



Counting microbial species: how diverse is microbial diversity?

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The extent of microbial diversity in nature remains unknown for at least two reasons. First, it is not clear what constitutes microbial species. Second, whatever the operational taxonomic unit, few attempts have been made to determine their number in the environment. The result is a lack of empirical measures of microbial diversity, whether global or local, pro- or eukaryotic. This creates a rather impossible situation for biodiversity research. Individual projects are limited in resources and operate with partial species lists, typically below a few hundred (of Latin names or rDNA sequences). Since the entire diversity is not known, it is also not known if the diversity captured in any particular study represents essentially all - or virtually none - of the total. This calls for measuring the number of microbial species, however defined, per sample, habitat, and biosphere.