

Landscape video mosaic from a mesophotic coral reef

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Landscape video mosaics (Lirman et al. 2007) were acquired at four sites in the Hind Bank Marine Conservation District, US Virgin Islands (Smith et al. In press), one of which is shown here (Fig. 1). This mosaic covers 31 m² with a resolution of 1.8 mm/pixel. Live stony coral cover, estimated from 400 random points on the mosaic, was high (42.5%). The community was dominated by plating or encrusting forms of colonies of the genus *Montastraea*. Other coral genera identified from the video at lower abundance included *Agaricia*, *Colpophyllia*, *Helioseris*, *Mycetophyllia*, and *Porites*.

Dive time and diver training were not obstacles to video acquisition for landscape mosaics, which in this case took only 25 min per mosaic by a diver who had only one practice acquisition. Processing each mosaic took about 1 h of analyst time and 24 h of computer time. The ease of data acquisition, ability to use off-the-shelf hardware (i.e., a video camera and possibly lights), and potential suite of indicators (e.g., benthic cover, coral sizes, disease prevalence, and bleaching) that can be obtained from the images suggest that landscape mosaics could be applied widely for surveys of mesophotic coral ecosystems.

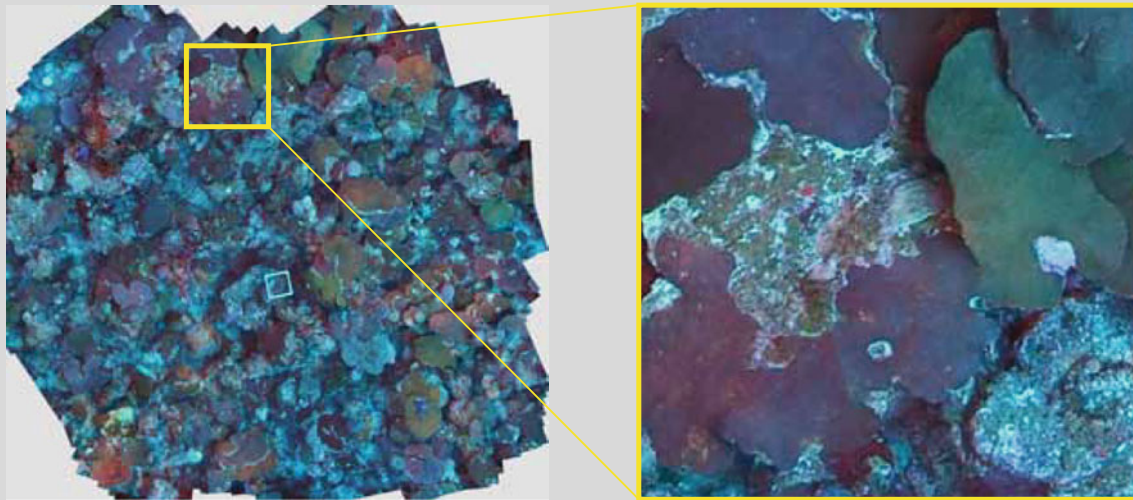


Fig. 1 Landscape video mosaic showing the flattened, platy coral morphology common at mesophotic depths (18°11.8083'N, 65°04.7451'W, 38.5 m depth). Inset highlights evidence of old partial mortality. The use of supplementary illumination resulted in red highlights visible on the parts of the plot closest to the diver. Mosaic was created by processing 3,811 video frames, from which 211 were used for rendering. Quadrat is 25 × 25 cm

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Reef sites

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