



INTISARI

Daerah penelitian merupakan daerah aliran sungai (DAS) yang secara administrasi dibatasi Sungai Mahakam sebelah utara, sebelah timur Sungai Sangsanga, dan Kabupaten Kutai sebelah selatan serta sebelah barat Jalan Raya Palaran. Dan DAS Palaran terletak pada $0^{\circ} 42' 32'' - 0^{\circ} 33' 20''$ LS dan $117^{\circ} 05' 39'' - 117^{\circ} 11' 23''$ BT. Kecamatan Palaran merupakan salah satu dari Kecamatan yang ada di Kotamadya Samarinda. Pada daerah ini mengalir Sungai Palaran yang pada musim penghujan selalu meluap dan menggenangi baik daerah permukiman maupun daerah pertanian, dan daerah ini merupakan daerah dataran dengan kemiringan lereng relatif kecil.

Penelitian ini bertujuan untuk memperkirakan besarnya limpasan, volume dan lama luapan periode ulang 2, 5 dan 10 tahun, menentukan lokasi luapan dan sebab-sebab terjadinya luapan. Langkah penelitian meliputi studi pustaka, pengumpulan data skunder (meliputi peta penggunaan lahan, peta topografi, peta kemampuan tanah, peta geologi, peta administrasi, data curah hujan harian maksimum, data tinggi muka air (TMA) Sungai Mahakam) serta pelaksanaan lapangan meliputi pengukuran secara sistematis terhadap fenomena yang berkaitan dengan penelitian, kemudian dilakukan perhitungan dengan menggunakan metode analisis frekuensi curah hujan, distribusi Ekstrim Gumbel Type I, metode inlet, unit hidrograf sintetik, slope area methode, metode hidrograf routing dan analisis perbandingan antara limpasan maksimum dengan kapasitas drainase serta akibat pengaruh pasang maksimum Sungai Mahakam.

Hasil penelitian menunjukan bahwa luapan di daerah penelitian disebabkan kondisi topografi yang relatif datar, kapasitas drainase yang relatif kecil, banyak tanaman pengganggu sehingga tidak mampu mengalirkan limpasan periode ulang tertentu, juga luapan disebabkan akibat pengaruh pasang maksimum Sungai Mahakam.

Seluruh sub-DAS sudah tidak mampu mengalirkan limpasan periode ulang < 1 tahun. Volume genangan terbesar terjadi pada routing III terdapat pada sub-DAS Palaran I yang merupakan muara Sungai Palaran, dan paling luas dan besar volume luapannya karena terpengaruh pasang Sungai Mahakam. Genangan Terlama terjadib di muara DAS Palaran yang memiliki kapasitas drainase paling kecil.



ABSTRACT

The area of this research was the river basin which borders on the river of Mahakam in the north, the river of Sangasanga in the east, the Kutai regency in the south and the Palaran road in the west. It is located in $0^{\circ}42'32''$ – $0^{\circ}33'20''$ of the South Latitude and $117^{\circ}05'39''$ – $117^{\circ}11'23''$ of the East Longitude. Palaran is one of subdistricts in Samarinda Town. The Palaran river flows through this area, it always overflows in the rainy season and floods residential and forming areas, this area is a plain with relatively small slope elevation.

The research was aimed to estimate the value of water stream, the volume and the length of periodic storms of 2, 5 and 10 years, to determine the location of storm and the causes why it happens. Steps of the research were literature study, collecting secondary data (i.e the map of land use, the map of topography, the map land capacity, the map of geology, the map of administration, the data of maximum daily rainfall, the stoge data of the Mahakam River) and doing a research in the field i.e : measuring phenomena related to the research systematically, estimating them by using the analysis method of rainfall frequency, Extreem distribution of Gumbel Type I, inlet method, synthetic hydrograph unit, slope area method, hydrograph routing method, and competitive analysis between maximum stream and drainage capacity and tide water effect of the Mahakam River.

The result of this research showed that the storm in the river basin is caused by condition of topography which is relatively flat, drainage capacity which is relatively low. Many gulmas that cannot continue the periodic stream and the storm which is caused by maximum tide water of the Mahakam River.

All sub-basin of river cannot catch anymore periodic stream of less than 1 year. The highest flood happened at routing III in sub-basin of Palaran I which is a estuary of Palaran River, and at routing III the storm was widest and had the highest volume because of tha influence of tide water of the Mahakam River. The longest flood happened at estuary basin of the Palaran river that had the lowest value of drainage capacity.