RevMexAA (Serie de Conferencias), **00**, 1–1 (2023)

ABSTRACT ONLY

EVALUATION OF THE IMPACT OF ARTIFICIAL LIGHT ON THE NOCTURNAL LANDSCAPE AND SOUNDSCAPE OF LAS BRUJAS (CANELONES, URUGUAY)

F. Reichmann[1], L. Lagaxio[2], A. Sosa[3], M. Arim[1] & A. Canavero[1]

[1] Departamento de Ecología y Gestión Ambiental. CURE, UdelaR (flor.reichmann@gmail.com)
[2] Sociedad Civil
[3] PDU Ciencias Físicas, CURE, Udelar

Increasing the emission of artificial light at night has well-documented negative effects on the quality of natural dark skies and changes the natural light/dark cycles, on which many species depend. Dark skies are relevant as natural values and for their cultural and heritage significance. This issue is just beginning to be perceived as a problem by decision makers and the civil society. The present work is a response to the concern of residents of Las Brujas (Canelones, Uruguay) regarding public lighting installation in July 2022. This research analyzes the nocturnal landscape before and after the placement of public lighting and its impact over the natural soundscape. Soundscapes are defined as the set of sounds generated by the elements that compose an environment. Through soundscape analysis, it is possible to estimate the response of organisms to anthropogenic pressures and to account for the structure and dynamics of the environment. For analyzing the nocturnal landscape, the sky brightness was measured at impact and control sites using an SQM photometer. From measurements obtained at 17 sampling points, sky brightness maps before and after the impact were made. For the analysis of the soundscapes, a Before- After, Control-Impact sampling design was implemented. A passive acoustic monitoring (PAM) was carried out, in which the soundscapes of 5 sites (1 impacted and 4 control sites) were recorded before and after the implementation of the new public lighting. By performing an analysis of variance, significant differences were found in the sky brightness before and after the public lighting was operational. However, the analyzed acoustic data shows that there are no significant variations in the acoustic landscape despite the alteration of the nocturnal landscape. Hypotheses that can explain this phenomenon are discussed and recommendations for the management of the socio-environmental problem are proposed.