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Banthic algae community at two headwater streams of Sekayu, Terengganu / Kalsom Mat Saleh.

Lihat sebelah

BENTHIC ALGAE COMMUNITY AT TWO HEADWATER STREAMS OF SEKAYU, TERENGGANU.

By
Kalsom Mat Saleh

Research Report submitted in partial fulfillment of
The requirements for the degree of
Bachelor of Applied Science (Biodiversity Conservation and Management)

Department of Biological Sciences
Faculty of Science and Technology
UNIVERSITI MALAYSIA TERENGGANU
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PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK PENYELIDIKAN I DAN II
RESEARCH REPORT VERIFICATION

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:
KOMUNITI BENTIK ALGA DI DUA HULU SUNGAI DI SEKAYU, TERENGGANU
Oleh Kalsom binti Mat Saleh, no. Matrik: UK10332 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 (Pengurusan dan Pemuliharaan Biodoversiti), Fakulti Sains dan Teknologi,Universiti Malaysia Terengganu.

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g	-	gram
cm/s	-	centrimeter per second
mm	-	milimeter
km	-	kilometer
km^2	-	kilometer square
cm	-	centimeter
mL	-	mililiter
^0C	-	degrees Celcius

ABSTRACT

Freshwater algae played very important role in energy cycling and stabilizing the dynamic of freshwater ecosystem. This study was conducted to determine the benthic algae communities which appear at two different headwaters at Sekayu, Terengganu and also to recognize the factors affecting the algal occurrence. The two headwaters involved in this study were Sungai Peres and Sungai Bubu with each headwater was divided into upper stream and lower stream in purpose to determine the peryphytic algae communities appear at each site longitudinally. The water physical measurement (temperature, pH, water velocity, Total Suspended Solid (TSS), rainfall and relative humidity) were recorded to determine the water ambient parameter at each site and their relationship with the appearance of benthic algae community from each site. A total of 32 morphospecies were collected from the benthic algae community, of which 15 belong to Chlorophyceae, one Myxophyceae, two Xantophyceae, one Euglenophyceae and 18 Diatom from four times monthly sampling starting from August, September, October and lastly in November. Sungai Pertanian was recorded as having the highest diversity value which is 3.4721, whilst the lowest diversity was recorded Sungai Bubu with 2.7424. Least benthic algae community due to loss suitable substrate on site as human used to dig them out from the stream for agricultural purpose determine the significant different of upperstream of Sungai Peres with the lower stream of Sungai Bubu with P=0.021. Diatoms and Chlorophyceae slightly fair dominating the studied area at 90.94% of total family composition with maximum number of species collected commonly obtained from the upper stream of each headwater. Total suspended solid, water velocity, rainfall and temperature was detected to have significant effect towards the morphospecies and individuals obtain respectively according to Spearman's Correlation Analysis which responsible in regulating the benthic algae community in study site. Other chemical and physical factors need to be discovered comprehensively to evaluate the algal assemblages on studied area.

KOMUNITI BENTIK ALGA DI DUA HULU SUNGAI DI SEKAYU, TERENGGANU.

ABSTRAK

Alga air tawar memainkan peranan yang penting dalam kitaran tenaga dan menstabilkan kedinamikan ekosistem air tawar. Kajian ini telah dijalankan dengan tujuan untuk mengenalpasti komuniti bentik alga yang terdapat di dua sungai yang terdapat di Sekayu, Terengganu dan juga untuk mengenalpasti faktor-faktor yangmempengaruhi kedapatan alga di kawasan kajian. Dua batang sungai yang terlibat di dalam kajian ini ialah Sungai Peres dan Sungai Bubu. Setiap sungai dibahagikan kepada dua bahagian iaitu bahagian hulu dan hilir sungai untuk mengenalpasti komuniti perifitik alga yang wujud secara longitud. Ukuran ciri fizikal air (suhu, pH, kelajuan aliran air, jumlah pepejal terampai, hujan dan kelembapan relatif) direkod untuk mengenalpasti hubungkait antara parameter tersebut dengan kewujudan komuniti alga di kawasan kajian. Sejumlah 32 morphospesis telah dikenalpasti dimana 15 dari famili Chlorophyceae, satu Myxophyceae, dua Xantophyceae, satu Euglenophyceae dan 18 Diatom. Sepanjang tempoh kajian bermula Ogos hingga November 2006, Sungai Peres mencatatkan nilai indeks kepelbagaian tertinggi dengan nilai 3.4721 manakala Sungai Bubu mencatatkan nilai terendah iaitu 2.7424. Nilai tersebut adalah berikutan kekurangan substrat pelekatan bagi bentik alga berikutan proses pengorekan keluar batu dari kawasan tersebut untuk tujuan pembinaan empangan pengairan pertanian menerangkan bagaimana ia memberikan kesan penting perbezaan diperoleh antara hulu Sungai Peres berbanding hilir Sungai Bubu pada P=0.021. Diatom dan Chlorophyceae mendominasi kawasan kajian pada komposisi hampir sama dengan bilangan individu tertinggi diperolehi dari hulu sungai setiap batang sungai. Jumlah pepejal terampai, kelajuan aliran air, hujan dan suhu dikenalpasti memberikan kesan yang penting terhadap morphospesis dan bilangan individu yang diperoleh berdasarkan Analisa Korelasi Spearman. Faktor-faktor kimia dan fizikal lain perlu dikaji secara komprehensif untuk menilai kedapatan komuniti alga di kawasan kajian.