

MATING SYSTEMS OF CHAETODONTID AND POMACANTHID FISHES AT ST. CROIX

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Reproductive behavior and mating systems of two Caribbean chaetodontids, *Chaetodon aculeatus* and *C. capistratus*, and one pomacanthid, *Holacanthus tricolor*, were investigated at St. Croix.

Chaetodon aculeatus forages solitarily during the day and mates a nearby individual at dusk. Spawning events occurred within 15 min of sunset. Individuals were monogamous and pair formation always occurred each evening even without spawning. Spawning and pair formation always occurred over the same location, a large antipatharian or gorgonian. Upon meeting each evening, parallel lateral displays were given and returned. Courtship lasted between 10 and 15 min and culminated with close carrouseling, anal nudging, and one gamete release per evening.

C. capistratus is highly monogamous, and pairs forage together in a home range during the day. All reproduction (N = 9) occurred within 20 min of sunset, with the majority (7) climaxing just before sunset. Courtship behavior of *C.*

capistratus lasts 2-6 min, and includes the same display repertoire exhibited by *C. aculeatus*. Each pair spawned only once per evening, and it appeared that reproduction occurred at the same site each evening.

Holacanthus tricolor forages solitarily during the day on male territories. Spawns occurred within 20 min of sunset (N = 8). *H. tricolor* is a polygynist, and a dominant male spawns with up to three females which live in his territory, but females spawn only once per night. Courtship behavior by *H. tricolor* was more involved and females are courted and spawned in succession. Displays include parallel displays, circling, lateral swimming, and anal/abdominal nudging. Females are hesitant, seldom returning displays and often require males to repeat courtship displays before spawning. Our data suggest that *H. tricolor* is a protogynous hermaphrodite.

Differences in mating systems are related to foraging patterns and resource abundance.