

Hampster Balls, Voyeurism, and Video: A Method of Monitoring Reproductive Behavior in Coral Reef Fish

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Abstract

In situ studies of fish behavior can be challenging. The expense and limited bottom time of underwater research make each observation precious, while the three-dimensional environment of a fish precludes the use of many terrestrial experimental techniques. For these reasons, many *in situ* behavioral studies have been just that—observational studies, rather than manipulative experiments. To overcome these difficulties, we developed a method of containing and presenting potential mates and predators to male damselfish and utilized underwater digital video to capture the reaction of the study fish. The requirements of the study were: a means to contain predators and potential mates in a way that visual and chemical cues would be undisturbed and enough fresh water would flow through the container to keep the fish alive; a means of presenting the fish to the subject male without the diver approaching the subject too closely; and, a means of recording subject reaction to the presented fish. The solution we developed was to place the fish in modified clear hamster exercise balls that could be attached to a long PVC pole, and to use video to monitor subject reaction. These video observations were backed up by diver observations, and the effect of diver and video camera on fish behavior was attenuated by an acclimation period. Save for a single unpleasant barracuda interaction, the method was successful in allowing for a manipulative experiment investigating the tradeoff between mating and risk of predation in a coral reef damselfish.