

5th International Conference on **GIS and Remote Sensing**

September 16-17, 2019 | Rome, Italy

Coastal land forms and high and low tide mapping using remote sensing, GIS and GPS technology in coastal regulation zone: Bosher area

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Bosher is a coastal city located along warm waters of Persian Gulf. It is limited to zagros mountains, Persian Gulf, and Hableh river and Tangestan town from north, south, west and east respectively. The study area is in between sea and land areas. Such special situations make the formation of specific land forms in coastal regulation zone (CRZ). However, land forms studies, especially land forms in CRZ (land between low water line and 500 meters from high water line) are well sensed. Therefore, such sensitive areas should be more considered and more efforts should be made to have better knowledge about them. This would enable a better planning and management of industrial, commercial, residential, environmental and tourism problems of these areas. For better analysis and getting best knowledge for mapping land forms of this area, remote sensing, GIS and GPS technologies have been used. In this research, geology, soils, climate and hydrology of the area was first studied, then, the characteristics of the area, CRZ definition, land forms classification and their precise definition and collection of tide statistics were made. First, with the knowledge of remote sensing, preprocessing of data were made and then using digital and visual interpretation techniques different land forms were identified. And then, using extracted tidal and shore lines from satellite data the coastal regulation zone were drawn. And based on ground truth data comparison, the final land form map within CRZ was generated. The CRZ land form map shows that the coastal areas of Boshehr are plastic in type and its formation is mainly due to land erosion factors than sea erosion. Also in this area, the rules of CRZ are not observed and must be seriously considered. The findings of this research are landforms that are determined by using two methods of optical and digital interpretation of Landsat III satellite data, GIS and GPS technology in CRZ area. The CRZ area was defined as a statement and a warning drawn up to manage and regulate activities in the coastal zone, according to which certain activities in the coastal zone were prohibited and the formation of some activities was allowed. Some activities that are prohibited in the coastal zone include the creation of new industries or the development of existing industries and factories, and any activity in the field of buying and selling, especially the purchase and sale of hazardous materials (except for petroleum products in the port areas), the construction of fish farming units, Disposal of wastewater and waste, mining operations and extraction of minerals such as sand and stones, minerals and scarce materials. In conclusion, we found out some construction such as the nuclear facility, airport, construction of fish breeding pool and pouring city's sewage in coastal area that were the most important problems of point of CRZ Statement in this area.



Figure 1. High and Low water line



Figure 2. Landforms in CRZ area

Biography

Ahmadreza Valikhani completed his MSc in Physical Geography and Geomorphology in environment planning from Kharazmi University, Tehran, Iran. His researches is about geomorphology and Coastal landforms in the coastal management zone by using Remote Sensing (RS) and Geographic Information System (GIS) techniques.