

## **Abstract**

Long-term climate changes and drought severely affect the vegetation density of watershed areas as their result changes the runoff coefficient and the flooding potential of these areas. To study the flooding changes of watershed area/zone affected by drought period, estimating the number of curves 1369,1379,1388 curve for years been.

After long-term statistics of annual rainfall, drought indices and duration were determined. Digital elevation model (with a spatial resolution of 30 m) prepared by using the software Arc GIS 9.3. features physiographic areas extracted from combining maps of slopes and soil taking into account the geological formations, Map of hydrological soil preparation respectively. When considered as well as the land use map was prepared. Subsequently, the software Arc GIS 9.3 the curve number maps in changes homogeneous hydrological basin, soil hydrologic group of integration maps, land use and vegetation, according to the tables of runoff estimation of soil Conservation service of America, the sections were obtained before and during periods of drought. The results showed that the weighted average of 62/35 in the wet 1990 CN watershed stakeholders 65/04 and 63/50 respectively in 2000 and 2009 droughts have been modified. The flood peak discharge with return period of 5 years from the wet 1990 136/73 78/95 cubic meters per second, equivalent to 74.87 percent in 2000, which was affected by drought has increased. This increase for the 200-year peak flow was about 21/64% as its value from 936 in 1990 indicates an increase of 1124 cubic meters per second in 2000.

**Key words:** NDVI, SCS Method, Flooding, Nehbandan



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**Effect of Drought on Flooding Changes in Dehek Watershed  
(South Khorasan Province) Using Curve Number Method**

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