

LICHEN COMMUNITIES: BIOINDICATORS OF ENVIRONMENTAL PURITY, A
TOOL TO PROMOTE THE CONSERVATION OF RELICTS FROM THE
VALDIVIAN FOREST AND LOCAL GREEN SPACES OF THE
CITY OF CONCEPCION

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Lichens can be used as bioindicators of the environmental purity index (IPA) by behaving as biological sensors in the face of different anthropic effects, including atmospheric pollution. The City of Concepción is characterized by having the Campus of the University of Concepción (UdeC) a space of extensive green areas that partly perimeter with remnants of the Valdivian temperate forest of the Nonguén National Reserve, and the deciduous forest of the Cerro Caracol Metropolitan Park, both historical and natural heritage of the Biobío Region. The environmental purity index (IPA) was evaluated using the lichen communities of the City of Concepción as the first lichenological baseline of the urban and natural historical center. Performing a mixed sampling and mapping in 201 stations (phorophytes) throughout the city of Concepción using squares and parks, considering the various disturbances within the landscape matrix, establishing variance and cluster analysis; determining four (4) contamination zones based on IPA. Finally, having the area with the highest IPA the UdeC campus and the area or liquénic desert to the central and urban area of the city. Establishing the foliose biotype within Parmeliaceae [*Flavopunctelia* (Krog) Hale, *Parmotrema* A. Massal., *Punctelia* Krog.] with greater abundance and richness, followed by Physciaceae, Teloschisteaceae, Haemmatomateaceae,, Ramalinaceae, Arthoniaceae, Graphydaceae and Cladoniaceae, confirming the potencial ecological and lichenological of the green areas of the UdeC Campus. Supporting the vision of communion: science-nature of the UdeC by guaranteeing green and natural spaces, containing biological diversity, as a tool to raise awareness, educate and manage the conservation of local green spaces as natural lungs of the city and this model can be replicated in different communities at a regional to international level, guaranteeing environmental purity for future generations. (Thanks: National Research and Development Agency: ANID)