

MASS DIVING TOURISM A NEW DIMENSION CALLS FOR NEW MANAGEMENT APPROACHES
By Peter van Treeck and Helmut Schuhmacher: University of Essen, Institute of Ecology, D-45117
Essen, GERMANY:—Diving has become a booming branch of the tourism business. The economies
of many countries with reef-lined coasts depend on high numbers of dive tourists, and the inevitable
degradation of reefs by mechanical breakdown and impoverishment of communities is put up with
the short term gain from the tourism business. Many activities of recreational diving do not
particularly require coral reefs –any varied three-dimensional structure (*e.g.*, a wreck) may be
sufficiently attractive. The conflict between the needs of nature conservation and the economic
interests of diving tourism can be mitigated by the formation of artificial underwater attractions as
reef substitutes. Based on experiments in the northern Red Sea we propose to deposit calcium
minerals from the seawater *in situ*, by electrolysis on a template of any desired shape. After
transplantation of living coral fragments, a diverse community will develop—considerably enhanced
compared to the successive settlement by larvae. By this method, different modules can be designed and
formed on the seabed to serve special applications, such as training, environmental education,
recreation or rehabilitation. The implementation of recreational underwater parks has to follow an
ecological “seascape” concept which will be outlined.