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Autun Purser, [Covadonga Orejas](#), Annika Moje and Laurenz Thomsen, (2014). [The influence of flow velocity and suspended particulate concentration on net prey capture rates by the scleractinian coral *Balanophyllia europaea* \(Scleractinia: Dendrophylliidae\)](#)

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Abstract: *Balanophyllia europaea* is an endemic Mediterranean sublittoral zooxanthellate solitary coral. Given the broad distribution of the species throughout many areas of the Mediterranean surprisingly little is known of preferred habitat niches or susceptibility of the species to environmental change. In this study we investigated in the laboratory the net prey capture rates of the coral achievable under a range of flow velocities (2.5, 5, 7.5 and 15 cm s⁻¹) and under exposure to different suspended particulate concentrations (0, 7.3 and 170 mg l⁻¹). In recirculation flumes we simulated both commonly occurring and the occasionally high flow velocities and various suspended particulate concentrations reported from the Gulf of Lions (north-west Mediterranean). We then delivered ca 500 A.

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nauplii) to the flumes and monitored net prey capture over time. We found net prey capture rates by the species to be highest under flow velocities of 5 cm s⁻¹, with 230 µg C coral individual⁻¹ h⁻¹ achieved. The presence or absence of even environmentally high particulate concentrations (up to 170 mg l⁻¹ resuspended seabed material) did not significantly affect the net prey capture rates achieved by the coral polyps. We found that net prey capture in *Balanophyllia europaea*

is not inhibited during periods of heavy particle exposure, as has been observed in other temperate scleractinian corals. Also, flow velocities of ca ~5 s⁻¹ appear to be optimal for maximum net prey capture by the species.

Keywords: temperate coral, cup coral, net prey capture, Gulf of Lions, Mediterranean, articulate exposure, flow rates, Scleractinia