ABSTRAK

Plawangan Timur merupakan wilayah dengan karakteristik tingginya aktivitas industri, transportasi, dan domestik sehingga dapat menghasilkan limbah logam berat Pb. Penelitian ini bertujuan untuk mengetahui kandungan logam berat Pb pada media air, sedimen dan ikan di perairan Plawangan Timur, Segara Anakan serta untuk mengetahui tingkat pencemaran logam berat Pb berdasarkan nilai *Pollution Index* (PI), *Contamination Factor* (CF), *Index Geoaccumulation* (Igeo), dan *Bioaccumulation Factor* (BAF). Penelitian menggunakan metode survei dengan teknik pengambilan sampel *Purposive Random Sampling* di 5 stasiun, yaitu muara Sungai Kembang Kuning, muara Sungai Sapuregel, pertemuan dua sungai, muara Sungai Donan, pertemuan tiga sungai. Hasil analisis data menunjukkan bahwa kandungan logam berat Pb pada media air berkisar 0,0016 – 0,0033 mg/L, media sedimen berkisar 1,2355 – 3,0257 mg/kg dan pada ikan belanak berkisar 0,0086 - 0,0230 mg/kg. Kandungan Pb pada media air dan sedimen tersebut masih di bawah nilai ambang batas aman, demikian pula kandungan Pb ikan belanak masih dalam batas yang aman untuk dikonsumsi. Analisis korelasi koefisien Pearson (R) menunjukkan korelasi linier negatif dengan keeratan sangat lemah dan lemah untuk Pb pada air dengan sedimen, serta Pb pada air dengan ikan belanak. Perairan Plawangan Timur tergolong tidak tercemar berdasarkan nilai PI, dan tercemar ringan berdasarkan nilai CF dan Igeo. Nilai BAF menunjukkan ikan belanak mengakumulasi Pb pada tubuhnya. Mengacu pada hasil penelitian, upaya pengelolaan perairan Plawangan Timur Segara Anakan Cilacap perlu dilakukan secara berkala demi kelestarian lingkungan.

Kata kunci: Plawangan Timur, Logam Berat Pb, Air, Sedimen, Ikan Belanak (*Planiliza subviridis*)

ABSTRACT

East Plawangan is a area with characteristics of high industrial, transportation, and domestic activities that can produce heavy metal Pb waste. The research was aimed to analyse the difference and correlation of Pb heavy metal in the water, sediment and mullet fish among stations and to know pollution levels based on Pollution Index (PI), Contamination Factor (CF), Index Geoaccumulation (Igeo), and Bioaccumulation Factor (BAF). Method of this research was a survey method by purposive random sampling technique in five stations and four replications, namely the estuary of the Kembang Kuning River, the estuary of the Sapuregel River, the confluence of two rivers, the estuary of the Donan River, and the confluence of three rivers .The result that of Pb heavy metals in the water was 0,0016 – 0,0033 mg/L, in the sediment range between 1,2355 – 3,0257 mg/kg and the mullet fish was 0,0086 - 0,0230 mg/kg. The content of Pb in water and sediment media is still below the safe standard value, as well as the content of Pb in mullet fish is still within the safe limit for consumption.. The analysis of correlation coefficient Pearson (R) showed a negative linier correlation with very weak and weak closeness for Pb in water and sediment, as well as Pb in water and mullet fish. East Plawangan are classified as unpolluted based on PI values, and lightly polluted based on CF and Igeo values. BAF values indicate the mullet fish accumulated Pb on its body. Referring to the results of the research, efforts to manage the waters of East Plawangan Segara Anakan Cilacap need to be done periodically for the sake of sustainability.

Key words: East Plawangan, Heavy metal Pb, Water, Sediment, Mullet Fish (*Planiliza subviridis*)