

**FORAGING PATTERNS OF CHAETODONTID AND
POMACANTHID FISHES AT ST. CROIX**

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Chaetodontid and Pomacanthid foraging patterns were examined by observing feeding *in situ*, and analyzing stomach contents. These families feed on abundant reef resources, coral and sponges, which few other fishes eat.

Chaetodon capistratus browsed a diverse array of anthozan corals, especially scleractinians, and captured other prey. Prey were ingested at a high rate (27 \pm bites/5 min) and processed quickly. *C. aculaetus* was a predator of cryptic invertebrates, particularly serpulid polychaetes and crustaceans, found on the undersurfaces of corals or ledges. *C. aculaetus* fed at a slower rate (12 \pm bites/5 min) on more calorific prey that required longer handling times. The species co-occurred, and even though they both preferred fish eggs when available, other food resources were partitioned enough to avoid competition. The generalized foraging behavior of *C. capistratus* is adaptive for diet shifts according to prey availability, as evidenced by its high abundance and broad distribution in the western Atlantic. Conversely, the more specialized species, *C. aculeatus*, is more restricted in distribution and tends to occur on well developed coral reefs.

The pomacanthids, *Holocanthus ciliaris*, *H. tricolor*, *Pomacanthus arcuatus* and *P. paru*, were facultative sponge specialists. *Holocanthus* species lived and fed within specific territories, whereas *Pomacanthus* species ranged over larger, less defined reef areas. The diet of *H. tricolor* was mostly sponges (98% of diet volume), predominantly large, brightly colored species (65% of sponges eaten), and the rest were encrusting species. *H. tricolor* took 10 \pm bites per 5-min period, whereas *Pomacanthus arcuatus* fed at a slower rate (6 \pm 2

bites/5 min). *P. arcuatus* also fed mostly on macrosponges and occasionally on the gorgonid *Pseudoplexaura*.

Chaetodontid and pomacanthid fishes are evolutionarily advanced species, with specialized feeding structures and behaviors that allow them to eat prey which are noxious and toxic to most other reef fishes. By ingesting significant quantities of corals and sponges, these fishes affect the growth, abundance, and distribution of the major structural components of Caribbean coral reefs.