QUANTITATIVE AND QUALITATIVE EFFECTS OF LIGHT ON THE DISTRIBUTION OF GIANT CLAMS AT THE JOHORE ISLANDS IN SOUTH CHINA SEA

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ABSTRACT

Light intensity as well as the spectral qual-ity affect the distribution of giant clams. *Tridacna maxima* and *T. squamosa* were distributed between 0.5 and 9.0 m on the reefs. The populations of these two species were able to survive **in** the deeper areas co- inciding with a narrow spectral range be- tween 475 nm to 550 nm blue-green wave- band. However , *T. crocea* and *Hippopus hippopus* were only found at depths between 0.5 and 3.5 m, where the clams are exposed to higher light intensities with the peak oc- curring from 400 to 650 nm (green to red waveband). *T. maxima* and *T. squamosa* were subjected to approximately 36 % of surface light intensity, which can be reduced to as low as 18 % during a cloudy day, while *T. crocea* and *H. hippopus* populations ob- tained approximately 30 % (cloudy day) to as high as 75 % light intensity. *T. crocea* and *H. hippopus* required higher light intensities and are exposed to a broader range for sur- vival on the reefs compared to *T. maxima* and *T. squamosa*.