When animal populations are eliminated from local areas by disturbance or overexploitation, recovery may depend on recolonization by dispersing larvae. Recolonization by larvae depends upon the distance from spawning populations, when spawning occurs, the direction and magnitude of currents and the length of the planktonic phase. Green abalone, *Haliotis fulgens*, populations on the Palos Verdes Peninsula in southern California showed little evidence of recovery despite adequate food supplies and a fishing closure. Drift tubes were released over the major past and present green abalone beds to investigate the dispersal potential of this species' relatively short-lived larvae. The results suggested that dispersal between isolated populations is rare during the green abalone breeding season and stressed the importance of local brood stock.

To provide local sources of larvae, 4,453 reproductively mature green abalones were transplanted during 1981-1982 to locations on the Palos Verdes Peninsula where the drift tube data indicated that the probability of larval retention on the peninsula was high. The abalones were tagged, measured, sexed and graded for gonadal condition before planting. Predator control efforts reduced the mortality associated with planting; total mortality observed after one year was less than 10%. The abalones grew and are known to have reproduced several times. Surveys of native green abalone populations on the Palos Verdes Peninsula in 1985 showed significant changes in density and size frequency distribution from previous surveys. Changes in this population will be compared with control sites not likely to be affected by brood stock at Palos Verdes. The advantages and limitations of brood stock transplants as an approach to stock enhancement will be discussed.