

erosion rate. ~~Banks-Riverbank~~ erosion may cause major changes ~~on-in~~ river morphology, and eventually flooding and environmental changes. Therefore, it is important to study ~~river-banks position~~ ~~riverbank position~~ changes especially on meanders ~~that-where~~ erosion rate is high. Studying change rates of river-bank position can ~~efficient~~ ~~be useful in~~ river management, ~~flood~~ ~~flood-control~~ and decision-making on how to protect river-banks, and to determine ~~the~~ appropriate land use. Karoon river, ~~the-most~~ ~~aqueous~~ ~~has the largest river flow~~ and is considered ~~the~~ longest river in Iran, and ~~emanates~~ ~~is sourced~~ from ~~the mount~~ Mount Zardkooh Bakhtiari in Chaharmahal ~~Va-va~~ Bakhtiari Province-, Iran. ~~It's From~~ 950 kilometers ~~distance far~~ from ~~its~~ source, ~~it~~ joins Arvand ~~river~~ River and finally ~~arrives-discharges~~ into the Persian Gulf. ~~Lots-Many~~ of the river's meanders ~~appear~~ when it is flowing near Ahwaz ~~city situated in the middle of the~~ ~~Khuzestan province~~. ~~River morphology is ever-changing~~ ~~Considering due to the~~ high rate of erosion in the region, as well as inappropriate land use on river-banks, ~~river morphology always change~~. In this research, four meanders ~~were selected~~ near Ahwaz ~~city in Khuzestan Province~~ ~~were selected~~ to determine ~~the~~ rate of river-banks changes. ~~Beside each of these locations,~~ various applications including ~~shrubland~~ ~~shrub land~~, residential and agricultural areas which may separately affect erosion rate.

This research is intended to apply data, remote sensing techniques, and GIS to estimate change rates and determine effect of land use on outside bend changes. ~~To achieve this target~~ ~~For this~~ ~~purpose~~, satellite images ~~were used~~ in periods as explained in table 1.

Table 1: ~~satellite~~ ~~Satellite~~ images and statistical periods used to estimate river-bank ~~alternations~~ ~~changes~~.

Satellite Image	Date
Landsat MSS	۱۹۷۳/1973
Landsat MSS	۱۹۸۲/1982
Landsat TM	۱۹۹۰/1990
Landsat ETM	۲۰۰۳/2003
Aster	۲۰۰۷/2007
Quickbird	۲۰۱۰/2010

~~Within the~~ ~~In this~~ research, Digital Shoreline Analysis System software ~~was used~~ to estimate and forecast ~~Change-change~~ rates. ~~then~~ ~~Then~~, future positions in 2020 on the under-study ~~reach~~ ~~are~~ ~~were~~ forecasted ~~by-using~~ linear regression ~~equation~~. End Point Rate is a parameter that is resulted by DSAS software. This parameter is calculated by the distance between the oldest and latest river shorelines (along transect) ~~divided on-by~~ their ~~time periods~~ ~~periods~~.

واژه مناسبی نیست: Comment [m8]

مناسب نیست: Comment [m9]

Comment [Reviewer 10]: ظاهر می شوند یا واقع شده اند؟

فارسی ترجمه شده است. جمله بهتری استفاده شود: Comment [m11]

جمله ناقص: Comment [Reviewer12]

فارسی ترجمه شده است: Comment [m13]

کدام دوره ها؟ Comment [Reviewer14]

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جمله فارسی است: Comment [m15]

مناسب نیست: Comment [m16]

Comment [Reviewer17]: ?

Comment [Reviewer18]: ?

تقسیم بر؟ Comment [Reviewer19]