# Web application for Intensity of Erosion and Outflow

## Name of the River Basin: Djuricka rijeka

## Country: Montenegro

## Year: 2018

## GPS coordinates, latitude and longitude with Google Maps: 42.617437,19.937493

## INPUT DATA

### Geometric characteristics of the river basins

**F = 69.57222 km$^2$ (Surface area of the drainage basin)**

**O = 39.89908 km (Length of the watershed)**

**Fv = 35.87209 km$^2$ (Surface area of greater portion of the drainage basin)**

**Fm = 33.70013 km$^2$ (Surface area of smaller portion of the drainage basin)**

**Lv = 14.54081 km (Natural length of main water course)**

**Lb = 16.2095 km (Length of the drainage basin measured by a series of paraller lines)**

### Topograpfic characteristics of the river basins

**Contour line length - Liz [km]: ["10.20105 ","20.72815 ","26.40122 ","28.32701 ","31.82954 ","32.87518 ","32.29958 ","29.51557 ","27.32305 ","19.02231 ","12.12301 ","2.52508 "]**

**The area between the two neighboring contour lines - f [km$^2$]: ["5.34923 ","4.65281 ","5.91714 ","6.33132 ","6.56607 ","6.79885 ","7.37212 ","7.49663 ","6.74740 ","6.14937 ","4.05821 ","1.83075 ","0.30230 "]**

**h0 = 1000 m (Altitude of the initial contour)**

**Δh = 100 m (Equidistance)**

**Hmin = 907 (Lowest altitude in the drainage basin)**

**Hmax = 2149 (Highest altitude in the draigane basin**

## Hydrological characteristics of the river basins

**ΣL = 37.50148 km (The total length of the main watercourse with tributaries of 1st and 2nd class)**

**Lm = 12.11945 km (The shortest distance between the fountain (head and mouth))**

## Water permeability

**fp = 0.0325 (Part of the surface area of the drainage basin which is composed of highly water permeable structures from the rocks (limestone, sand, gravel))**

**fpp = 0.0645 (Part of the surface area of the drainage basin which is composed of the rocks of medium water permeability (schist, marls, sandstone))**

**fo = 0.903 (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 = 0.504824965 (Part of the surface area of the drainage basin under the forest)**

**ft = 0.469212049 (Part of the surface area of the drainage basin which is under the grass, meadows, pastures and orchards)**

**fg = 0.025962986 (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 = 1345.4 mm (Average annual quantity of precipitation)**

## Erosion coefficients

**Y = 1.19888 (Types of soil structures and allied types)**

**11.06 % (Sand, gravel and incoherent soils)**

**0 % (Saline soils)**

**0 % (Decomposed limestone and marls)**

**88.61 % (Serpentines, red sand stones, flishe deposits)**

0 % (Podzols and parapodzols, decomposed schist)

0.33 % (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 = 0.44754 (Planning of the drainage basin, rate of drainage basin regulation)

0 % (Bare lands)

2.6 % (Plough-lands)

0.48 % (Orchards and vineyards)

35.48 % (Mountain pastures)

10.96 % (Meadows)

25.24 % (Degraded forests)

25.24 % (Well-constituted forests)

$\phi$ = 0.40546 (Numerical coefficient of visible and clearly pointed processes of soil erosion)

9.12 % (Depth erosion)

8.11 % (80% of the river basin under rill and gully erosion)

7.1 % (50% of the river basin under rill and gully erosion)

6.08 % (100% of the river basin under surface erosion)

10.96 % (100% of the river basin under surface erosion, without visible furrows, ravines and land slides)

3.04 % (50% of the river basin under surface erosion)

2.03 % (20% of the river basin under surface erosion)

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

2.6 % (The river basin mostly under plough-land)

50.96 % (The river basin under forests and perennial vegetation)

## INPUT DATA

A = 0.53506789511726 (Coefficient of the river basin form)

m = 0.49177419582941 (Coefficient of the watershed development)

B = 4.2920645300595 km (Average river basin width)

a = 0.062437564878625 ((A)symmetry of the river basin)

**G = 0.53902951494145 (Density of the river network of the basin)**

**K = 1.1997912446522 (Coefficient of the river basin tortuousness)**

**$H_{sr}$ = 1476.4028322655 m (Average river basin altitude)**

**D = 569.4028322655 m (Average elevation difference of the river basin)**

**$I_{sr}$ = 39.264342865586 % (Average river basin decline)**

**$H_{leb}$ = 1242 m (The height of the local erosion base of the river basin)**

**$E_r$ = 136.88717401773 (Coefficient of the erosion energy of the river basins relief)**

**$S_1$ = 0.96115 (Coefficient of the regions permeability)**

**$S_2$ = 0.7042276042 (Coefficient of the vegetation cover)**

**W = 1.0628969455629 m (Analytical presentation of the water retention in inflow)**

**$2gDF^{1/2}$ = 881.61149438756 m km $s^{-1}$ (Energetic potential of water flow during torrent rains)**

**$Q_{max}$ = 339.37630041292 $m^3$ $s^{-1}$ (Maximal outflow from the river basin)**

**T = 0.95393920141695 (Temperature coefficient of the region)**

**Z = 0.553755238131 (Coefficient of the river basin erosion)**

**$W_{god}$ = 115593.82236054 $m^3$ $god^{-1}$ (Production of erosion material in the river basin**

**$R_u$ = 0.38844752171698 (Coefficient of the deposit retention)**

**$G_{god}$ = 44902.133821746 $m^3$ $god^{-1}$ (Real soil losses)**

**$G_{god}$ $km^{-2}$ = 645.40320578739 $m^3$ $km^{-2}$ $god^{-1}$ (Real soil losses per $km^2$)**