

# Temporal Patterns of Migration by Reef Zooplankton

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Reef zooplankton were intensively sampled over six days during a saturation dive utilizing the NOAA NULS-1 hydrolab facility at St. Croix in July, 1982. Plankton were sampled via: 1) emergence (demersal) traps placed over various types of reef substrata, 2) diver pushes of a plankton net directly over the reef (15m) and at 10m in the water column and 3) horizontal and vertical plankton net tows from the surface. The samples were collected every two hours throughout the night with more frequent sample collection around dawn and dusk and more broadly spaced sampling during the day.

While the samples are dominated by numerous species of copepods and other crustaceans, over ten additional phyla are represented. The main migratory pulse into the water column for most groups occurs in the one and a half hours following sunset. Certain species, however, exhibit considerable upward migration at sunset, while others migrate intensively just prior to sunrise.

Some species sustain a relatively constant rate of vertical migration throughout the night.

A few species are rarely captured in plankton net tows except those taken close to the reef substratum, others are found 5m above the bottom, but rarely at the surface, while migration of most can be followed to the surface through subsequent collections. The greatest diversity and abundance of organisms is captured by all sampling methods during the night. During the day, however, emergence traps and surface tows capture very little zooplankton while large numbers are captured just over the reef and at 5m above by net pushes. Many of these species are captured in emergence traps prior to sunrise as they migrate into the water column for the day.