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Assessment and modeling of flood occurrences of river Lokoja, Nigeria

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Flood estimation is one of the major aspects of hydrologic designs and is first in planning for flood regulation and protection. The study was aimed at assessing and modelling flood occurrences of River Lokoja, in Kogi State Nigeria. Metrological and hydrological data collected over a period of twenty-four years along River Lokoja, in Kogi State Nigeria include weather parameters, rainfall, flood, stage and river discharges. Probabilities of exceedance were determined in five positions using Weibull, California, Cunnance, Grigortons and Hazens distributions. Highest discharge occurred in 1999 with a river stage of 10.36 m, which is astronomical for the locality. The curve of annual maximum discharge against return period is logarithm in the Weibull distribution and the coefficient of correlation is 0.94, which is significantly high. The Log Pearson type III distribution fitted well into the annual maximum discharge. The results are very useful in flood predictions.