



Estimation of Transported Sediment Load in 2001 Great Flood in Iran

(1) A. Mosaedi, (2) **S. Alaghmand** and (3) A. Mohammadi

(1) Department of water Eng., Gorgan University of Agricultural Sciences and Natural Resources,

Iran, (2) M.Sc. Student of Civil-River Eng. USM, Malaysia (alaghmand_sina@yahoo.com / Tel +60

17 4345879), (3) Gonbad High Education Center, Gorgan University of Agricultural Sciences and Natural Resources, Iran.

Estimation of transported sediment in flood events is laborious while it is significant, because of the occurrence of the most transported sediment load rate in flood events. On the other hand, dynamic sediment transportation equations are become complicated in this condition. Practically, in many rivers the ratio of sampled sediment load in flood events to the total ones is low, Gorganrood is one of them. Gorganrood is one of the most important rivers in Caspian Sea basin in North of Iran with length about 325 km. high density rainfall in August 2001 in East area of Gloestan province which is located in North of Iran, caused to a damaging flood in Gorganrood river basin. This flood event was one of the most damaging ones in the Iran and also in the world in year 2001. This flood has caused to significant changes in Gorganrood river morphology. The peak discharge in this flood was estimated $3000 \text{ m}^3/\text{s}$ in the entrance of the Golestan reservoir dam. This flood after entering to the empty dam reservoir subsided. The peak discharge in the weir of the dam was $200 \text{ m}^3/\text{s}$ so it can be concluded that, almost all the suspended sediment load in the flow was settled in the dam reservoir. According to the results of this research, the entrance sediment load has been estimated around 20 million m^3 which is three or fourfold than annual mean of transported sediment in this cross section of Gorganrood River. At the end, appropriate and more accurate methods for estimation of transported sediment in river, especially in

flood events, have been suggested in this paper.