Regional flood frequency analysis in the KwaZulu-Natal province, South Africa, using the index-flood method

A regional frequency analysis of annual maximum series (AMS) of flood flows from relatively unregulated rivers in the KwaZulu-Natal province of South Africa has been conducted, including identification of homogeneous regions and suitable regional frequency distributions for the regions. The study area was divided into two homogeneous regions based on an index of monthly rainfall concentration. Region 1 covers the coastal and midlands area and Region 2 the west northwestern parts of the study area. The General Normal, Pearson Type 3 and General Pareto distributions were found to be suitable for AMS of flood flows in Region 2. The occurrence of a few flood events of extreme magnitude in Region 1 resulted in no suitable regional frequency distribution for this region. (C) 2002 Elsevier Science B.V. All rights reserved.

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