

## On inference concerning biodiversity

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Logarithmic series distribution is a commonly used distribution in the study of the index of biodiversity. This is a discrete distribution having a real parameter  $\theta \in (0, 1]$ . There are other indices of biodiversity like Simpson's index, Shannon–Wiener index, Brillouin index, etc. for which tests have been proposed to compare the equality of biodiversity. However, for the original index, no tests have been proposed in the past to compare the indices. This paper proposes CI (confidence interval) and tests for index of biodiversity based on one and two sample cases when the underlying distribution is the logarithmic series distribution. Extensive simulation has been carried out to compare the coverage probabilities with the confidence level for small samples and the results indicate that they are in close agreement. Thus it can be used even for small samples, even though the CI relies on large sample theory.