

Growth and Population Dynamics Model of the Solitary Sunset Cup Coral *Leptopsammia pruvoti* (Scleractinia, Dendrophylliidae) in the Mediterranean Sea

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Demographic parameters reveal relationships between organisms and their environment, and contribute to the assessment of habitat stability. Scattered information is available on the population dynamics of corals, especially for temperate species. In this study we describe growth and population turnover in *Leptopsammia pruvoti*, a dominant species in shaded habitats (sea caves and crevices) of the Mediterranean Sea, by applying age-structured demographic models. Age was determined by counting the number of annual growth bands in corallite skeletons by means of computerized tomography technology. Populations located at the extremes of the sampled latitudinal range, 890 km apart, showed similar patterns of growth and population dynamics. Linear growth rates (corallite's oral disc length, width, and oral-aboral height) decreased with age according to power functions. Age explained 83-95% of growth rates variance. Turnover time ranged from 7 to 10 years, with a maximum longevity of more than 40 years. This is nearly two times the turnover time and maximum life span recorded for another dendrophylliid solitary coral in the Mediterranean Sea, *Balanophyllia europaea*, and seven times compared to *Balanophyllia elegans* of the western coast of North America. The similarity of growth and demographic patterns of *Leptopsammia pruvoti* among distant sites may be related to the stability of the species' habitat.