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# Reef fish, ”new comers” in macro-ecology

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## Abstract

There are about 6300 species of reef associated fish. Until 2010 relatively few studies of macro-ecology were based on this data source. These fish represent, however, a very interesting model because of their diversity, geographical distribution, life history traits and phylogeny. In addition they are distributed along gradients according to island size or isolation, biogeographical regions or temperature which are essential in structuring assemblages in either terrestrial or marine realms. Large scale analyses of the distribution of these fish show a number of convergences as well as divergences with terrestrial vertebrates or freshwater fish. We will look at examples of relative abundance (rarity), endemism, the role of size and diet and predator-prey relationships. One of the fundamental distinctions in reef fish populations lies in their dispersion and colonization modes which are determined by larvae and not by adults. As a result, barriers to dispersal and the structural organization of these assemblages follows patterns which are different from those found in terrestrial or freshwater realms. Without challenging the universality of some ‘Elaws’ in ecology, the macro-ecology of these fish bring new insights on how assemblages may be determined.

**Keywords:** macro, ecology, reef, fish, ecological function, rarity

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