



Land Use and Erosion Changes in Karkheh Watershed and Assessment of Their Effects on Physical and Chemical Quality of Karkheh River; By ETM 2002 and TM 1988 Satellite Image Study

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Abstract: Karkheh watershed with more than 5 million hectares area contains several of biomes and ecosystems including mountains, valleys, wetlands and rivers. In recent decades, the process of destruction of these areas has threatened the natural life cycle of the surrounding environment. Abuse of land, increased soil erosion and drought are perhaps the most important factors in destruction of the surface area which has not only effected the species diversity of plant and animal communities, but also have reduced the volume and quality of water resources in the field and has caused the increase of devastating flood occurrences. In this study, the changes in the level of land use were evaluated in 5 sub- regions of Karkheh watershed in two different periods, 1988 and 2002, using images of LANDSATE satellite. We also quantified the effects of these manipulations on some physicochemical quality of Karkheh water such as cation and anion concentration and its acidity and salinity. The results show that the expansion of the urban area and agricultural irrigation in Karkheh sub-regions, the decrease in precipitation and the Debbi of river are mostly responsible for the reduction acidity, an increment in salinity and the increase of the anions and the cations in Karkheh River.

Keywords: *Land use changes, erosion changes, TM (Thematic Mapper) and ETM (Enhanced Thematic Pamper) satellite images, Water quality.*

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