

Investigations Report 2004-5103

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## Estimating Flood-Peak Discharge Magnitudes and Frequencies for Rural Streams in Illinois: Usgs Scientific **Investigations Report 2004-**

By David T Soong

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.Flood-peak discharge magnitudes and frequencies at streamflow-gaging sites were developed with the annual maximum series (AMS) and the partial duration series (PDS) in this study. Regional equations for both flood series were developed for estimating flood-peak discharge magnitudes at specified recurrence intervals of rural Illinois streams. The regional equations are techniques for estimating flood quantiles at ungaged sites or for improving estimated flood quantiles at gaged sites with short records or unrepresentative data. Besides updating at-site floodfrequency estimates using flood data up to water year 1999, this study updated the generalized skew coefficients for Illinois to be used with the Log-Pearson III probability distribution for analyzing the AMS, developed a program for analyzing the partial duration series with the Generalized Pareto probability distribution, and applied the BASINSOFT program with digital datasets in soil, topography, land cover, and precipitation to develop a set of basin characteristics. The multiple regression analysis was used to develop the regional equations with subsets of the basin characteristics and the updated at-site flood frequencies. Seven hydrologic regions were delineated using physiographic and hydrologic characteristics.

## Reviews

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