جامعة الموصل
كلية التربية للعلوم الإنسانية
قسم الجغرافيا

تمثيل شبكات الأودية لحوض نهر الخابور باستخدام إنموذج الإرتفاع الرقمي SRTM

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الجغرافيا / الجغرافيا الطبيعية

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١٤٤٢هـ ٢٠٢٠م

Abstract

The importance of the natural map (and its geomorphic ones) increased day by day as the need for it increased as a result of the scientific and practical development taking place in various fields. Remote sensing and geographic information systems contribute greatly to its development and to make it more accurate and useful in providing information. And based on the importance of the map in general, the researcher took (Representation of Valleys networks of the Khabur River basin using the digital elevation model SRTM) a subject for her study of the valley of the Khabur River Basin. In order to shed light on the nature of natural maps, including maps that represent surface features such as networks of water valleys and the benefits they offer in geographic studies, and how to prepare them, methods, methods and cartographic methods are most appropriate in representing their contents, not to mention the role that modern technologies play in their preparation.

The aim of the study is also to introduce the digital elevation models (DEM) in general and the model (SRTM - the Shuttle Radar Topographic Mission) in particular, and to explain its most important characteristics and advantages, and to clarify the most important terrestrial models that can be derived from the digital model, particularly the water valley networks using software Geographic Information Systems (GIS), to provide an integrated database on the characteristics and nature of the Earth's surface by employing modern geographic technologies in it. In this regard, the researcher relied on the inductive and analytical approaches to draw conclusions and suggest solutions to the problems facing the preparation and production of water valley network maps that were produced by the study, the most important of which are:

1. Short lines and their irregular shapes in the form of a line in the valleys layer.
2. Points of intersection of valley streams.
3. Most of the sewers that appear straight in the direction of their course (Direction) descend towards cell No. (16), that is, towards the West.
4. The difficulty of reclassifying the categories of valley streams with the Classify command. And many other difficulties and problems that the researcher faced during the process of representation and cartographic modeling of water networks.

The study concluded with a set of conclusions and proposals, the most important of which were:

1. Each type of map has its own methods, means, and methods appropriate to represent it and according to the purpose of the map. The use of these cartographic methods and techniques came differently in the study through the large number of models that were available to us from the digital models that helped to represent the surface, including water networks. The areal gradient method is the most suitable method through certain color beams, while the use of colors with thickness for river mattresses is the most practical feature in the representation of water networks.
2. Geographical technologies represented by remote sensing that provide space data, including digital elevation models, and computer software, such as geographic information systems (GIS) that process these data, have a very important role in preparing natural maps (especially geomorphic) of surface phenomena, including networks. Wadis and water basins, as it allows us from the capabilities that are not available in traditional methods, which achieves many known benefits, and it has been shown that the water network maps are easy to prepare by relying on these technologies because the area is large for the study area (2157.2 km2) and has bumpy and mountainous terrain, which necessitates resorting to this software .
3. The study emphasized the importance of the natural map (and the geomorphic ones) by stating its role in reading surface features and clarifying the shapes of surface phenomena, whether in general or even for the study area, as it is of great benefit to the area chosen to represent water valley networks in it. The problems that the region suffers from and contribute to addressing them. This was felt when applied to the study area, and it has been evident that this type of map is not given the necessary attention, as there are no sources that meet the need of those who intend to write in it.

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Representation of Valleys networks of the Khabur River basin using the digital elevation model SRTM

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Master thesis

in

Natural Geography

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2020 A 1442 H