Abstract:

Drought, as a natural and inevitable phenomenon, occurs in many climatic regions, especially in arid regions. Due to the importance of water resources and its quantitative and qualitative impact on ecosystems and biological activities, a drought study for managing water resources is essential. This study was carried out with the aim of studying the effect of drought on flood changes in Pasovku Plain of Saravan using curve number method. To determine the drought index, annual precipitation statistics of Saravan synoptic station during the period of 30 years (1991 to 2018) and the SPI index were used. The digital elevation model (with a spatial resolution of 30 meters) is extracted using Arc GIS 10.3 software, and the physiographic features of the basin are extracted, and from the integration of gradient and soil maps, taking into account geological formations, the map of the hydrological groups of the soil It turned out Due to the effect of vegetation changes during the preceding years and during the drought, Landsat satellite images from the area were prepared and the NDVI Indicator was derived in the ENVI 4.8 software environment for the years 2000 and 2018. The land use map was prepared by Landsat, Google Earth, and field views. Then ArcGIS 10.3 ArcGIS 10.3 maps the curve number from the integration of the map of the hydrological group of the soil, land use and vegetation status, based on the table of estimation method for US soil conservation service runoff for the periods 2000 and 2018. The results showed that the amount of CN in the year 2018, which was a drought, has increased in sub basins and in the whole basin compared to the 2000 year-old CN. The results also showed that the sub-basin F۳ is the most flooded sub-basin, due to the presence of marl formations, as well as the abundance of slopes in it.

Key words: NDVI, SPI Index, SCS Method, Flooding, Rootkh River Basin

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