

Distribusi serta kelimpahan makro- dan mikroplastik di Muara Sungai Musi, Sumatera Selatan, Indonesia = Distribution with abundance of macro- and microplastic at Musi Estuary, South Sumatera, Indonesia

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Abstrak

Sungai Musi merupakan salah satu sungai terpanjang di Pulau Sumatera yang terletak di Provinsi Sumatera Selatan dan muaranya berada di Kabupaten Banyuasin. Muara dan Sungai Musi banyak dimanfaatkan untuk aktivitas ekonomi seperti sanitasi, jalur transportasi, dan kegiatan perikanan. Jumlah penduduk yang tinggi dan banyaknya pemukiman yang berada di jalur sungai mus, serta adanya aktivitas di perairan tersebut akan menghasilkan sampah plastik baik makroplastik maupun mikroplastik. Sampah dari sungai akan menuju muara dan mencemari pesisir serta laut. Tujuan dari penelitian ini adalah untuk mengetahui distribusi serta kelimpahan makro- dan mikroplastik yang ada di hulu dan muara Sungai Musi. Penelitian ini menggunakan pendekatan deskriptif kuantitatif dengan pengambilan sampel secara purposive sampling. Hasil penelitian menunjukkan bahwa di hulu dan muara Sungai Musi sudah tercemar oleh sampah plastik, dan adanya perbedaan kelimpahan makro- dan mikroplastik antar stasiun penelitian. Kelimpahan makroplastik berkisar antara 5-32 item/m² dengan rata-rata berat yaitu 27,82-126,89 g/m² dan 5 jenis makroplastik yang mendominasi yaitu serpihan plastik; kemasan makanan; gayung/emper/botol plastik lainnya; kantong plastik; dan gelas plastik. Jenis mikroplastik yang ditemukan yaitu dalam bentuk fragmen; fiber; film; dan pellet/granula. Kelimpahan mikroplastik di air permukaan berkisar antara 342-793 partikel/L yang didominasi oleh fragmen, kelimpahan mikroplastik di sedimen berkisar antara 4.458,67-5.514,67 partikel/kg didominasi oleh fragmen. Beberapa langkah pengelolaan sampah plastik berdasarkan hasil penelitian antara lain yaitu: meningkatkan monitoring dan penelitian sampah plastik; kampanye pendidikan publik jangka panjang; membuat peraturan daerah tentang penggunaan plastik; dan pengelolaan sampah plastik yang baik dan secara berkala.

.....Musi River is one of the longest rivers in Sumatra Island, which flows through South Sumatra Province and its estuary reaches out in Banyuasin Regency. Musi River and especially its estuary are highly used for economic activities such as mode of transport, fishing as well as sanitation. The high density of population and the increasing number of settlements in the Musi River banks result in increasing plastic waste-both macroplastic and microplastic which flows into the estuary and pollutes the coast and sea. The objective of this study is to determine the distribution and the abundance of macro-and microplastic in the upstream and estuary of Musi River. This research used a quantitative descriptive approach with purposive sampling method. The results of the study showed that the upstream and estuary of Musi River had been polluted by plastic waste and also showed the differences in macro- and microplastic abundance between research stations. Macroplastic abundance ranging from 5-32 items/m² with an average weight of 27.82-126.89 gr/m² and the dominant macroplastic types are plastic fragments; food wrappers; other jugs/containers; bags(films); and cups. Whereas the types of microplastic found are in the form of fragments; fiber; film; and pellets/granules. Microplastic abundance in the surface of water ranged from 342-793 particles/L which were dominated by fragment, whereas microplastic abundance in sediments ranged from 4,458.67-5,514.67 particles/kg which were dominated by fragment. Consequently the results of the study propose several steps

to manage plastic waste in the coastal area development including: increasing identification and monitoring of plastic waste problems; long-term community education; local regulations regarding the use of plastic; and manage of plastic waste regularly.