Effect of temperature on leaf and rhizome growth rates in seagrass *Halophila ovalis*

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Seagrasses are flowering plants that complete their life cycle submerged in seawater. They are important as habitat and food source for marine organisms. Seagrasses growth and reproduction is affected by environmental parameters such as temperature and nutrients. Following the current global warming trend, Ocean temperatures in Tanzania are predicted to increase by 2-4°C from current levels of 27-28°C and result in highest temperature about (35-37 °C) which is far from the reported optimal temperature for growth of tropical seagrasses which ranges between 23-32 °C. These Changes are likely to affect the reproduction and survival of seagrasses in this region. Investigating factors affecting seagrass growth can assist to predict impacts of climate change such as increase in temperature. In the present study Halophila ovalis was studied as indicator of the influence of temperature on growth. Samples were collected from Kunduchi Dar es Salaam and grown in the laboratory under temperatures of 22-23, 25-26, 27-28, 30-31 and 33-34 °C, for 30 days. The length of new and mature leaves was measured at three days intervals; leaf number, leaf weight, rhizome length and rhizome weight were determined at the end of the experiments. Results suggest 25-26 °C to be the optimum temperature for growth of Halophila ovalis. Lowest growth rates were observed at 22-23 and 30-31 °C, while samples grown at 33-34 °C survived only for four days. From these results the anticipated temperature increase will lead to change in seagrass distribution, abundance and possibly disappearance of higher temperature intolerant species.