

Capture rates of *Lophelia pertusa* on living zooplankton under different current speed regimes

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In order to record prey capture rates by *Lophelia pertusa*, under conditions designed to simulate the natural environment, feeding experiments have been conducted with colonies of *L. pertusa* from the Mingulay reef complex (Sea of the Hebrides, UK) using freshly captured zooplankton. This is the first time feeding trials with *L. pertusa* have been carried out using naturally-occurring zooplankton as opposed to aquarium-grown prey (e.g. *Artemia salina*) or frozen food material. The experimental apparatus consisted of four circular tanks (three experimental and a control); in each tank current speed was regulated, and in order to test the live prey capture efficiencies, three different current speeds (2 cm.s^{-1} , 5 cm.s^{-1} and 10 cm.s^{-1}) were used for each experiment. Our results show clear differences between the three current speeds. *Lophelia pertusa* successfully captured zooplankton between 2 and 5 cm.s^{-1} whereas at the higher current speed zooplankton capture could not be significantly detected. Understanding fundamental biological parameters, such as feeding ecology, in cold-water corals are a vital prerequisite if we are going to predict their potential vulnerability to future change. These questions will be examined in greater detail through the newly develop Trans-Atlantic Coral Ecosystem Study (see www.lophelia.org/traces and www.esf.org/eurotraces).