

**The Purr of the Lionfish:
Sound and Behavioral Context of Wild Lionfish in the Greater Caribbean**

**El Ronroneo del Pez León:
Sonido y Comportamiento de Pez León Salvaje en la Región del Gran Caribe**

**Le Ronnement du Poisson-Lion:
Contexte Sonore et Comportemental du Poisson-Lion Sauvage dans la Grande Caraïbe**

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ABSTRACT

Passive acoustic technology has become a useful and cost-effective method to collect data with very high temporal resolution that can be used to detect the presence, distribution, and remotely monitor soniferous marine biodiversity. In order to maximize the potential of bioacoustic and soundscape research in the oceans, understanding the association between the different realms of sound sources, species-specific calls and behavioral context of sound production are fundamental. The ability to produce sounds in laboratory conditions has provided much knowledge regarding the association of particular sounds with species, however behaviors of coral reef fishes may be different in the wild. A previously unknown vocalization was associated with a behavioral display of lionfish (*Pterois* spp.) by recordings with synchronous audio and video at deep coral reefs in both Puerto Rico and the Florida Keys. A pulse train of variable total length that sounds like an intermittent purr was associated with a display between pairs of lionfish. This sound has a constant interval between short pulses at low frequency and low amplitude. This sound may be classified as courtship related since it was observed between two lionfish that appeared of dissimilar size (presumably male and female), engaged in following and circling displays. The sound occurred during afternoon hours, prior to sunset. This is the first reported sound produced by lionfish in association with a behavioral display in the wild. Low sound pressure levels suggest this is a quiet signal for communication between individuals in close proximity. With this description passive acoustic datasets collected on coral reefs can be verified for the presence of lionfish including areas deeper than the limits posed to divers or in the dark.

KEYWORDS: Acoustics, behavior, lionfish

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