

**Hydrological Studies of Dokriani Glacier (Part III)**

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**Abstract**

Discharge, suspended sediment, air temperature and water temperature data have been collected at the gauging site established by NIH on the Dokriani glacier melt stream in the Garhwal Himalayan region in the years of 1992, 1994 and 1995. The gauging site was established at about 800 m downstream of the snout of the glacier. To monitor the diurnal variation of glacier melt runoff, an automatic water level recorder was installed at the same gauging site in 1995. For this purpose a stilling well was constructed at the site and it was connected with the glacier melt stream through a constructed drain. Automatic water level recorder recorded changes in the water level in the stilling well which were representative of the changes in the melt stream. Daily recording charts were used to obtain continuous recording of water level in the channel. Manual observations were also made both for water level and discharge at the gauging site during day time. It helped in developing a stage-discharge relationship and this relationship was used to convert water level into discharge. This discharge data was expected to give reliable information about the water yield from the glacier. Data on precipitation, air temperature, suspended sediment and melt water temperature were also collected. To collect meteorological data, a small meteorological observatory was set up near the gauging site. Additional equipment to record humidity, wind velocity and direction etc. are proposed to install in 1996. The data were collected from June to mid September, 1995. A glacier melt runoff study is to be carried out for this glacier after collecting data for few years.

Maximum melt rates were noted to be in the month of July and August during 1995. Rainfall was observed almost daily. The rain thus not only contributed to runoff but also helped in the generation and transport of suspended sediment. Rain free periods were therefore, selected to determine the melt rate from the glacier. Maximum temperature for atmosphere as well as stream water was attained in the month of June and after that both temperatures have shown decreasing trend. Variability in atmospheric temperature was very high as compared to the water temperature. No specific correlation was found between streamflow and suspended sediment.