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**FREQUENCY DISTRIBUTIONS OF THE ANNUAL
MAXIMUM DISCHARGES FOR SELECTED RIVERS
IN PENINSULAR MALAYSIA**

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ABSTRACT

There are many methods for flood estimation. The common used method in Malaysia is flood frequency analysis. For catchment with adequate length of streamflow data, flood frequency analysis by probability distribution is often used.

For future development of the localised area near the selected river, the frequency distribution of the flow of water discharged from the river needs to be considered. The distribution of flow discharged by the river will provide a valuable information when designing structures appropriate to the required safety standard. Hence, a plethora of procedures have been recommended. However, the hesitation of practitioners to apply new methods has widened the gap between theory and practice.

To serve the above purpose, informations about water discharge collected during the year 1960 to 1990 from various rivers throughout the country are important for future development. The data collected are analysed using *Hydrological Frequency Analysis Package* (HYFA) in order to obtain the frequency distribution of water discharge. In addition, a probabilistic analysis is carried out to compare various flood frequency distributions and parameter estimation methods.

1.0 INTRODUCTION

1.1 INTRODUCTION

The random variability of such hydrologic variables such as streamflow and precipitation has been recognized for centuries. The general field of hydrology was one of the first areas of science and engineering to use statistical concepts in an effort to analyse natural phenomena. Many papers have been published that demonstrate the use of statistical tools in analysing and solving hydrologic problems.

The emphasis in the 1960's and 1970's on the quality of the environment and the preservation of the balances of nature has broadened the science of hydrology until it truly embraces the full life history of water on the earth. This broadening of science of hydrology has presented many new challenges to hydrologists and makes it even more imperative that a variety of tools be available to aid in the analysis of hydrologic problem. All hydrologic problems are visualized and analyzed through the use of a model. The model may be a mental conceptualization; an empirical relationship; a physical device; or a collection of mathematical, statistical, and/or empirical statement.

The frequency analysis is one of the most debated areas in hydrology and has received considerable attention in this century. Estimation of extreme events in hydrological processes such as flood flow, storm and drought at gauged and ungauged locations is an essential component in planning, design and operation of a variety of water resources projects. Frequency analysis is now accepted as an established method for determining critical design discharges for hydraulics structures, being convenient both economically and politically.