

**PENGARUH LUAS PENEBAANGAN HUTAN TANAMAN JATI
TERHADAP KARAKTERISTIK HIDROGRAF BANJIR
(Studi Kasus pada Kawasan Hutan Jati PT. Perum Perhutani Wilayah I
Jawa Tengah, KPH Cepu, Sub DAS Modang Kabupaten Blora)**

**Paidi
16711/PS/MPBA/05**

Telah dipertahankan di depan Dewan Penguji
Pada tanggal 19 April 2007

**Pembimbing Utama
Prof. Dr. Ir. Sri Harto Br, Dip.H**

**Pembimbing Pendamping
Dr. Ir. Rachmad Jayadi, M.Eng**

**Anggota Dewan Penguji Lain
Ir. Joko Sujono, M.Eng., Ph.D**

ABSTRACT

One of the forest functions is to protect water balance system on a drainage basin. Activity of teak plants forest cutting on Modang Subbasin by Perhutani Limited Corporation in this time has not yet considered the environment condition, especially from hydrologic point of view. This study aims to know the forest cutting effect on flood hydrograph characteristics. By this study, the maximum forest cutting area which no flood occurrences at certain level is expected to be determined.

Land covered analysis is conducted by ArcView GIS 3.3 and curve number is determined base on SCS Tables of Curve Number. Catchment rainfall is calculated by Thiessen Polygon Method and design rainfall is obtained from frequency analysis of partial series data. Unit Hydrograph is obtained from 10 flood occurrences by Collins Method. The forest cutting pattern scenarios are referred to Perhutani Limited Corporation rules. Flood hydrograph calculation is conducted by using HEC-HMS software through calibration and verification processes to achieve basin parameter values that will be used for simulating flood hydrograph.

The initial value of curve number on Modang Subbasin is 78,558. Forest cutting in Modang Subbasin up to 79.49% will cause 83.49 on CN value. Increasing of CN values generates the rising of peak flow to 71.60% and the flood volume to 71.04%. The rising peak flow trendlines and runoff volume trendlines depend on forest cutting area. To avoid the flood occurrences, the maximum forest cutting area is 120.28 hectares or 32.69%.

Keywords : *basin, forest cutting, peak flow, flood volume.*