
The soundscape of the shallow water of a Mediterranean Marine Reserve: the case of Capo Grecale in Lampedusa island

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Abstract

An underwater acoustic recorder was positioned inside the integral marine reserve of Capo Grecale in Lampedusa (35.525°N, 12.620°E) at 150 m from the cliff (depth 20 m). Here we presented data collected from June to September 2013 in the frequency range 8-96000 Hz with a duty-cycle of 10%. Data were analyzed both manually than using the mean power spectrum and the acoustic index complexity.

Noise in the low frequency, below 2kHz, is positively correlated with the wind intensity. Below 3 kHz, acoustic activity of fish is present especially after the sunset.

At the upper frequency , 3-96 kHz, the soundscape is dominated by the snapping shrimps that presents an evident circadian cycle with an higher number and a powerful signals during the sunset until the sunset. The snapping shrimps activity is negatively correlated with the wind intensity.

Even if the acoustic monitoring site is an integral reserve, at least in the 8% of wave-file (2 minutes long) the passages of vessel traffic were recorded.

Keywords: marine soundscape, vessel traffic noise, circadian cycles of bioacoustic signals, fish, crustaceans

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