

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

http://www.wintero.me