DIEL AND DEPTH VARIATION IN THE POPULATION DENSITIES OF HERBIVOROUS FISHES

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Purpose: Determine the variation in the population densities of herbivorous fishes in relation to food resources and depth along the east and west walls of the Salt River Canyon.

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Accomplishments: The results of the study show that species diversity and abundance of herbivorous fishes decreases with increasing depth. Three families of herbivorous fishes were represented in the canyon: damselfishes, surgeonfishes, and parrotfishes. The parrotfish, *Sparisoma aurofrenatum*, was most abundant on the east wall at depths of 15 m. The surgeonfish, *Acanthurus bahanius*, was more abundant on the east wall than the west wall; the opposite was true of the closely related doctorfish, *A*. *chirurgus*. These two species have nearly identical diets; the differences may be due to competitive exclusion or habitat preference. The parrotfishes observed appeared not to utilize the food resources on the canyon walls.

Herbivorous fishes, especially species in the family *Scaridae*, are not limited to shallow depths in their distribution. The abundance of scarids decreases with increasing depth due mainly to the decrease in the quantity rather than the quality of plant foods. Certain migratory species utilize deeper areas for shelter rather than for feeding.