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The study of species abudance and aboveground biomass for mixed mangrove forest type Tok Bali / Nurun Nadhirah Md Isa

THE STUDY OF SPECIES ABUNDANCE AND ABOVE-GROUND BIOMASS FOR MIXED MANGROVE FOREST TYPE, TOK BALI

By

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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: THE STUDY OF SPECIES ABUNDANCE AND ABOVE-GROUND BIOMASS FOR MIXED MANGROVE FOREST TYPE, TOK BALI oleh Nurun Nadhirah bt Md Isa no. matrik: UK 8390 telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah Sarjana Muda Sains Gunaan - Pemuliharaan dan Pengurusan Biodiversiti, Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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LIST OF ABBREVIATIONS

cm	-	centimeter
° C	-	degree Celsius
DBH	-	Diameter Breast Height
E	-	East
e.g.	-	exempli gratis (Latin)
GPS	-	Global Positioning System
H	-	height
ha	-	hectare
kg ha^{-1}	-	kilogram per hectare
km	-	kilometre
lat	-	latitude
long	-	longitude
m	-	meter
mm	-	milimeter
m^2 ha^{-1}	-	meter square per hectare
N	-	North
t ha^{-1}	-	tonne per hectare
%	-	percentage

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ABSTRACT

A study was conducted in July, September and November 2006 to determine species composition, diversity index and above-ground biomass in Mixed Mangrove forest type at Tok Bali, Kelantan. Twenty plots were built and DBH, height, crown form and stem categories of trees were measured and recorded. For sapling and seedling, number of individuals was counted. Diversity index and above-ground biomass were determined. A total of 10 species including nine exclusive and one non-exclusive mangrove were recorded. The most common species was *Sonneratia alba* with 234 trees, 33 saplings and 756 seedlings, followed by *Ceriops decandra*, *Excoecaria agallocha*, *Avicennia alba*, *Bruguiera cylindrica*, *B. sexangula*, *Rhizophora apiculata*, *Nypa fruticans* and *Derris trifoliata*. From the result, total number of seedling per hectare (5,305) represented a good regeneration potential. Total above-ground biomass was 2664.57 kg/ha. *Sonneratia alba* recorded the highest (665.73 kg/ha) total above-ground biomass because of the wide range of diameter and height. Mangrove trees showed total average of species richness (S) was 8.0, species evenness (E) was 0.793 and species diversity (H') was 1.603. Since the sampling plots were less than the standard sampling plot suggested, this inventory may not represent the total number of species in Mixed Mangrove forest type at Tok Bali. Therefore, it is recommended that future study should be 30 plots or cover 2% from the total mangrove area.

KAJIAN KELIMPAHAN SPESIES DAN BIOJISIM PERMUKAAN DI HUTAN PAYA LAUT CAMPURAN, TOK BALI

ABSTRAK

Satu kajian telah dijalankan pada Julai, September dan November 2006 untuk menentukan komposisi spesies, indek kepelbagaian dan biojisim permukaan di Hutan Paya Laut Campuran, Tok Bali, Kelantan. Dua puluh plot telah dibina dan diameter di paras dada (DBH), ketinggian, bentuk kanopi dan kategori batang telah diukur dan direkodkan. Bagi anak pokok dan biji benih, hanya bilangan individu diambil kira. Indek kepelbagaian dan biojisim permukaan ditentukan. Spesies yang paling umum ialah *Sonneratia alba* dengan 234 pokok, 33 anak pokok dan 756 biji benih, diikuti dengan *Ceriops decandra*, *Excoecaria agallocha*, *Avicennia alba*, *Bruguiera cylindrica*, *B. sexangula*, *Rhizophora apiculata*, *Nypa fruticans* dan *Derris trifoliata*. Daripada keputusan, jumlah bilangan biji benih per hektar (5,305) menunjukkan potensi regenerasi yang baik. Jumlah biojisim permukaan ialah 2664.57 kg/ha. Biojisim permukaan *Sonneratia alba* paling tinggi (665.73 kg/ha) kerana julat diameter dan ketinggian yang besar. Pokok hutan paya laut menunjukkan purata jumlah bagi kekayaan spesies (S) ialah 8.0, kesamarataan spesies (E) ialah 0.793 dan kepelbagaian spesies (H') ialah 1.603. Oleh sebab plot persampelan adalah kurang daripada piawai, bancian tidak menggambarkan jumlah spesies sebenar di Hutan Paya Laut Campuran, Tok Bali. Maka, kajian lanjutan dicadangkan supaya merangkumi 30 plot atau meliputi 2% daripada keluasan keseluruhan hutan paya laut.