

Freshwater fungal diversity along an anthropogenic gradient in Hawaiian streams

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Aquatic fungi play a pivotal role in detrital decomposition in freshwaters. The Hawaiian archipelago is the most geographically isolated group of islands on Earth, and knowledge about its aquatic fungal diversity is scarce. We assessed the diversity of fungi colonizing Hau leaves (*Hibiscus tiliaceus*) placed in 11 streams on Oahu, representing a gradient of anthropogenic pollution. Fungal diversity was assessed by high throughput sequencing of the internal transcribed spacer 2 region (ITS2) of rDNA. The majority of operational taxonomic units (OTUs) belonged to Ascomycota, and several species are new records for the Hawaiian archipelago. The number of OTUs varied by an order of magnitude between streams, and the structure of fungal communities also differ significantly between streams. Variables indicative of human influence, namely nutrient concentration in stream water and anthropogenic land cover, were strong correlates in the community ordination. Overall, human disturbance seems to be a driver of structural variability of fungal communities in Hawaiian streams.