

Male Territory Swamping Increases Courtship Success in a Lek-like Mating System of a Fish Spawning Aggregation

Territorio Masculino Inundando Aumenta el Éxito de Cortejo en un Sistema de Apareamiento Similar a Lek de una Agregación de Desove de Peces

Inondation du Territoire Masculin Augmente le Succès de la Cour dans un Système d'Accouplement Semblable à Lek d'une Agrégation de Frai de Poissons

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EXTENDED ABSTRACT

A number of reef fish species that form spawning aggregations utilize a lek-like mating system in which males establish temporary courtship territories that they defend against rival males while attracting females to spawn. At a resident spawning aggregation site located at Finger Reef, Guam, male *Cheilinus trilobatus* (Labridae) holding territories along the outer edge of the site experience significantly greater courtship success compared with males holding territories within the site's interior. Males holding edge territories are always successful in defending these territories from intruding males, even when they are engaged in courtship. Recently, however, increases in the number of males present at the spawning aggregation site have resulted in an increase in the number of territory intrusions during courtship periods. These intruders "swamp" a normally successful male's territory and make defense difficult. Multiple intruders not chased away or simply returning after being chased then court and spawn with females that arrive within the territory. The number of swamping males recorded at intervals over a month-long period at the Finger Reef site ranged from 4 - 14 males, and the number of successful spawning attempts ranged from 4-19 (Table 1). Females gathering at the outer edge of the spawning aggregation site seem to prefer mating with any males that are located there rather than just those males defending temporary territories at the outer edge. Presumably, this is because location, rather than the male at that location, is important. Females may take advantage of the presence of any male encountered at that location and spawn with him during the limited time window that promotes dispersal of eggs by tidal currents after spawning occurs rather than risk less optimal conditions while waiting to be courted by a territorial male who is otherwise engaged in defense of his territory against intruding swamping males. Costs to the territory holder include lost courtship opportunities because of territorial interactions that interrupt courtship and reduced reproductive success because intruding males court successfully with females that visit the male's territory at the latter's expense.

KEYWORDS: Behavior, female choice, reef fish

Table 1. Spawning success of territory swampers in January and February 2018.

Date	No. swampers	No. spawns	Time window	Tide
2018/01/19	10	14	1232-1326H	falling
2018/01/22	2	4	1146-1330H	falling
2018/02/12	14	13	1125-1440H	falling/rising
2018/02/19	12	19	1125-1414H	falling
2018/02/23	4	5	1103-1353H	high/falling
2018/02/26	4	10	1145-1423H	falling