

THE BEHAVIOURAL ECOLOGY AND SOCIAL ORGANIZATION
OF A CORAL REEF FISH, CHAETODON CAPISTRATUS

ABSTRACT

Some 300 hours of underwater observation, as well as laboratory and field experiments indicate that Chaetodon capistratus have an interesting spacing system that is flexible and affects their social organization. The fish may be classified by their motional behaviour as relatively stationary (Residents), moving randomly (Randoms), or long ranging (Transients). The spacing system is diurnal; a different spacing system and habitat are used nocturnally. Juveniles and very large or older C. capistratus have different spacing systems. The Resident, Random and Transient system appears to be related largely to food and foraging. Preferences are shown for particular species, their size and configuration (that is, spacing and patchiness) of food. Pairing, although frequently noted in the literature, does not appear to be directly related either to mating or to holding an area. Predation was very low and apparently not directly related to holding an area. It is proposed that the physiology of the corals, their patchiness, size, species and number may be factors in the spacing system of C. capistratus.