

Mining lichen diversity: systematics as a framework for identifying ‘known unknowns’ in Alaska (U.S.A.)

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Lichens are a species-rich group of symbiotic organisms found in every ecosystem on the planet. Relatively few areas of the globe have had the benefit of comprehensive lichen inventories and many species remain to be discovered. In a recent project in southeast Alaska (U.S.A.) we inventoried lichens and lichen-dwelling parasitic fungi in the 53 km² Klondike Gold Rush National Historic Park, largely without the benefit of a written flora and consolidated identification keys. We documented a total of 766 species, the largest ever found for a comparable study area in the New World (Spribille et al. 2010). More remarkably, fully 10% of the documented species were either new to science or in a category we called ‘known unknowns’ – species with an identity but currently without a name, for a variety of reasons. Lichen inventory in poorly known regions is an exercise in observational feedback that requires an organic interaction with applied systematics and a deep knowledge of the global literature dataset. It is critical that the nuances of the systematic decision-making process are explained to conservationists and land managers with an eye to fully accounting for biodiversity and adequately protecting species of unresolved taxonomic status.

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