Effect of the surgeonfish *Ctenochaetus striatus* (Acanthuridae) on the processes of sediment transport and deposition on a coral reef in the Red Sea

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Abstract Excessive sedimentation is a major threat to coral reefs. It can damage or kill reef-building corals and can prevent the successful settlement of their planktonic larvae. The surgeonfish *Ctenochaetus striatus* feeds on rocky surfaces by sweeping loose material into its mouth with its flexible, broom-like teeth. In addition, it grasps and removes hard substrates with the aid of its special palate structure. It then transports sediment matter of the reef by defecating the ingested material outside the rocky zone of the reef. **We analyzed 150 feces samples** of six individuals, differentiating between (1) ingested by sweeping and (2) ingested by scraping, and compared their content with inorganic land-derived and marine sediments trapped at the feeding area. Projections based on fish densities, defecation rates, and quantities as well as composition of sediments collected by traps on the same reef site suggest that ***C. striatus* removes at least 18% of the inorganic sediment sinking onto the reef crest.** The eroded share in the exported matter is about 13%. This finding points to a hitherto not verified role of *C. striatus* as a reef sweeper and reef scraper, whereby the first function is by far dominating.

Keywords Coral reefs, Red Sea, Sedimentation, Feeding and defecation behaviour, **Reef sweeper**