Editorial
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Hydrology of the Paleoflood Period in Quantitative Form

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Editorial

Paleoflood hydrology Using geological data, Kochel and Baker (1982) reconstruct the extent and frequency of past floods. Paleoflood hydrology has gained attention as a modern branch of geomory in the last 40 years. phology and hydrology are disciplines that use concepts of geology, biology, hydrology, and fluid dynamics to infer quantitative and qualitative aspects of unobserved or unmeasured floods based on physical evidence left behind. Flotsam deposits and different forms of geologic evidence are examples of flood indicators.

Physical effects on vegetation, as well. Individual flood timing, magnitude, and frequency at specific locations or for specific rivers may be inferred, as well as assumptions about the magnitude and frequency of channel forming floods. The obvious advantage of paleoflood studies is that they provide information on floods from periods of time or places where direct measurements and observations are not available, thereby expanding the systematic record.

In terms of significant flooding, Paleoflood studies have been used to help assessments of flood risks and to explain the relations between environment, land use, flood frequency and morphology of channels. Paleoflood hydrology's main aim is to learn about extreme floods by inferring their hydrological parameters from physical evidence, as opposed to traditional flood hydrology, which is focused on direct measurements of hydrologic phenomena.

In the late 1970s and early 1980s, Paleoflood research on bedrock rivers gained momentum, especially under the auspices of Prof. Victor R. Baker and his students in the southwestern United States. The system has achieved worldwide popularity over the last 40 years

The application of hydrodynamic principles to assess flow magnitude in quantitative paleoflood hydrology relies on the detection of evidence of flooding. Geological and archival are the first part, requiring classic instruments of historical study, geomorphology, stratigraphy, and sedimentology. In order to locate and date physical evidence of flooding, the second part includes geochronology. To assign a flow magnitude to paleoflood evidence, the third component involves hydraulic and hydrodynamic analyses, usually taken from engineering applications. In order to more reliably predict flood volumes at low annual exceedance probabilities, the fourth aspect integrates paleoflood discharge data with instrumental streamflow records into flood frequency analyses.

In general, such paleoflood studies are more effective and have less uncertainties in resistant boundary fluvial systems, such as bedrock or semi-alluvial channels.Usually, these more stable forms of river systems retain stratigraphic records better from floods; some records are older than several thousand years. In addition, for bedrock or stable-boundary channels, the assumption that the present channel geometry is ideal for estimating past hydraulic conditions is more accurate than it is for alluvial flows. In the late 1970s and early 1980s, Paleoflood studies gained momentum in bedrock rivers, especially under the auspices of Prof. Victor R. Baker and his students in the southwestern United States. The system has been used all over the world for the past 40 years.

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