

NOTA:

FIRST RECORD OF THE BEAUBRUMMEL (*STEGASTES FLAVILATUS*) IN REEF HABITATS OF MALPELO ISLAND

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RESUMEN

Primer registro de la damisela bicolor (*Stegastes flavilatus*) en ambientes arrecifales de la isla Malpelo. El género *Stegastes* (familia Pomacentridae) tiene una distribución particular en el Pacífico Oriental Tropical, con dos especies ampliamente distribuidas en toda la región, y cinco especies restringidas a las islas oceánicas o al extremo boreal del trópico. Durante un estudio de las especies de este género presentes en ambientes arrecifales de la isla Malpelo, registramos, por primera vez para la isla, a *Stegastes flavilatus*. Esta es una especie rara en Malpelo, en donde *S. arcifrons* y *S. beebei* son dominantes. La cuarta especie presente en Malpelo, *S. acapulcoensis*, puede también considerarse como rara, aunque ligeramente más abundante que *S. flavilatus*.

PALABRAS CLAVE: Isla Malpelo, Peces, Pomacentridae, Primer registro, *Stegastes flavilatus*.

In the Tropical Eastern Pacific (TEP), the geographic distributions of damselfish species of the genus *Stegastes* (Pomacentridae) show an intriguing pattern (Allen and Woods, 1980): some species (e.g., *S. acapulcoensis* and *S. flavilatus*) are widely distributed over the entire region, primarily on continental coasts, while others (*S. arcifrons*, *S. beebei*, *S. baldwini*, *S. leucurus* and *S. redemptus*) are narrowly distributed, some of them restricted to the widely separated offshore islands in the region (Galapagos, Isla del Coco, Malpelo, and the Revillagigedos). These species show few morphological differences and share similar ecological and life history traits. They are highly territorial, have long adult life spans, are demersal spawners, and have high dispersal potential (Pelagic Larval Duration [PLD]: 23-30 days; Victor and Wellington, 2000; Meekan *et al.*, 2001; Robertson and Allen, 2008). This note represents the first record of *S.*

flavilatus for Malpelo and examines the current status of *Stegastes* species in reef habitats of Malpelo Island.

Malpelo (4°0'N, 81°36.5'W) is a volcanic island located 365 km from the nearest point on the American continental shore. It is small –about 1.2 km² of emerged surface– with steep slopes and rocky shores all around. Some coral reef formations are located on the northern side of the island, and patches of corals and single colonies are unevenly distributed around the island between 1 and 30 m depth (Garzón-Ferreira and Pinzón, 1999).

To assess the population densities of the different *Stegastes* species present on coral reef formations of Malpelo, 52 belt transects (20 x 2 m), at different depths (5-30 m) and at different locations were conducted (El Arrecife, n = 23; Pared del Fantasma, n = 16; Pared del Náufrago, n = 9; La Nevera = 4). Censuses took place during two fieldtrips in December 2010 and February 2011. Additional presence/absence data of *Stegastes* species at different locations around Malpelo were collected during 32 additional dives (two observers, one hour each dive, both trips combined).

Four species of *Stegastes* are found at Malpelo (Figure 1). Of these, by far the most abundant in coral reef habitats is *S. arcifrons*, which in some locations reaches densities of up to 10 inds. m⁻². The second most abundant species of *Stegastes* at Malpelo is *S. beebei* (Table 1). *Stegastes acapulcoensis* and *S. flavilatus*, none of which were recorded inside transects, can be considered rare since both their abundance and frequency of observation were very low (Table 1). The single record of *S. flavilatus* consisted of two juveniles located on the shallow portion of El Arrecife (8 m depth), sighted in December 2010. In February 2011 another juvenile was spotted in the same area (probably one of the two individuals sighted during the previous trip).



Figure 1. *Stegastes* species found in Malpelo: a) *S. acapulcoensis* (center) and *S. arcifrons* (right and background) at El Arrecife, b) *S. flavilatus* (juvenile) at the shallower sector of El Arrecife and c) *S. beebei* at Pared del Fantasma.

Table 1. Densities of *Stegastes* species at different depths in coral reef habitats at Malpelo Island during December 2010 and February 2011. Data represent average values \pm 1SD (n = 52 transects); nc = not considered. * Maximal number of individuals sighted during the same cruise, outside of transects, all reefs combined.

Species	Average density \pm SD (specimens/40 m ²)	Maximal number of individuals sighted*
<i>Stegastes acapulcoensis</i>	0	18
<i>S. arcifrons</i>	58.5 \pm 41.8	nc
<i>S. beebei</i>	1.1 \pm 2.0	nc
<i>S. flavilatus</i>	0	2

Previous authors have included species of *Stegastes* on their lists of the fish fauna from Malpelo, but none included *S. flavilatus*. The first list by McCosker and Rosenblatt (1975) included only *S. arcifrons* and *S. beebei* (both as *Eupomacentrus*). Subsequent lists (e.g. Prael, 1990) reported one or both species (as *Stegastes* or *Eupomacentrus*), while Rubio *et al.* (1992) added *S. acapulcoensis* to the list of the fish fauna from the island. Finally, Rodríguez-Ramírez *et al.* (2007) compiled a list of the fish species recorded at El Arrecife, including *S. beebei* (as *S. leucorus*). To our knowledge, and considering the comprehensive work of Robertson and Allen (2008), ours is the first documented record of *S. flavilatus* for Malpelo Island.

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