
Web application for Intensity of Erosion and Outflow

Name of the River Basin: Nikolin potok

Country: Montenegro

Year: 2018

**GPS coordinates, latitude and longitude with Google Maps:
43.009608,19.739122**

INPUT DATA

Geometric characteristics of the river basins

F = 1.55807 km² (Surface area of the drainage basin)

O = 6.60901 km (Length of the watershed)

Fv = 0.84346 km² (Surface area of greater portion of the drainage basin)

Fm = 0.71461 km² (Surface area of smaller portion of the drainage basin)

Lv = 2.43468 km (Natural length of main water course)

Lb = 3.02977 km (Length of the drainage basin measured by a series of parallel lines)

Topographic characteristics of the river basins

Contour line length - Liz [km]: ["0.25 ", "1.25458 ", "2.36614 ", "2.96405 ", "2.02494 ", "1.79414 ", "1.77331 ", "0.18047 "]

The area between the two neighboring contour lines - f [km²]: ["0.08060 ", "0.07773 ", "0.20672 ", "0.25671 ", "0.28424 ", "0.18212 ", "0.22623 ", "0.24325 ", "0.01236 "]

h0 = 600 m (Altitude of the initial contour)

Δh = 50 m (Equidistance)

Hmin = 551 (Lowest altitude in the drainage basin)

Hmax = 983 (Highest altitude in the draigane basin)

Hydrological characteristics of the river basins

$\Sigma L = 3.02207$ km (The total length of the main watercourse with tributaries of 1st and 2nd class)

$L_m = 2.2963$ km (The shortest distance between the fountain (head and mouth))

Water permeability

$f_p = 0$ (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))

$f_{pp} = 0.077$ (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

$f_o = 0.923$ (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

$f_s = 0.572645755$ (Part of the surface area of the drainage basin under the forest)

$f_t = 0.372279326$ (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

$f_g = 0.055074919$ (Part of the surface area of the drainage basin which is bare or under the soils without grass vegetation)

Meteorological data

$h_b = 157.6$ mm (Level of torrent rain)

U_p (years) = 100

$t_o = 8.9$ °C (Average annual air temperature)

$H_{god} = 893.3$ mm (Average annual quantity of precipitation)

Erosion coefficients

$Y = 1.17425$ (Types of soil structures and allied types)

8.25 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

91.75 % (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 = 0.47634 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

5.51 % (Plough-lands)

8.67 % (Orchards and vineyards)

9.24 % (Mountain pastures)

19.32 % (Meadows)

37.22 % (Degraded forests)

20.04 % (Well-constituted forests)

$\phi = 0.264305$ (Numerical coefficient of visible and clearly pointed processes of soil erosion)

2.38 % (Depth erosion)

2.11 % (80% of the river basin under rill and gully erosion)

1.85 % (50% of the river basin under rill and gully erosion)

1.58 % (100% of the river basin under surface erosion)

19.32 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

0.79 % (50% of the river basin under surface erosion)

0.53 % (20% of the river basin under surface erosion)

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

5.51 % (The river basin mostly under plough-land)

65.93 % (The river basin under forests and perennial vegetation)

INPUT DATA

A = 0.52933319779191 (Coefficient of the river basin form)

m = 0.55022899638651 (Coefficient of the watershed development)

B = 0.51425355720071 km (Average river basin width)

a = 0.16539693338553 ((A)symmetry of the river basin)

G = 1.9396240220273 (Density of the river network of the basin)
K = 1.0602621608675 (Coefficient of the river basin tortuousness)
H_{sr} = 786.90671150847 m (Average river basin altitude)
D = 235.90671150847 m (Average elevation difference of the river basin)
I_{sr} = 40.459125713222 % (Average river basin decline)
H_{leb} = 432 m (The height of the local erosion base of the river basin)
E_r = 123.07989944145 (Coefficient of the erosion energy of the river basins relief)
S₁ = 0.9769 (Coefficient of the regions permeability)
S₂ = 0.6964858328 (Coefficient of the vegetation cover)
W = 1.7437961156615 m (Analytical presentation of the water retention in inflow)
2gDF^{1/2} = 84.920615373418 m km s⁻¹ (Energetic potential of water flow during torrent rains)
Q_{max} = 53.333534639835 m³ s⁻¹ (Maximal outflow from the river basin)
T = 0.99498743710662 (Temperature coefficient of the region)
Z = 0.5036205052634 (Coefficient of the river basin erosion)
W_{god} = 1554.9157981503 m³ god⁻¹ (Production of erosion material in the river basin)
R_u = 0.20083238005273 (Coefficient of the deposit retention)
G_{god} = 312.27744052413 m³ god⁻¹ (Real soil losses)
G_{god} km⁻² = 200.42580918965 m³ km⁻² god⁻¹ (Real soil losses per km²)

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