

ABSTRACT

Peatlands play an important role in regulating water management as a carbon sink and also function as water storage, water supplier and water controller. Changes in the biophysical characteristics of peat are caused by land clearing which causes changes in the water system (hydrology), especially in the water level. The decline in groundwater levels in peatlands triggers oxidation and subsidence, especially during the dry season, and in order to properly manage the impact of decreasing water levels, it is necessary to study the size of the water balance components. Water balance analysis in space and time in peatlands is a very important analysis to determine water conditions spatially and over time. This research was carried out in the Mangsang area at HTI PT. Rimba Hutani Mas, Merang District, Bayung Lencir District, Musi Banyuasin Regency, South Sumatra. The research was carried out using a survey method using water balance calculations using the Thornthwaite & Mather Water Balance (TMWB) method. Data generated from observations are dimensions of drainage channels, rainfall, temperature, ground water level (TMAT) and canal water level (TMAK). The calculated data are average monthly rainfall, average monthly air temperature, potential evapotranspiration, accumulated potential water loss (APWL), available water capacity (AWC), monthly difference in soil moisture storage (ΔSt), actual evapotranspiration (AE), deficit, surplus and direct runoff. The research results show that in the Mangsang area of PT. Rimba Hutani Mas experienced a surplus in March, April, November and December and a deficit in January, February, May, June, July, August, September and October. Although the results of calculations using the TMWB method show that water deficit months occur in January, February, May, June, July, August, September and October, in this research area this has been anticipated with good water management and also with the construction of canal blocks.

Keywords: Peatlands, Water Balance, Surplus dan Deficit

ABSTRAK

Lahan gambut berperan penting dalam mengatur tata air sebagai penyerap karbon dan juga berfungsi sebagai penyimpan air, penyuplai air dan pengendali air. Perubahan karakteristik biofisik gambut disebabkan oleh pembukaan lahan yang menyebabkan perubahan tata air (hidrologi), terutama pada tinggi muka air. Penurunan muka air tanah di lahan gambut memicu oksidasi dan subsiden, terutama pada musim kemarau, dan dalam mengelola dampak penurunan muka air dengan baik, perlu dipelajari ukuran komponen neraca air (*water balance*). Analisis neraca air (*water balance*) pada ruang dan waktu di lahan gambut merupakan analisis yang sangat penting untuk mengetahui kondisi air secara spasial dan runtun waktu. Penelitian ini dilaksanakan di areal Mangsang pada HTI PT. Rimba Hutani Mas Distrik Merang, Kecamatan Bayung Lencir, Kabupaten Musi Banyuasin, Sumatera Selatan. Penelitian dilakukan dengan metode survei menggunakan perhitungan neraca air dengan metode *Thornthwaite & Mather Water Balance* (TMWB). Data yang dihasilkan dari pengamatan yaitu dimensi saluran drainase, curah hujan, suhu, tinggi muka air tanah (TMAT) dan tinggi muka air kanal (TMAK). Data hasil perhitungan yaitu curah hujan rata-rata bulanan, suhu udara rata-rata bulanan, evapotranspirasi potensial, akumulasi kehilangan air potensial (APWL), kapasitas air tersedia (AWC), perbedaan penyimpanan kelembaban tanah bulanan (ΔSt), evapotranspirasi aktual (AE), defisit, surplus dan *direct runoff*. Hasil penelitian

menunjukkan bahwa di areal Mangsang PT. Rimba Hutani Mas terjadi surplus pada bulan Maret, April, November dan Desember dan terjadi defisit pada bulan Januari, Februari, Mei, Juni, Juli, Agustus, September dan Oktober. Walaupun hasil perhitungan menggunakan metode TMWB terlihat bahwa terjadi bulan defisit air pada bulan Januari, Februari, Mei, Juni, Juli, Agustus, September dan Oktober akan tetapi di areal penelitian ini telah diantisipasi dengan pengelolaan air yang baik dan juga dengan pembangunan sekat kanal.

Kata Kunci: Lahan Gambut, Neraca Air, Surplus dan Defisit