

10/27/2011

Course: GIS in Water Resources

Instructor: Dr. David Maidment

Student: Elisabeta Poci

PROJECT REPORT

Hydrology of Water Resources in Albania, with a focus on Drini River Basin

Objective:

The overall objective of this project is to explore and provide a general introduction of the hydrology of surface waters in Albania using the ARCGIS tools. The project will be focused more specifically in providing digital information about the hydrology of the Drin river basin.

The sources of data which will be used to carry out this project will be initially from HydroSheds (<http://hydrosheds.cr.usgs.gov/>) and the ESRI global topographic basemap. Further I had planned to get some data from Albania related to rainfall, and monthly and annual flows but I haven't been very successful so far in getting complete data. Therefore, I will be using the Precipitation Data from the Water System Analysis Group, University of New Hampshire (<http://app.databasin.org/app/pages/datasetPage.jsp?id=a5915100b8ac47db8dcee9839e838a2c>).

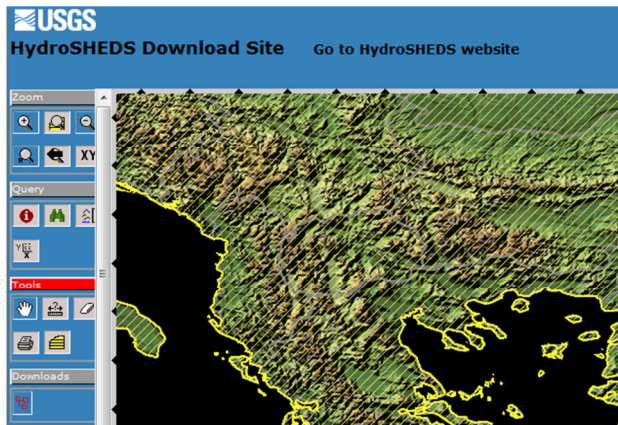


Figure 1. Hydrosheds DEM area

have downloaded from Hydrosheds the following data for the concerned region*:

- 3 sec Void-filled DEM,
- 3sec drainage directions,
- 15 sec shape files of drainage basins,
- 15 sec shape files of rivers network.

as shown in the pictures:

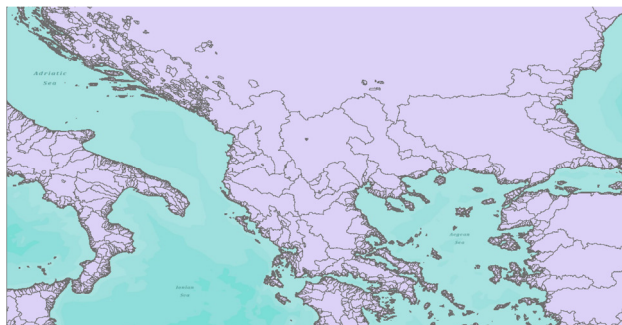


Figure 2. World Watershed Shapefile

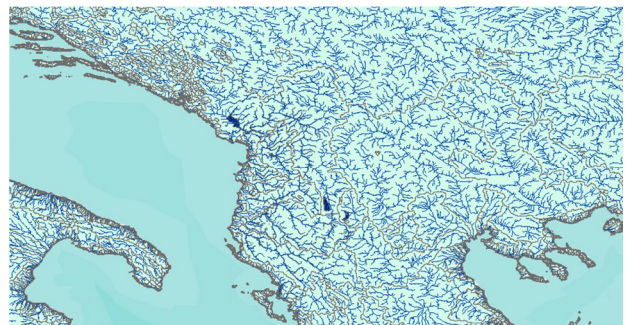


Figure 3. River Network Shapefile

*) the Drini River Basin is a transboundary basin shared between Albania, Kosova Montenegro and FYR Macedonia

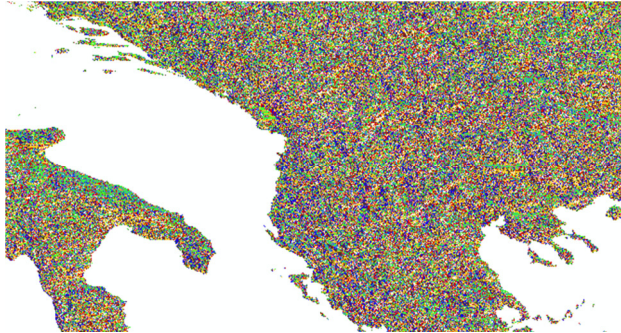


Figure 4. Flow Direction Shapefile



Figure 5. Topographic Basemap from ArcGIS and Water Major Shapefile*

*) The Water Major Shapefile was downloaded from <http://www.geocomm.com/> and were added to the map to complete the hydrography of Albania. When adding it to the map, I had to change it's geographic coordinate system so that it matched with the one I had for the other feature classes.

Further I went on to isolate the Drini Basin by dissolving it. After identifying it in the map, I used the select tool to select it.

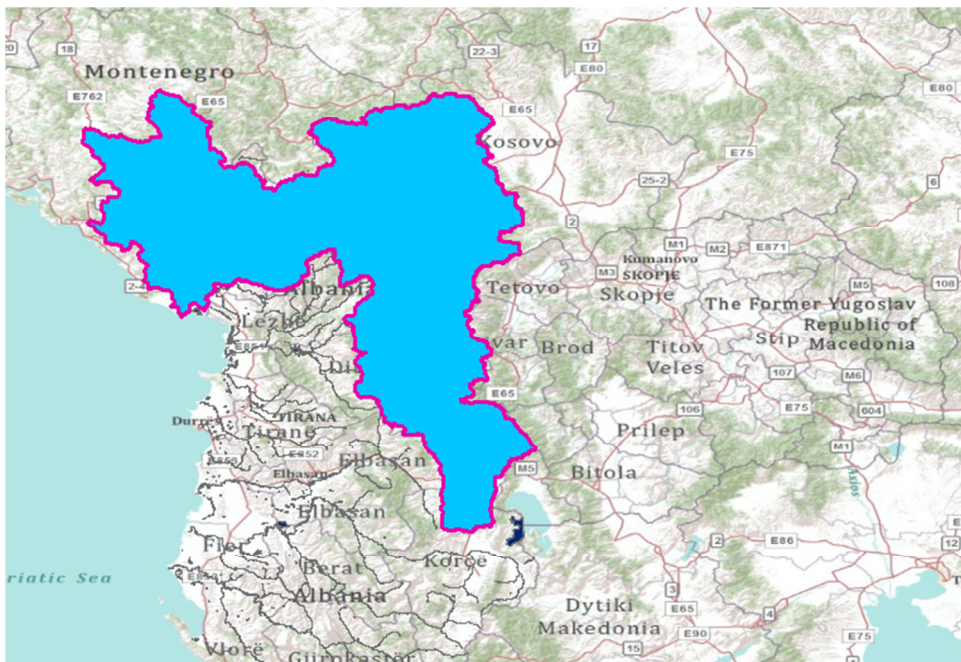


Figure 6. Drini Water Basin

I will be proceeding with the delineation of the Drini Basin and isolation of the subwatersheds for each of the countries sharing the Drini Basin.

Then, using the online precipitation data, I will make some analysis as it relates to water balances within the basin.

*) the Drini River Basin is a transboundary basin shared between Albania, Kosova Montenegro and FYR Macedonia