Web application for Intensity of Erosion and Outflow

Name of the River Basin: Krivacki potok

Country: Montenegro

Year: 2018

GPS coordinates, latitude and longitude with Google Maps: 42.663653,19.902088

INPUT DATA

Geometric characteristics of the river basins

F = 3.07806 km^2 (Surface area of the drainage basin)

O = 9.1759 km (Length of the watershed)

Fv = 1.74879 km^2 (Surface area of greater portion of the drainage basin)

Fm = 1.32927 km^2 (Surface area of smaller portion of the drainage basin)

Lv = 2.78414 km (Natural length of main water course)

Lb = 4.32931 km (Length of the drainage basin measured by a series of paraller lines)

Topograpfic characteristics of the river basins

Contour line length - Liz [km]: ["1.45953 ","1.55601 ","1.48878 ","1.33318 ","1.3085 ","1.23931 ","1.1613 ","1.2656 ","0.5191 ","0.30147 ","0.12045 "]

The area between the two neighboring contour lines - f [km^2]: ["0.27895 ","0.26845 ","0.36231 ","0.34325 ","0.3416 ","0.41414 ","0.31605 ","0.35195 ","0.26197 ","0.08884 ","0.04375 ","0.00952 "]

h0 = 900 m (Altitude of the initial contour)

Δh = 100 m (Equidistance)

Hmin = 842 (Lowest altitude in the drainage basin)

Hmax = 1988 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

ΣL = 2.78414 km (The total length of the main watercourse with tributaries of 1st and 2nd class)

Lm = 2.60557 km (The shortest distance between the fountain (head and mouth))

Water permeability

fp = 0.0605 (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))

fpp = 0.1562 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

fo = 0.7833 (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 = 0.653552485 (Part of the surface area of the drainage basin under the forest)

ft = 0.296261262 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

fg = 0.050186253 (Part of the surface area of the drainage basin which is bare or under the soils without grass vegetation)

Meteorological data

hb = 89.4 mm (Level of torrent rain)

Up (years) = 100

to = 8.1 °C (Average annual air temperature)

Hgod = 1182.3 mm (Average annual quantity of precipitation)

Erosion coefficients

Y = 1.1602 (Types of soil structures and allied types)

7.06 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

91.27 % (Serpentines, red sand stones, flishe deposits)

0 % (Podzols and parapodzols, decomposed schist)

1.67 % (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 = 0.307615 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

5.02 % (Plough-lands)

7.49 % (Orchards and vineyards)

0 % (Mountain pastures)

22.14 % (Meadows)

16.14 % (Degraded forests)

49.21 % (Well-constituted forests)

ϕ = 0.21321 (Numerical coefficient of visible and clearly pointed processes of soil erosion)

0 % (Depth erosion)

0 % (80% of the river basin under rill and gully erosion)

0 % (50% of the river basin under rill and gully erosion)

0 % (100% of the river basin under surface erosion)

22.14 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

0 % (50% of the river basin under surface erosion)

0 % (20% of the river basin under surface erosion)

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

5.02 % (The river basin mostly under plough-land)

72.84 % (The river basin under forests and perennial vegetation)

INPUT DATA

A = 0.64267619444424 (Coefficient of the river basin form)

m = 0.44765928560151 (Coefficient of the watershed development)

B = 0.71098165758516 km (Average river basin width)

a = 0.27258727900041 ((A)symmetry of the river basin)

G = 0.9045112830809 (Density of the river network of the basin)

K = 1.0685339484259 (Coefficient of the river basin tortuousness)

H_{sr} = 1283.3423747425 m (Average river basin altitude)

D = 441.3423747425 m (Average elevation difference of the river basin)

I_{sr} = 38.18388855318 % (Average river basin decline)

H_{leb} = 1146 m (The height of the local erosion base of the river basin)

E_r = 275.40097575211 (Coefficient of the erosion energy of the river basins relief)

S_1 = 0.91684 (Coefficient of the regions permeability)

S_2 = 0.6793267536 (Coefficient of the vegetation cover)

W = 1.1204169188381 m (Analytical presentation of the water retention in inflow)

$2gDF^{1/2}$ = 163.25852027443 m km s^{-1} (Energetic potential of water flow during torrent rains)

Q_{max} = 73.218360258248 m^3 s^{-1} (Maximal outflow from the river basin)

T = 0.95393920141695 (Temperature coefficient of the region)

Z = 0.29663005078001 (Coefficient of the river basin erosion)

W_{god} = 1761.9681707672 m^3 god^{-1} (Production of erosion material in the river basin

R_u = 0.31482602601334 (Coefficient of the deposit retention)

G_{god} = 554.71343716462 m^3 god^{-1} (Real soil losses)

G_{god} km^{-2} = 180.21527753345 m^3 km^{-2} god^{-1} (Real soil losses per km^2)