# CHARACTERISTIC OF NATURAL MANGROVE HABITAT AND AROUND TIN OFFSHORE MINING IN SOUTH OF BANGKA REGENCY

**By**

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## ABSTRACT

Tin mining activity can disturb abiotic component of mangrove related to water quality such as temperature, brightness, salinity, dissolved oxygen pH, the depth of mud, the content of heavy metal of sea and mangrove biotic component such as mangrove vegetation and plankton.

The purpose of this study was to find the characteristic of mangrove habitat based on water quality, vegetation, and the content of heavy metal in the mangrove area with and without tin mining activities. The method of sample this research was done in systematic sampling with random start, and than was analyzed by using independent sample test. The quality of water was examined in Forest Ecology Laboratorium of Universitas Gadjah Mada Yogyakarta while the content of heavy metal in the water was analyzed based on a method of SNI AAS in Balai Besar Teknik Kesehatan Lingkungan Dan Pengendalian Penyakit (BBTKLPP) Yogyakarta which refered to sea water quality standards for heavy marine life KepMenLH 2004 (mg / l).

The research showed, there were significant different of the mud thickness average value at the natural mangrove 64 cm and 179 cm of mangrove area in tin mining offshore. Salinity 32,56 ‰ and 11,79 ‰, degree acidity (pH) 7,3 and 6,2, dissolved oxygen 15,14 ppm and 12,82 ppm, brightness 32 cm and 9 cm, plankton 435,273 individu/ml and 546.800 individu/ml which species diversity 4,08 and 2,99. Density of offshore mining in mangrove area is 18.330 individu/ha and the natural mangrove 46.600 individu/ha which species diversity 0,74 an 0,84, and comparison of temperature 28,4$^{o}$C and 28,7$^{o}$C of independent sample test can't show different real. The content of lead metal (Pb) and Cu (copper) having the same value, Pb <0,0161mg/l and cu <0,0069mh/l. Levels Pb and cu in the natural mangrove was influenced by the island was the transportation ships using fuel are able to add the content of Pb and Cu in waters, while in the tin mining areas were influenced by the waste diposal of tin mining and fuel oprasional tin mining.

Keywords : Mangrove, Habitat, Tin mining, Coastal ecosystem.

# KARAKTERISTIK HABITAT MANGROVE ALAMI DAN DI SEKITAR PERTAMBANGAN TIMAH LEPAS PANTAI KABUPATEN BANGKA SELATAN

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## INTISARI

Kegiatan penambangan timah dapat mengganggu komponen abiotik mangrove terkait kualitas air meliputi suhu, kecerahan, salinitas, oksigen terlarut, pH, Kedalaman lumpur, kandungan logam berat dari air laut dan komponen biotik mangrove seperti vegetasi mangrove dan Plankton.

Tujuan penelitian ini adalah untuk mengetahui karakteristik habitat mangrove berdasarkan kualitas perairan, vegetasi mangrove serta kandungan logam pada wilayah mangrove tanpa aktivitas pertambangan timah dan mangrove dengan aktivitas pertambangan timah. Metode pengambilan sampel di lapangan dilakukan secara *systematic sampling with random start* kemudian dianalisis dengan analisis statistik Independent sample test. Kualitas perairan diteliti di Laboratorium Ekologi Hutan Universitas Gadjah Mada Yogyakarta dan kandungan logam berat dalam air dianalisis berdasarkan metode SNI AAS di Balai Besar Teknik Kesehatan Lingkungan Dan Pengendalian Penyakit (BBTKLPP) Yogyakarta dan mengacu pada baku mutu kebutuhan biota laut KepMenLH 2004 (mg / l) .

Hasil penelitian ini menunjukan terdapat beda nyata rata-rata ketebalan lumpur pada kawasan mangrove alami 64 cm dan 179 cm pada kawasan mangrove di wilayah pertambangan timah lepas pantai, salinitas 32,56 ‰ dan 11,79 ‰, derajat keasaman (pH) 7,3 dan 6,2, oksigen terlarut 15,14 ppm dan 12,82 ppm, kecerahan 32 cm dan 9 cm, kelimpahan plankton 435.273 individu/ml dan 546.800 individu/ml dengan keanekaragaman plankton 4,08 dan 2,99. serta kerapatan jenis mangrove alami yaitu 46.600 individud/ha dan kerapatan jenis di kawasan mangrove pertambangan timah lepas pantai sebesar 18.300 individud/ha dengan keanekaragaman jenis 0,74 dan 0,84 dan perbandingan Suhu 28,4 $^{o}$C dan 28,7 $^{o}$C berdasarkan analisis sample test tidak menunjukan beda nyata. Kandungan logam Timbal (Pb) dan Cu (tembaga) memiliki nilai yang sama, yaitu Pb < 0,0161 mg/l dan Cu < 0,0069 mg/l. Kadar Pb dan Cu di kawasan mangrove alami dipengaruhi oleh kondisi kepulauan merupakan jalur transportasi kapal-kapal yang menggunakan bahan bakar yang dapat menambah kandungan Pb dan Cu di perairan, sedangkan pada wilayah pertambangan timah di pengaruhi oleh limbah buangan hasil pertambangan timah dan bahan bakar oprasional pertambangan timah.

Kata Kunci : Mangrove, Habitat, Pertambangan timah, Ekosistem pesisir.