Coral-feeding wrasse scars massive *Porites* colonies

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Fig. 1 (a) Massive *Porites* colony showing typical scarring following predation by *L. unilineatus*. (b) Expansion of feeding scar over a 4-h period, photo taken at 10 a.m. and (c) 4 h later. Scale bar 20 mm. Asterisks identify the same polyp

Coral-feeding fish can be broadly categorised into polyp and skeletal feeders. Skeletal feeders (e.g. Scarids, Tetraodontids) remove coral skeleton in addition, to coral tissue and can have dramatic influences on the coral community (Cox 1986). In contrast, most coral-feeding fish remove coral polyps and mucous without harming the underlying corallite, thus leaving no visible evidence of predation. This has subsequently led to the assumption that polyp-feeding fishes have only minor impact on prey corals (reviewed by Cole et al. 2008). However, in Kimbe Bay, Papua New Guinea, intense predation by the mucous feeding tubelip wrasse, *Labrichthys unilineatus* leads to distinct feeding scars on massive *Porites* colonies. Individual fish were observed to rapidly mouth the coral and repeatedly returned to the exact same point to feed presumably to exploit excess mucous production following the initial injury (McIlwain and Jones 1997). This repetitive mouthing left conspicuous white circular marks. Most scars were small, typically less than 1 cm in diameter (Fig. 1a). However, larger scars were occasionally observed. One such scar was monitored, where at least eight larger *L. unilineatus* individuals (8–12 cm TL) repeatedly fed in the same exact location, causing visible expansion of this scar ($\approx 8 \text{ cm}^2$) over a 4-h period (Fig. 1b, c).

Not all massive *Porites* colonies had feeding scars, however, when scars were observed they were usually numerous (Fig. 1). The relatively flat, two-dimensional surface of massive *Porites* colonies may enable *L. unilineatus* to feed more efficiently and remove a greater amount of tissue per bite compared to more complex branching species. The energetic cost of chronic predation by small piscine corallivores is often considered to be negligible, but extensive tissue loss as observed on *Porites* colonies will clearly require considerable investment in repair and may facilitate the establishment of disease or epibionts (e.g. *Spirobranchus gigantea*).

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Reef sites

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