
Web application for Intensity of Erosion and Outflow

Name of the River Basin: Susica

Country: Montenegro

Year: 2018

**GPS coordinates, latitude and longitude with Google Maps:
42.99937,19.783771**

INPUT DATA

Geometric characteristics of the river basins

F = 19.88449 km² (Surface area of the drainage basin)

O = 18.87811 km (Length of the watershed)

Fv = 15.55164 km² (Surface area of greater portion of the drainage basin)

Fm = 4.33285 km² (Surface area of smaller portion of the drainage basin)

Lv = 4.61118 km (Natural length of main water course)

Lb = 8.47295 km (Length of the drainage basin measured by a series of parallel lines)

Topographic characteristics of the river basins

Contour line length - Liz [km]: ["4.71580 ", "7.09187 ", "9.06489 ", "12.09064 ", "9.39542 ", "8.02450 ", "3.10048 ", "1.45538 "]

The area between the two neighboring contour lines - f [km²]: ["5.46874 ", "1.96215 ", "1.76201 ", "2.47458 ", "3.14015 ", "2.55860 ", "1.73104 ", "0.55649 ", "0.23072 "]

h0 = 700 m (Altitude of the initial contour)

Δh = 100 m (Equidistance)

Hmin = 670 (Lowest altitude in the drainage basin)

Hmax = 1474 (Highest altitude in the drainage basin)

Hydrological characteristics of the river basins

$\Sigma L = 8.96687$ km (The total length of the main watercourse with tributaries of 1st and 2nd class)

$L_m = 3.4541$ km (The shortest distance between the fountain (head and mouth))

Water permeability

$f_p = 0.5922$ (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))

$f_{pp} = 0.1445$ (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

$f_o = 0.2633$ (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

$f_s = 0.564559451$ (Part of the surface area of the drainage basin under the forest)

$f_t = 0.350041601$ (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

$f_g = 0.085398949$ (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

$Y = 1.3092$ (Types of soil structures and allied types)

24.35 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

71.13 % (Serpentines, red sand stones, flishe deposits)

0 % (Podzols and parapodzols, decomposed schist)

3.53 % (Solid and Schist limestone, Terra Rosa and Humic soil)

1 % (Brown forest soils and Mountain soils)

0 % (Epieugleysol and Marshlands)

0 % (Good structured Chernozems and alluvial well-structured deposits)

0 % (Bare, compact igneous)

Xa = 0.45926 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

8.54 % (Plough-lands)

3.27 % (Orchards and vineyards)

9.02 % (Mountain pastures)

22.72 % (Meadows)

33.87 % (Degraded forests)

22.58 % (Well-constituted forests)

$\phi = 0.28125$ (Numerical coefficient of visible and clearly pointed processes of soil erosion)

2.32 % (Depth erosion)

2.06 % (80% of the river basin under rill and gully erosion)

1.8 % (50% of the river basin under rill and gully erosion)

1.55 % (100% of the river basin under surface erosion)

22.72 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

0.77 % (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)

8.54 % (The river basin mostly under plough-land)

59.72 % (The river basin under forests and perennial vegetation)

INPUT DATA

A = 0.79832742378307 (Coefficient of the river basin form)

m = 0.29170905822571 (Coefficient of the watershed development)

B = 2.3468201747915 km (Average river basin width)

a = 1.1283960513948 ((A)symmetry of the river basin)

G = 0.45094794988456 (Density of the river network of the basin)
K = 1.3349874062708 (Coefficient of the river basin tortuousness)
H_{sr} = 933.00922176028 m (Average river basin altitude)
D = 263.00922176028 m (Average elevation difference of the river basin)
I_{sr} = 27.629061645534 % (Average river basin decline)
H_{leb} = 804 m (The height of the local erosion base of the river basin)
E_r = 121.1930072017 (Coefficient of the erosion energy of the river basins relief)
S₁ = 0.60133 (Coefficient of the regions permeability)
S₂ = 0.7041679004 (Coefficient of the vegetation cover)
W = 1.3599658789281 m (Analytical presentation of the water retention in inflow)
2gDF^{1/2} = 320.32602015572 m km s⁻¹ (Energetic potential of water flow during torrent rains)
Q_{max} = 147.26189109066 m³ s⁻¹ (Maximal outflow from the river basin)
T = 1 (Temperature coefficient of the region)
Z = 0.48514937173591 (Coefficient of the river basin erosion)
W_{god} = 19933.682148869 m³ god⁻¹ (Production of erosion material in the river basin)
R_u = 0.305006748772 (Coefficient of the deposit retention)
G_{god} = 6079.907583281 m³ god⁻¹ (Real soil losses)
G_{god} km⁻² = 305.76130357284 m³ km⁻² god⁻¹ (Real soil losses per km²)