عنوان مقاله:

IMPACTS OF CLIMATE CHANGE ON SALINITY

محل انتشار:

دومین کنفرانس بین المللی آب، محیط زیست و توسعه پایدار در مناطق خشک و نیمه خشک (سال: 1388)

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خلاصه مقاله:

The population growth together with urban, agricultural and industrial developments has stressed the need for conservation of the current water quality more than ever. Salinity has been always considered as an important issue in Iran due to the geographical, climatic, and geological conditions. A significant number of studies have been carried out on salinity problems of soil and water resources where the lack of a comprehensive management plan has resulted in uncontrolled salinity throughout the water resources in the country. Furthermore as a result of the growing urban and industrial activities, emission of green house gases has affected climatic characteristics of different regions. Taking into account the impacts of climate change on salinity, long-term projections of such effects can greatly improve estimates on the future water salinity of a region. In this regard, climate variables as well as temperature and precipitation arameters are forecasted using outputs from the General Circulation Model (GCM) with the statistical downscaling method. These results will be used to simulate future runoffs using a hydrological model called identification of unit hydrographs and component flows from rainfall, evaporation and streamflow Data (IHACRES) developed by Jakeman & Hornberger, (1993). Monthly, seasonal and yearly salinity changes during the period of 2010-2020 are simulated by the Multi layer Perception (MLP) Neural Network using predicted river discharge, and historical salinity data. Finally, the water quality for different usages are estimated based on the derived salinity data. .The proposed algorithm has been applied to Ahar-chay watershed in northwest of Iran

کلمات کلیدی:

Salinity, climate changes, statistical downscaling method, Artificial Neural Network, rainfall-runoff model, Ahar-chay