نشریه
جغرافیا و مطالعات محیطی
پیش‌بینی تغییرات مورفولوژی رودخانه سفید رود با استفاده از Arc GIS
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Considering the flood events, especially for the settlements around the rivers, the lack of correct information about the consecutive changes of the river bed and its movement in the coming years is one of the important scientific issues of watershed management, therefore, due to insufficient information about the behavior of the rivers, the settlements along the rivers in the coastal areas are constantly damaged. The scope of this research is from the border of Rudbar Kiakolaian to Jalge. The purpose of this research is to predict the changes in river morphology (channel width and measurement of Pichamroud) and river curvature coefficient) in the coastal areas of the north of the country through the integrated methods of remote sensing with the model of Markov automatic weighing cells. Sefidrood, as the largest and most important river on the southern shores of the Caspian Sea, plays an important role in the life, activities and human capital of the region. The morphological factors of the river and its surroundings and the prediction of future conditions can be effective and necessary in the planning and preparation of coastal plans. In this research, the Landsat 5, 7 and 8 satellite images of 2002, 1987 and 2018, along with the data of changes in the level of the Caspian Sea and Sefidrood Dubai, field surveys and Ezel 5.3, ArcGIS 10.4.1 and Idrisi Terrtset software as the research tool was used. First, the probability values of land use conversion in 2018 were obtained based on the integrated model of the Markov chain and automatic cells. The results showed that the integrated model has high precision and accuracy to predict the future pattern. Then, according to the accuracy and accuracy of the model output, the prediction map of land use and river morphology for 2030 was prepared. By fitting the two maps of 2018 and the forecast of 2030, possible changes in the river environment were obtained and analyzed in four areas. Finally, using the data of changes in the level of the Caspian Sea and the annual discharge of the Sefidrood River, the trend of changes and prediction of the model was investigated. The most likely changes are due to man-made facilities, Erosion processes, change of Pichamroud and flooding in the distance from Sangar Dam to Lunan village as lateral displacement of the channel and intensification of Pichamroud, Kisem village and the city of Astane Ashrafieh and Asalbasha to Lichah as flooding of human facilities and in the area of Kiaklaah, Jolgo wetland and delta Sefidrood is changing the position of the estuary and moving to the west of the river channel, according to the results of the survey of the cross section of the river channel in the three periods of 1987, 2002 and 2018, there has been a decrease in the width of the channel.
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