Web application for Intensity of Erosion and Outflow

Name of the River Basin: Sliv Seockog potoka

Country: Montenegro

Year: 2018

GPS coordinates, latitude and longitude with Google Maps: 42.931179,19.853992

INPUT DATA

Geometric characteristics of the river basins

F = 6.84925 km^2 (Surface area of the drainage basin)

O = 11.19337 km (Length of the watershed)

Fv = 4.85049 km^2 (Surface area of greater portion of the drainage basin)

Fm = 1.99876 km^2 (Surface area of smaller portion of the drainage basin)

Lv = 1.63664 km (Natural length of main water course)

Lb = 4.36078 km (Length of the drainage basin measured by a series of paraller lines)

Topograpfic characteristics of the river basins

Contour line length - Liz [km]: ["3.97953 ","3.98426 ","3.79276 ","3.54904 ","2.24257 ","2.09055 ","0.20457 "]

The area between the two neighboring contour lines - f [km^2]: ["1.39718 ","0.95068 ","1.26481 ","1.04352 ","0.86878 ","0.72280 ","0.59109 ","0.01039 "]

h0 = 700 m (Altitude of the initial contour)

▲h = 100 m (Equidistance)

Hmin = 649 (Lowest altitude in the drainage basin)

Hmax = 1318 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

ΣL = 2.33664 km (The total length of the main watercourse with tributaries of 1st and 2nd class)

Lm = 1.39107 km (The shortest distance between the fountain (head and mouth))

Water permeability

fp = 0.3868 (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))

fpp = 0.1983 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

fo = 0.4149 (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 = 0.598511436 (Part of the surface area of the drainage basin under the forest)

ft = 0.308099763 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

fg = 0.093388801 (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 = 983.7 mm (Average annual quantity of precipitation)

Erosion coefficients

Y = 1.15738 (Types of soil structures and allied types)

9.72 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

75.23 % (Serpentines, red sand stones, flishe deposits)

0 % (Podzols and parapodzols, decomposed schist)

15.05 % (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 = 0.4601 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

9.34 % (Plough-lands)

1.37 % (Orchards and vineyards)

10.63 % (Mountain pastures)

18.81 % (Meadows)

35.91 % (Degraded forests)

23.94 % (Well-constituted forests)

ϕ = 0.27342 (Numerical coefficient of visible and clearly pointed processes of soil erosion)

2.73 % (Depth erosion)

2.43 % (80% of the river basin under rill and gully erosion)

2.13 % (50% of the river basin under rill and gully erosion)

1.82 % (100% of the river basin under surface erosion)

18.81 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

0.91 % (50% of the river basin under surface erosion)

0.61 % (20% of the river basin under surface erosion)

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

9.34 % (The river basin mostly under plough-land)

61.22 % (The river basin under forests and perennial vegetation)

INPUT DATA

A = 1.3336513527715 (Coefficient of the river basin form)

m = 0.17641142986201 (Coefficient of the watershed development)

B = 1.5706479116121 km (Average river basin width)

a = 0.83271307077417 ((A)symmetry of the river basin)

G = 0.34115268095047 (Density of the river network of the basin)

K = 1.1765331723062 (Coefficient of the river basin tortuousness)

H_{sr} = 907.79901741067 m (Average river basin altitude)

D = 258.79901741067 m (Average elevation difference of the river basin)

I_{sr} = 28.971464028908 % (Average river basin decline)

H_{leb} = 669 m (The height of the local erosion base of the river basin)

E_r = 131.63321556725 (Coefficient of the erosion energy of the river basins relief)

S_1 = 0.70843 (Coefficient of the regions permeability)

S_2 = 0.698975473 (Coefficient of the vegetation cover)

W = 1.7570833937341 m (Analytical presentation of the water retention in inflow)

$2gDF^{1/2}$ = 186.48861443906 m km s^{-1} (Energetic potential of water flow during torrent rains)

Q_{max} = 216.39433493065 m^3 s^{-1} (Maximal outflow from the river basin)

T = 0.99498743710662 (Temperature coefficient of the region)

Z = 0.43222360885981 (Coefficient of the river basin erosion)

W_{god} = 5984.610463091 m^3 god^{-1} (Production of erosion material in the river basin

R_u = 0.29252577473233 (Coefficient of the deposit retention)

G_{god} = 1750.6528121869 m^3 god^{-1} (Real soil losses)

G_{god} km^{-2} = 255.59773875781 m^3 km^{-2} god^{-1} (Real soil losses per km^2)