Phuket Marine Biological Center Special Publication 20 125–136 (1999)

CORAL TRANSPLANTATION: A USEFUL MANAGEMENT TOOL OR MISGUIDED MEDDLING?
By Alasdair Edwards and Susan Clark: Centre for Tropical Coastal Management Studies, Department of Marine Sciences and Coastal Management, University of Newcastle, Newcastle upon Tyne NE1 7RU, UNITED KINGDOM:—The primary objectives of coral transplantation are to improve reef "quality" in terms of live coral cover, biodiversity, and topographic complexity. Stated reasons for transplanting corals have been: 1) to accelerate reef recovery after ship groundings, 2) to replace corals killed by sewage, thermal effluents or other pollutants, 3) to save coral communities or locally rare species threatened by pollution or land reclamation, 4) to accelerate recovery of reefs after damage by Crown-of-Thorns starfish, 5) to aid recovery of reefs following dynamite fishing, and 6) to enhance attractiveness of reefs in tourism areas. Whether coral transplantation is likely to be effective from a biological standpoint depends on the water quality, exposure and degree of substrate consolidation of the receiving area. Whether it is necessary (apart from cases related to reason 3 above), depends primarily on whether the receiving area is recruitment limited. The potential benefits and dis-benefits of coral transplantation are examined in the light of the results of research on both coral transplantation and recruitment in the Maldives. Given these findings we suggest that in general, unless receiving areas are recruitment limited, natural recovery processes are likely to be sufficient in the medium to long term and that transplantation should be viewed as the tool of last resort. We argue that there has been too much focus on transplanting fast-growing branching corals, which naturally recruit well but tend to survive transplantation relatively poorly, to create short-term increases in live coral cover, at the expense of slow-growing massive corals, which survive transplantation well but recruit slowly. In those cases where transplantation is justified, we advocate that a reversed stance which focuses on early addition of slowly recruiting massive species to the recovering community, rather than a short-term and often short-lived increase in coral cover, is more appropriate.