**ARE URBAN LICHEN COMMUNITIES IN SUCCESSIONAL STASIS?**

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Urban green spaces may contain a wide range of potential habitats and environmental gradients and given the many benefits to human health and well-being, there is a growing interest in maximizing their biodiversity potential. However, the ecological patterns and processes in urban areas are poorly understood. Using a widely applicable ecological survey method, we sampled epiphytic lichen communities, important bioindicators of atmospheric pollution, on host *Quercus* trees in parks of London, UK, to test if common patterns relating to lichen diversity are mirrored in urban green spaces. We found lichen diversity to be dependent on host tree species identity, and negatively related to local tree crowding. In addition, we found a strong negative effect of tree size on lichen diversity, leaving large trees as unexploited niches. A novel network analysis revealed the presence of only pioneer communities, suggesting the lichen communities are being held in successional stasis, likely due to the heritage effects of SO2 emissions and current nitrogen pollution and particulate emissions. Our study highlights that jointly assessing species richness, community structure and successional stage can be key to understanding diversity patterns in urban ecosystems. Subsequently, this may help best determine the optimum conditions to facilitate biodiversity increase within cities.