Web application for Intensity of Erosion and Outflow

Name of the River Basin: Uvezacki potok

Country: Montenegro

Year: 2018

GPS coordinates, latitude and longitude with Google Maps: 42.983814,19.76365

INPUT DATA

Geometric characteristics of the river basins

F = 8.75632 km^2 (Surface area of the drainage basin)

O = 14.52221 km (Length of the watershed)

Fv = 5.55147 km^2 (Surface area of greater portion of the drainage basin)

Fm = 3.20485 km^2 (Surface area of smaller portion of the drainage basin)

Lv = 1.35435 km (Natural length of main water course)

Lb = 6.00371 km (Length of the drainage basin measured by a series of paraller lines)

Topograpfic characteristics of the river basins

Contour line length - Liz [km]: ["8.13329 ","9.01899 ","9.60111 ","5.81637 ","1.53708 "]

The area between the two neighboring contour lines - f [km^2]: ["1.71501 ","1.88908 ","2.36487 ","1.68284 ","0.96118 ","0.14334 "]

h0 = 600 m (Altitude of the initial contour)

Δh = 100 m (Equidistance)

Hmin = 586 (Lowest altitude in the drainage basin)

Hmax = 1018 (Highest altitude in the draigane basin

Hydrological characteristics of the river basins

ΣL = 1.35435 km (The total length of the main watercourse with tributaries of 1st and 2nd class)

Lm = 1.27769 km (The shortest distance between the fountain (head and mouth))

Water permeability

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

fpp = 0.0753 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))

fo = 0.9247 (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 = 0.569872890 (Part of the surface area of the drainage basin under the forest)

ft = 0.360011498 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)

fg = 0.070115612 (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 = 893.3 mm (Average annual quantity of precipitation)

Erosion coefficients

Y = 1.27478 (Types of soil structures and allied types)

19.42 % (Sand, gravel and incoherent soils)

0 % (Saline soils)

0 % (Decomposed limestone and marls)

80.58 % (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 = 0.487455 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

7.01 % (Plough-lands)

11.11 % (Orchards and vineyards)

7.43 % (Mountain pastures)

17.45 % (Meadows)

37.04 % (Degraded forests)

19.95 % (Well-constituted forests)

ϕ = 0.242995 (Numerical coefficient of visible and clearly pointed processes of soil erosion)

1.91 % (Depth erosion)

1.7 % (80% of the river basin under rill and gully erosion)

1.49 % (50% of the river basin under rill and gully erosion)

1.27 % (100% of the river basin under surface erosion)

17.45 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

0.64 % (50% of the river basin under surface erosion)

0.42 % (20% of the river basin under surface erosion)

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

7.01 % (The river basin mostly under plough-land)

68.11 % (The river basin under forests and perennial vegetation)

INPUT DATA

A = 2.090915162255 (Coefficient of the river basin form)

m = 0.12911157167461 (Coefficient of the watershed development)

B = 1.4584848368759 km (Average river basin width)

a = 0.53598315273996 ((A)symmetry of the river basin)

G = 0.15467114038774 (Density of the river network of the basin)

K = 1.0599989042726 (Coefficient of the river basin tortuousness)

H_{sr} = 743.088476666 m (Average river basin altitude)

D = 157.088476666 m (Average elevation difference of the river basin)

I_{sr} = 38.951111882617 % (Average river basin decline)

H_{leb} = 432 m (The height of the local erosion base of the river basin)

E_r = 79.938034920789 (Coefficient of the erosion energy of the river basins relief)

S_1 = 0.97741 (Coefficient of the regions permeability)

S_2 = 0.7000485444 (Coefficient of the vegetation cover)

W = 1.7625464499834 m (Analytical presentation of the water retention in inflow)

$2gDF^{1/2}$ = 164.27916164688 m km s^{-1} (Energetic potential of water flow during torrent rains)

Q_{max} = 414.25179211989 m^3 s^{-1} (Maximal outflow from the river basin)

T = 0.99498743710662 (Temperature coefficient of the region)

Z = 0.53881613106985 (Coefficient of the river basin erosion)

W_{god} = 9670.4639924939 m^3 god^{-1} (Production of erosion material in the river basin

R_u = 0.26604569682508 (Coefficient of the deposit retention)

G_{god} = 2572.7853315048 m^3 god^{-1} (Real soil losses)

G_{god} km^{-2} = 293.82038704671 m^3 km^{-2} god^{-1} (Real soil losses per km^2)