

UNIVERSITI TEKNOLOGI MARA

**THE EFFECT OF MAGNETIC FORCE
DISTANCE ON CORAL GROWTH
(*Pocilopora sp.*) IN TELUK DALAM,
PULAU LANGGUN, LANGKAWI**

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This Final Year Project Report entitled " **The Effect Of Magnetic Force Distance On Coral Growth (*Pocillopora Sp.*) In Teluk Dalam, Pulau Langgun, Langkawi** " was submitted by Nur Fadilah Yusof, in partial of the requirements for the Degree of Bachelor of Sciences (Hons.) Marine Technology, in the Faculty of Applied Sciences, and was approved by

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ABSTRACT

Coral reefs are important they protect coastlines from the damaging effects of wave action and tropical storms, provide habitats and shelter for many marine organisms. Coral reefs are endangered species due to global warming, overfishing, and pollution. The current status of coral reefs in Pulau Langgun, Langkawi is in poor to good condition. This research studies the effect of magnetic field distance on the growth of *Pocilopora sp.* in Teluk Dalam, Pulau Langgun, Langkawi to enhance the growth rate of *Pocilopora sp.* around the island. The objectives of this study to determine the growth rate of *Pocilopora sp.* between distance, to measure the survival rate of the *Pocilopora sp.* transplanted by magnetic force and to identify the relationship between the coral growth and the distance of magnetic force. This study will help the coral to rehabilitate faster than normal reactions by creating the ideal of the biophysical conditions using a magnetic force from the neodymium magnet. *Pocilopora sp.* was selected in this study because of its rapid growth and hard coral. The asexual reproduction of coral reefs using fragmentation techniques was used for each new parent of *Pocilopora sp.* before mounting on a layer of wire built from PVC pipe. Neodymium magnet is used because the stronger magnetic attraction attracts ions Ca^{2+} , Cl^- , CO_3^{3-} , Na^{2+} from seawater to help coral reef growth. Neodymium magnets are arranged between the reefs to create magnetic attraction. The results of the two-month study are increased, and the highest increase in coral reef growth was $3.5 \pm 1.76\text{mm}$. The live coral reef rate for two months was 70.37%. The statistical analysis showed a weak positive correlation where $p = 0.189$, $p > 0.05$ between the growth rate and distance of the magnetic force. The conclusion from future research is that the study period is within six months, and use larger magnets to further increase the rate of coral reef growth.

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