

Four-year-old Caribbean *Acropora* colonies reared from field-collected gametes are sexually mature

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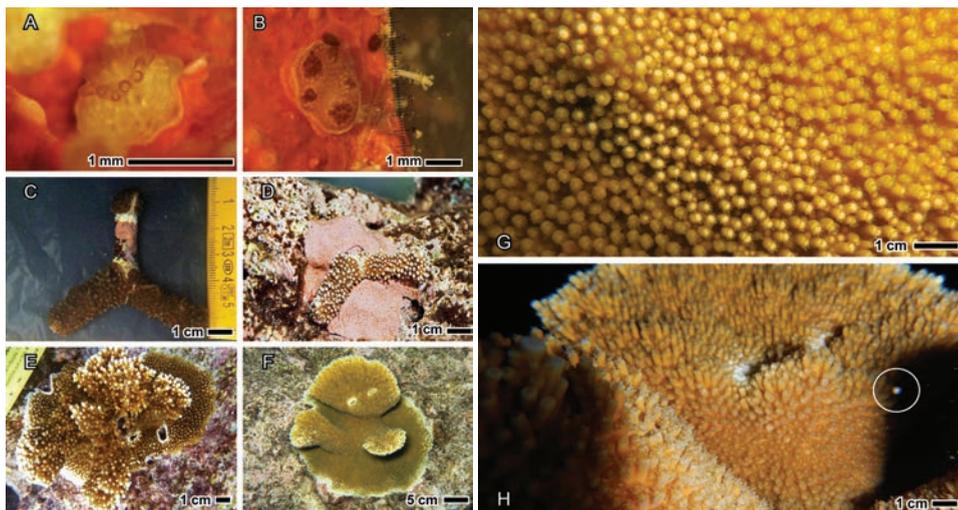
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Rehabilitating populations of Caribbean coral species that have declined in recent decades has become a management priority throughout the region, stimulating the development of new methodologies to artificially reseed degraded reefs. Rearing larvae of ecologically important coral species appears a particularly attractive method to aid the recovery of degraded populations because genetic recombination could yield new genotypes better capable of coping with the altered conditions on modern Caribbean reefs. Well-developed elkhorn coral (*Acropora palmata* Lamarck, 1816) populations form dense thickets that contribute to the maintenance of healthy and productive reefs by providing shelter to a variety of other reef organisms (Gladfelter and Gladfelter 1978). After >95% of *A. palmata* populations were decimated by a disease beginning in the mid-1970s, this species was listed as critically endangered under the Red List of Threatened Species (IUCN 2013) and restoration efforts were initiated throughout the region to assist its recovery (Young et al. 2012). In 2011, we collected gametes from eight *A. palmata* colonies in situ off Curaçao, which were subsequently cross-fertilized to generate larvae. Competent larvae were settled on clay tiles (Panel A) and reared in a flow-through land-based nursery for one year (Panels B–C), after which they were outplanted to a breakwater at 2–5 m depth

(Panel D) [refer to Chamberland et al. (2015) for details on methodology]. Seven out of nine outplanted colonies survived and continued to grow in situ (Panels D–E), reaching a size of 30–40 cm diameter and 20–30 cm height after 4 yrs (Panel F). On 8 and 10 September, 2015, nine and 11 d after the full moon, two colonies were observed releasing gametes between 155 and 175 min after sunset (Panels G–H). This is the first time that an endangered Caribbean *Acropora* coral species was raised from larvae and grown to sexual maturity in the field. Indeed, only one other study has documented age and colony size at reproductive onset in a broadcast spawning scleractinian coral reared from larvae (Baria et al. 2012). The relatively short time until onset of spawning (≤ 4 yrs) observed for *A. palmata* shows that recovery of degraded coral populations by enhancing natural recruitment rates may be practicable if outplanted colonies are able to rapidly contribute to the natural pool of larvae.

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