

SEASONAL INFLUENCE OF NAUTICAL TOURISM IN MARINE SOUNDSCAPE OFF CABO FRIO ISLAND

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Marine soundscape is composed by all sounds from certain marine environment. It can be split into biophony (biotic activities), geophony (abiotic activities) and anthrophony (human activities). Nowadays, soundscape characteristics are considered a great information source for ocean and coastal management. For example, just analyzing draw soundscape data is possible makes decision about better period of year for seismic activities. However, many anthropogenic sounds have seasonal and temporal patterns that can influence marine organisms, ascetaceans, fish and some invertebrates. This study aims to investigate the seasonal influence of nautical tourism in marine soundscape off Cabo Frio Island, Arraial do Cabo, RJ, Brazil. Acoustic data were recorded from February 2018 to January 2019 with duty cycle of 20 (12 minutes per hour). Frequency range (0.1–1.5 kHz) was selected because it is more influenced by anthropogenic noise. In addition, were recorded information about nautical tourism (as boats and people number per day at Cabo Frio Island). It was recorded approximately 296 days, totaling circa 7 thousand hours. For frequency range analyzed, average power was of ~ 71 dB with ~ 4.2 dB of standard deviation, minimum of ~ 53 dB and maximum of ~ 105 dB. It was confirmed that holidays, weekends and high season are more noisy than other period of year. We noted a daily pattern, where average power increases near to twilight (after dawn and dusk), probably, associated to fish chorus. Soundscape pattern recorded in this frequency range at daytime corresponded to periods of intense touristic and fishing activities in the Cabo Frio region. This anthropogenic noise represents a potential risk and could interfere in biological activities. Considering the advance of researches related to soundscape ecology, it will be possible to develop better environmental management policies for the maintenance of the natural characteristics of the study area.

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