"FEISTY" DAMSELFISHES STRUCTURE AGONISTIC INTERACTION NETWORKS IN CORAL REEFS

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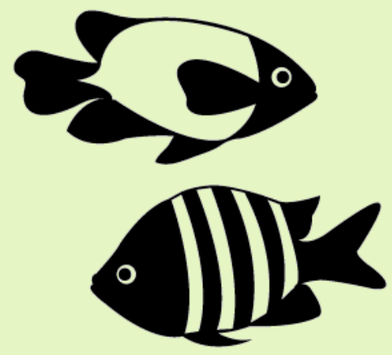
2020



Are you familiar with the quote "deep down (inside), we are all the same"? In the depths of coral reefs, aggressive disputes among fishes are common, and occur in very similar frequency, regardless of the reef location. Despite being distributed across all tropical oceans, reefs are not all the same. For instance, reefs in Brazil are home to lower fish diversity when compared to reefs in the Caribbean. These, in turn, have lower species richness than the beautiful and complex Indo-Pacific reefs, where diversity reaches its peak.

Within reefs, amid coral branches, colorful tubular sponges and delicate algae, fishes angage in aggressive disputes. These are known as agonistic interactions, and might represent competition for resources, such as food or space. And space is a fundamental resource for territorial species, which is the case for many damselfishes (Pomacentridae speacies).

Plectroglyphidodon lacrymatus, Moorea - Photo: SR Floeter; *Pomacentrus yoshii*, Ilhas Marshall - Photo: LA Rocha; *Neoglyphidodon nigroris*, Palau - Photo: LA Rocha; *Stegastes rocasensis*, Fernando de Noronha - Photo: LA Rocha; (Respectively)

Researchers used cameras to sneak peek fish agonistic interactions in seven reefs distributed across a 34.000 km longitudinal gradient of biodiversity, from Bali, in Indonesia, to Rocas Atoll, in Brazil. After perusing over 87 hours of video footage to quantify the number of agonistic interactions among fishes, we conclued that the frequency with which these "feisty" fishes chase others away is very similar, regardless of the reef site and its local fish species richness.

Despite large differences in species richness, the structure of agonistic interactions is very similar across locations, thanks to those "feisty"- territorial and herbivorous damselfishes. Atlantic damselfishes differ from those of the Indo-Pacific, yet they share characteristics, such as territorial behavior and herbivorous diet, which places this group at the core of the interaction networks on coral reefs. Therefore, in the depths of reefs damselfishes behavinge "the same" help to unravel striking similarities across quite distinct environments.

Reference

Fontoura, L., Cantor, M., Longo, G.O., Bender, M.G., Bonaldo, R.M. & Floeter, S.R. 2020. The macroecology of reef fish agonistic behaviour. Ecography. 43: 1-13, doi: 10.1111/ecog.05079