

Study of Sand and Gravel Mining Impacts on Floods in Hake River (Shazand City- Iran)

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ABSTRACT

Illegal sand and gravel mining lead to several negative impacts in rivers including changes in river hydraulic and sediment regimes, water quality decrease as well as terrific flood accordance. The studying watershed area is located in Shazand city of Iran. Hake river originates from area southern mountains and after flowing in Shazand plain, joins Mohajeran and Nahremian rivers in the northwest of watershed and forms Shara river. the positive and negative effects of sand and gravel mining made during the past in Hake river has been studied. The historical flooding has them been studied in this area. Finally appropriate sand and gravel mining in the river has been determined with the aim of mitigating flood damages due to illegal sand and gravel mining. In the kmanhaie River to natural or artificial lakes, dams or like collision and on the main place of the intersection of the rivers were rich to the sand and gravel resources generally can be searched. Afkanh mkhroth mcanhai of other appropriate data entry which is the location of the mountain to the plain of the river is also the convex side of the internal spiral due to low speed water in they do easily sand sequestration. (Photo Number 1)

Sequestration and sand on the convex internal arch, river bed of hake



With a detailed study of, and also apply the proper management and proper harvesting sand from the rivers can be a resuscitation of the river works, the positive will be that of the most important, they can be pointed to the following. Material layer, so that after the floods entered the river are compactness, the potential of the river to be picked " one material backlog In the bed of the river, which makes narrowing, and several branches of the litter has been picked up by these materials can be litter will consider that and, in fact, cause the modified River route will be, and the modification path, the effect of positive In raising the speed. enhancing the capacity to pass the flood, and in result of the displacement of a cross section and ultimately the stability of the litter we found. (Photo Number 2)

Several branches of the narrowing of the river and the effect on tresb sand



(Photo Number 3) about the positive effects of harvesting sand on the flood, according to the contents of the given observations and field only in picked cases that are not islands, sandy, causing tight coupling of river bed, is also, in some points that the slope of the river bed is very High it can be with the modulation slope positive effects of harvesting sand on the flood,".

The phenomenon mander spiral phenomenon causes of dyspnea, the bed in place of the original branches

