

Diversity in the Reproductive Behavior of Wrasses (Labridae) at a Resident Spawning Aggregation Site

La Diversidad en el Comportamiento Reproductivo de los Peces (Labridae) a un Sitio Residente Desove Agregación

La Diversité dans le Comportement Reproducteur de Labres (Labridae) sur un Site Resident Frai Agrégation

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EXTENDED ABSTRACT

At least twenty species of wrasses (Labridae) mate in temporary resident spawning aggregation site at Finger Reef, Guam. I observed and recorded the reproductive behavior of species (number in parentheses) in the following genera: *Anampses* (1), *Cheilinus* (4), *Cheilio* (1), *Epibulus* (1), *Gomphosus* (1), *Halichoeres* (2), *Hemigymnus* (2), *Macropharyngodon* (1), *Novaculichthys* (1), *Oxycheilinus* (1), *Stethojulis* (1), and *Thalassoma* (4). Mating systems varied from lek-like to harem, promiscuous or group, and facultative monogamy. Some species utilized only a single mating system while others were variable depending upon the number of males and females present. Regardless of the mating system used, all species utilized a suite of courtship behaviors, and spawned pelagically with a release of gametes after an ascent into the water column. Details of eight of species are described here. The rate, height, and mechanics of the ascent varied between species and between mating systems. Ascents of *Cheilinus trilobatus*, *Epibulus insidiator*, and *Oxycheilinus unifasciatus* were relatively slow and pairs often spiraled high into the water column. The ascent rate of *Gomphosus varius* was slow to moderate, while *Hemigymnus melapterus* ascents were high and extremely rapid. *Cheilio inermis* and *Thalassoma hardwicke* spawned in pairs but more commonly in groups. Paired ascents for both species were usually quite rapid as well, with *C. inermis* spawning just above the substratum and *T. hardwicke* spawning high in the water column. Similarly, group spawns by *C. inermis* were just above the substratum while those of *T. hardwicke* were near the surface. *Halichoeres trimaculatus* and *Stethojulis bandensis* spawned in groups only, with multiple rapid dashes just above the substratum. A comparison of similarities in behavioral repertoires of these species is given in Figure 1. Males and females engaged also in behaviors intended to maximize reproductive success while avoiding egg predation by egg predators at the site.

Figure 1. Non-parametric multi-dimensional scaling (MDS) plot of similarity in the behavioral repertoires of eight species of wrasses (Labridae) at a resident spawning aggregation site. Species codes are: CHT- *Cheilinus trilobatus*, CI- *Cheilio inermis*, EP- *Epibulus insidiator*, GV- *Gomphosus varius*, HM- *Hemigymnus melapterus*, HT- *Halichoeres trimaculatus*, SB- *Stethojulis bandensis*, TH- *Thalassoma hardwicke*.

