PERAN VEGETASI MANGROVE DALAM MENGURANGI KECEPATAN ARUS AIR LAUT DI PANTAI UTARA KABUPATEN REMBANG JAWA TENGAH

Oleh:
TULUS KRISTIADI
02/155617/KT/04989

INTISARI

Ekosistem mangrove memiliki fungsi fisik yang sangat penting untuk melindungi daratan dari abrasi oleh hempasan arus atau gelombang air laut. Fungsi ini diperankan oleh adanya perakaran yang rumit dan kokoh, khususnya perakaran *Rhizophora* spp.. Penelitian ini bertujuan mengetahui kerapatan vegetasi dan lebar perakaran mangrove serta pengaruh keduanya dalam mengurangi kecepatan arus air laut di kawasan rehabilitasi pantai utara Desa Pasar Banggi Kabupaten Rembang. Hasil yang diperoleh dari penelitian ini diharapkan memberikan kontribusi bagi keperluan ilmiah maupun upaya pengelolaan terhadap ekosistem mangrove.

Data vegetasi diperoleh dengan metode kuadrat (*Quadrat Sampling*). Ukuran petak ukur yang digunakan adalah 5m x 5m. Variabel yang diambil adalah kerapatan vegetasi dan lebar perakaran. Pengambilan data kecepatan arus (V) dilakukan 3 kali ulangan pada tiap titik pengamatan, total 11 titik sebelum dan 11 titik sesudah melewati vegetasi. Pengukuran menggunakan alat *Current Meter,* sehingga didapatkan data jumlah putaran perdetik (N). Dari hasil pengamatan di lapangan kemudian diolah dengan rumus V = (0,016N+0,006) meter/detik. Pengaruh kerapatan vegetasi dan lebar perakaran dianalisis dengan regresi linear sedangkan pengaruh kombinasi keduanya dianalisis dengan regresi berganda.

Jenis vegetasi mangrove yang ditemui antara lain *Rhizophora stylosa*, *Rhizophora mucronata* dan *Sonneratia alba*. Kerapatan vegetasi tidak memberikan pengaruh yang signifikan terhadap pengurangan kecepatan arus dengan persamaan regresi Y = -27,756 + 0,008X. Lebar perakaran memberikan pengarh yang signifikan dengan persamaan regresi Y = -17,542 + 40,864 X. Persamaan regresi yang diperoleh dari kombinasi antara kerapatan vegetasi dan lebar perakaran terhadap pengurangan kecepatan arus adalah Y = -126,31 + 0,010X_1 + 52,46X_2 dengan Y, X_1 dan X_2 berturut-turut adalah pengurangan kecepatan arus, kerapatan vegetasi dan lebar perakaran. Adanya pengaruh yang nyata dari vegetasi mangrove terhadap pengurangan kecepatan arus tentunya diharapkan untuk menjadikan seluruh kawasan mangrove tetap lestari.

Kata kunci: kerapatan vegetasi, lebar perakaran, pengurangan kecepatan arus.

THE ROLE OF MANGROVE VEGETATION TO THE DECREASE OF SEA CURRENT VELOCITY AT THE NORTH SHORE OF REMBANG REGENCY OF CENTRAL JAVA

By:
TULUS KRISTIADI
02/155617/KT/04989

ABSTRACT

The mangrove ecosystem has an important physical function to protect the land from abrasion by the sea current or wave struck. This function has been portrayed by the complex and strong root system, especially by the root system of *Rhizophora* spp. This experiment aimed to seek the vegetation density and the root system width of mangrove and their influence to the decrease of sea current velocity at the north shore rehabilitation area of Pasar Banggi Village of Rembang Regency. The result of this study is expected to give contribution to scientific needs and also to support the management of mangrove ecosystem.

Vegetation data were obtained by using quadrate method (*Quadrate Sampling*). The size of the measuring partition being utilized was 5m X 5m. Variables being used were the vegetation density and the root system width. Data gathering of sea current velocity (V) were conducted in three repetitions on each observation spot, with eleven observation spots in total, before and after they undergone vegetation. Measuring made use of *Current Meter*, hence the data of the number of rotation per second (N) were obtained. The result of field observation then being processed by the formula of V = (0,016N+0,006) meter/second. The influence of vegetation density and root system width was analyzed by linear regression, while the influence of the combination of vegetation density and root system width was analyzed by multiplication regression.

Some of the species of mangrove vegetation found were *Rhizophora stylosa, Rhizophora mucronata* and *Sonneratia alba*. Vegetation density did not play a significant role to the decrease of sea current velocity with regression equation of Y = -27,756 + 0,008X. Root system width gave a significant role with regression equation of Y = -17,542 + 40,864X. The regression equation obtained from the combination of vegetation density and root system width was $Y = -126,31 + 0,010X_1 + 52,46X_2$ with Y, X_1 and X_2 were the decrease of sea current velocity, vegetation density and root system width. The presence of the obvious influence of mangrove vegetation to the decrease of sea current velocity was expected to maintain the preservation of mangrove area.

Keywords: vegetation density, root system width, the decrease of sea current velocity.