

# ***Sciaenops ocellatus*: Daily and seasonal sound variation during spawning in aquaculture.**

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Since the decline of their natural population, red drums (*Sciaenops ocellatus*) were introduced in aquaculture and many studies have been conducted to improve their farming. This sciaenid is known to produce sounds, especially during the reproductive period, but very few studies have investigated this aspect of their biology. Only males have the ability to produce sounds.

This study aims to describe the sound production during a spawning season for fishes in captivity. Specimens of *Sciaenops ocellatus* were recorded during the spawning season at the research and aquaculture station IFREMER in Martinique. Hydrophones were placed in tanks containing either a heterosexual group of fishes or a male isolated with a female. The heterosexual group has been recorded at a rate of 1.5min every 30 minutes during 3 months. Couples have been recorded at the same rate but during 3 weeks. The following acoustic characteristics were measured: number of sounds per time unit, number of pulses in a sound and pulse periods. Sounds were mainly produced at night. In the heterosexual group, the sound production activity, or chorus, began to increase after 21:30 with a peak at 23:00. Call number then decreased and stopped at approximately 1:00. The daily number of sounds and the number of pulses per call are significantly higher during the reproductive period than outside. For the couples the activity began earlier, between 18:00 and 20:00, with a peak around 21:00 and 22:00. Then sounds stopped generally around 23:00. Sounds seem to be an integral part of the reproductive behavior of *Sciaenops ocellatus*.

Acoustics could be used in aquaculture as a monitoring tool which could provide a non invasive way to collect information about the sexual status and maturity of that species.

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