Influences of the natural environment on habitat preference for lichens in Western Dronning Maud Land, Antarctica.

Gabrielle Ayres

The biogeography of lichens in part of Western Dronning Maud Antarctica was used to elucidate Biology-Gemorphological interactions. Two continental nunataks, Vesleskarvet and Robertskollen, were selected to characterise climatic, topographical and geomorphological variables and their impact on lichen colonisation at a fine resolution. Small-scale (sub-metre) topographical features were identified and classified together with the specific lichen species that colonised them. The methodology employed included the use of structure from motion techniques to create three-dimensional models for the display of the habitat preference on specific clasts. Small-scale topographical features provide sheltered locations that serve as microhabitats that support lichen colonisation. Moist and sheltered microhabitats are the most suitable for colonisation, with habitat preferences being noted to be specific to a particular lichen species. The predominant species, *Usnea sphacelata* and *Umbilicaria decussata*, colonised sheltered depressions in the topography, specifically beneath overhangs. Finer topographical features such as cracks, pitting and tafoni were found to be colonised by other lichen species. This study shows preferential colonisation strategies of lichens in Antarctica and, thus, these habitats are a suitable proxy for monitoring environmental changes.