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Analysis Of Natural Field Research In The Assessment Of Processes In The Foothills

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ABSTRACT

This article analyzes the factors influencing the occurrence of the deformation process in the channels based on the information obtained in the natural field conditions. The processes taking place in the Sokhsay river basin in the Sokh river basin were analyzed. During the research: The morphometry, flow rate and turbidity of the Sokhsay river were studied.

KEYWORDS

Bank, deformation, river, sediment, turbidity, waterworks, stream, particle.

INTRODUCTION

One of the important issues is the assessment of processes in the river basin and the improvement of computational methods and technologies for the prediction of river deformation. In this regard, in the assessment

of the processes of the river, special attention is paid to scientific research on the prevention of turbidity of hydraulic structures in the riverbed and canal [1, 2, 3].

One of the peculiarities of pre-mountain rivers is that the slope of the riverbed is high.

The effect of sediments in the foothills on the change of hydraulic elements of the structure has been studied for many years [4, 5, 6, 7]. One of the main influencing factors in the assessment of river basin processes is river sediments. However, the problems of analyzing the mechanical composition of sediments and determining the characteristics of sediments have not been fully resolved. Research will be needed to study the mechanical composition of sediments in pre-mountain rivers and to assess their impact on river formation. It is known that river

sediments consist of suspended and deep sediments, and natural field studies have been conducted to study the amount and composition of sediments in the Sokhsoy River, which receives water from the Sarikurgan hydroelectric power station.

MATERIALS AND METHODS

Several pickets were selected to determine the amount of sediment in the Sokhsoy riverbed, and the dynamics of the riverbed was studied at these pickets (Figure 1).

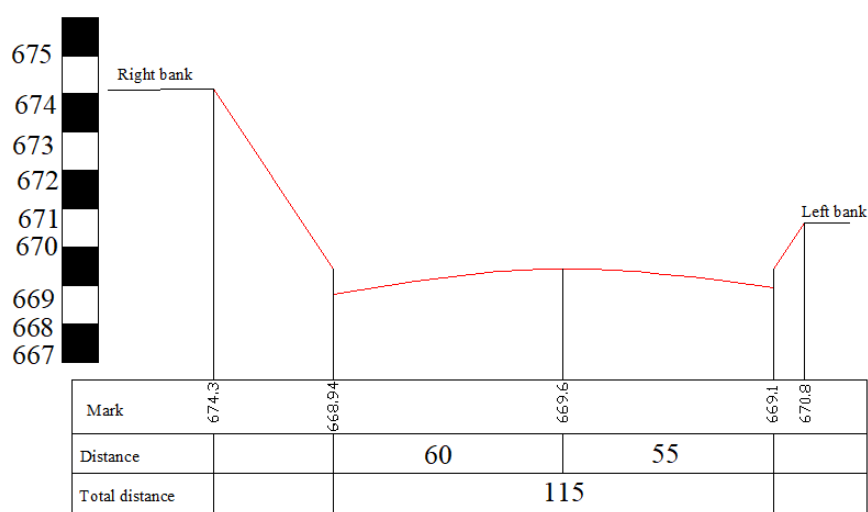


Figure 1. Process in Sokhsoy river PK-12

The studies studied the amount of suspended and bottom sediments, their fractional composition and their variation along the length of the stream. In the study, information

was obtained on the distribution of sediments by pickets (Figure 2).

Sokhsay valley was divided into several storks. The parameters of each storso were analyzed during the year.

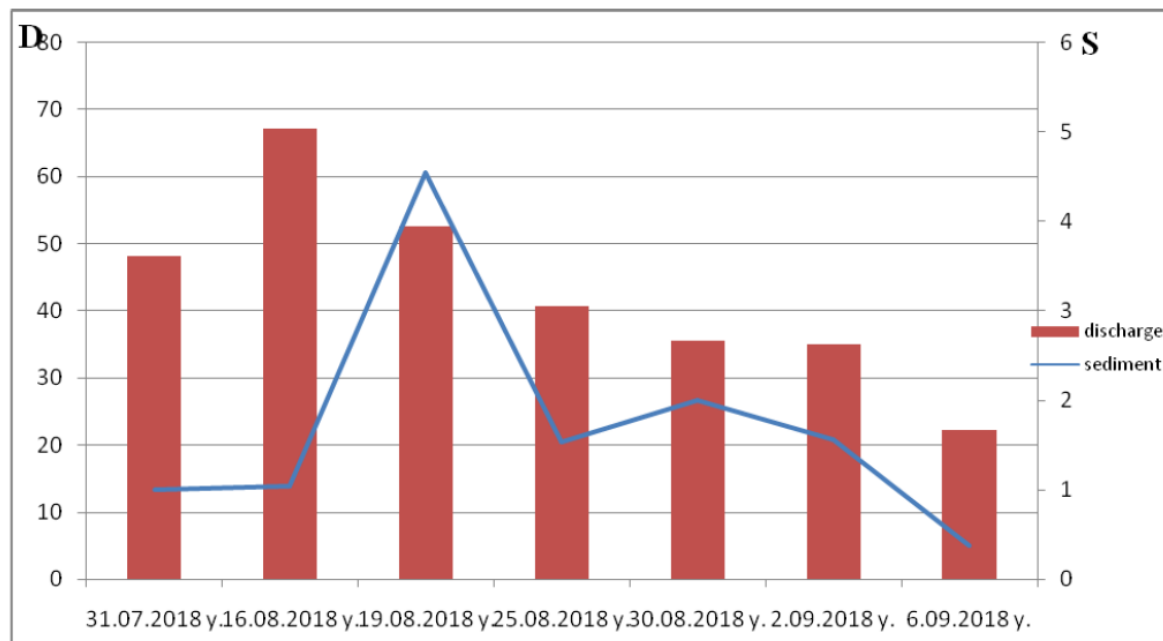


Figure 2 . Schedule of dependence of sediment flow with water discharge

According to the results of the research, the fractional composition of suspended sediments for pickets in the Sokhsay river is

given in Table 1. Based on the analysis, it can be noted that the main part consists of particles with a diameter of 0.1-0.05 mm and 0.05-0.01 mm, their total share is 68.9% and 27.6% (Table 1).

Table 1. Fractional composition of sedimentary particles in the Sokhkoy valley

№	Sampling point	Sediment diameter (mm), in%				
		1,0-0,5 mm	0,5-0,25mm	0,25-0,1mm	0,1-0,05mm	0,05-0,01mm
ПК-12	The beginning of the Sokhsoy	-	4,6	17,64	62,95	4,81
ПК-62	The middle part of Sokhsoy		2,52	16	71,39	10,09
ПК-92	Сүхсой ўзан охирги қисми			7,4	32,39	59,61

RESULT AND DISCUSSION

According to the analysis of the fractional composition of river sediments, in PK-12 0.5-0.25mm diameter particles were 4.6%, 0.25-0.1 mm diameter particles were 17.64%, 0.1-0.05mm diameter particles were 62.95%, 0.05-0.01mm diameter particles were 4.81%. , In PK-62, 0.5-0.25mm diameter particles are 2.52%, 0.25-0.1 mm diameter particles are 16%, 0.1-0.05 mm diameter particles are 71.39%, 0.05-0.0 mm diameter particles are 10.09%, the

composition of sediment at the end picket of the Sokhsoy river the fraction varies as follows: in PK-92, particles with a diameter of 0.25–0.1 mm account for 7.4%, particles with a diameter of 0.1–0.05 mm account for 32.39%, and particles with a diameter of 0.05–0.01 mm account for 59.61%. Although the composition of sediments on the pickets is variable, the main part of them consists of sediments of 0.1 and 0.05 mm (Fig. 3).

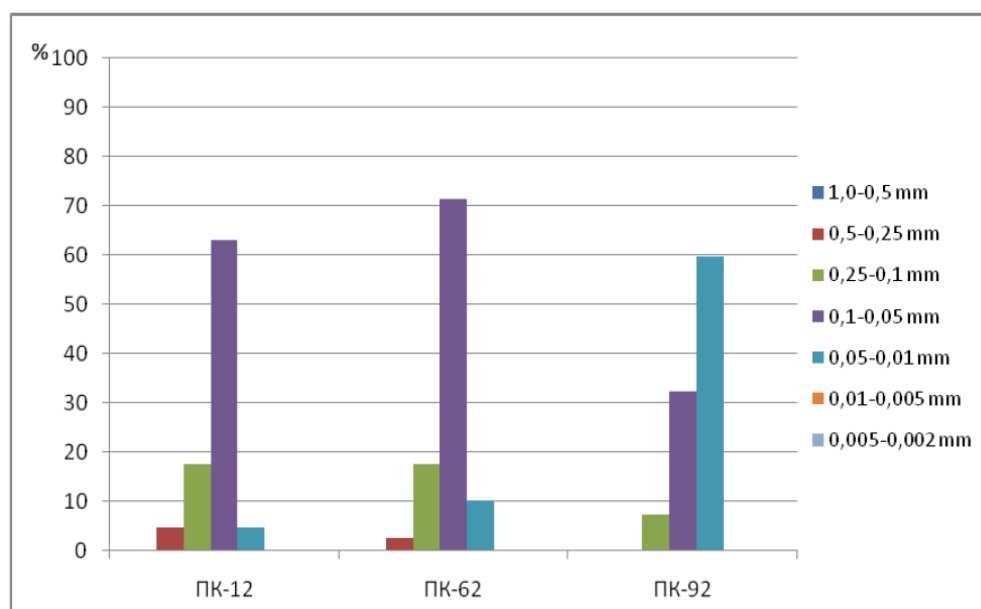


Figure 3. The fractional structure of the sediments in the Sokhsoy bed by the PCs

CONCLUSION

It is clear from the above analysis that the complexity of the processes taking place in the river is explained by taking into account many factors. Sediment analysis suggests that sand particles are flowing into the lower part of the Sokhsoy River, which has a negative impact on the operation of the hydropower plant and there is a problem of additional work at the hydropower plant.

It is necessary to change the hydraulic parameters of the Sokhsoy river, so that the sediments coming with a certain amount of flow can be trapped in the river it self.

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