
Web application for Intensity of Erosion and Outflow

Name of the River Basin: Rovacki potok

Country: Montenegro

Year: 2018

**GPS coordinates, latitude and longitude with Google Maps:
42.817809,19.866599**

INPUT DATA

Geometric characteristics of the river basins

F = 11.69991 km² (Surface area of the drainage basin)

O = 17.97199 km (Length of the watershed)

Fv = 7.77371 km² (Surface area of greater portion of the drainage basin)

Fm = 3.9262 km² (Surface area of smaller portion of the drainage basin)

Lv = 7.32939 km (Natural length of main water course)

Lb = 8.95886 km (Length of the drainage basin measured by a series of parallel lines)

Topographic characteristics of the river basins

Contour line length - Liz [km]: ["2.26373 ", "2.44888 ", "3.41644 ", "6.61094 ", "5.77042 ", "4.94255 ", "4.89357 ", "4.17590 ", "0.68560 "]

The area between the two neighboring contour lines - f [km²]: ["1.46015 ", "1.21997 ", "0.85333 ", "0.98065 ", "2.09782 ", "1.89411 ", "1.20545 ", "1.27968 ", "0.67651 ", "0.03226 "]

h0 = 700 m (Altitude of the initial contour)

Δh = 100 m (Equidistance)

Hmin = 690 (Lowest altitude in the drainage basin)

Hmax = 1567 (Highest altitude in the drainage basin)

Hydrological characteristics of the river basins

$\Sigma L = 7.32939$ km (The total length of the main watercourse with tributaries of 1st and 2nd class)

$L_m = 6.06925$ km (The shortest distance between the fountain (head and mouth))

Water permeability

$f_p = 0.7788$ (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))

$f_{pp} = 0.2212$ (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

$f_o = 0$ (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

$f_s = 0.569665531$ (Part of the surface area of the drainage basin under the forest)

$f_t = 0.361735681$ (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

$f_g = 0.068598788$ (Part of the surface area of the drainage basin which is bare or under the soils without grass vegetation)

Meteorological data

$h_b = 115$ mm (Level of torrent rain)

U_p (years) = 100

$t_o = 9.0$ °C (Average annual air temperature)

$H_{god} = 944.3$ mm (Average annual quantity of precipitation)

Erosion coefficients

$Y = 1.33903$ (Types of soil structures and allied types)

33.07 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

37.63 % (Serpentines, red sand stones, flishe deposits)

0 % (Podzols and parapodzols, decomposed schist)

29.3 % (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 = 0.460195 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

6.86 % (Plough-lands)

3.34 % (Orchards and vineyards)

13.62 % (Mountain pastures)

19.22 % (Meadows)

34.18 % (Degraded forests)

22.79 % (Well-constituted forests)

$\phi = 0.29517$ (Numerical coefficient of visible and clearly pointed processes of soil erosion)

3.5 % (Depth erosion)

3.11 % (80% of the river basin under rill and gully erosion)

2.72 % (50% of the river basin under rill and gully erosion)

2.33 % (100% of the river basin under surface erosion)

19.22 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

1.17 % (50% of the river basin under surface erosion)

0.78 % (20% of the river basin under surface erosion)

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

6.86 % (The river basin mostly under plough-land)

60.31 % (The river basin under forests and perennial vegetation)

INPUT DATA

A = 0.47814866585077 (Coefficient of the river basin form)

m = 0.60446566749059 (Coefficient of the watershed development)

B = 1.3059596868352 km (Average river basin width)

a = 0.65769907631768 ((A)symmetry of the river basin)

G = 0.6264484085775 (Density of the river network of the basin)
K = 1.2076269720311 (Coefficient of the river basin tortuousness)
H_{sr} = 1045.517269791 m (Average river basin altitude)
D = 355.517269791 m (Average elevation difference of the river basin)
I_{sr} = 30.092564814601 % (Average river basin decline)
H_{leb} = 877 m (The height of the local erosion base of the river basin)
E_r = 150.93991129251 (Coefficient of the erosion energy of the river basins relief)
S₁ = 0.46636 (Coefficient of the regions permeability)
S₂ = 0.6997866514 (Coefficient of the vegetation cover)
W = 1.3406486806972 m (Analytical presentation of the water retention in inflow)
2gDF^{1/2} = 285.67426131384 m km s⁻¹ (Energetic potential of water flow during torrent rains)
Q_{max} = 59.763495936829 m³ s⁻¹ (Maximal outflow from the river basin)
T = 1 (Temperature coefficient of the region)
Z = 0.51992326106903 (Coefficient of the river basin erosion)
W_{god} = 13012.215743941 m³ god⁻¹ (Production of erosion material in the river basin)
R_u = 0.29172601205162 (Coefficient of the deposit retention)
G_{god} = 3796.0018069353 m³ god⁻¹ (Real soil losses)
G_{god} km⁻² = 324.44709463024 m³ km⁻² god⁻¹ (Real soil losses per km²)