

Solutions

2.1 A Compare surveys with similar area, effort, season and identification rules. A diversity index is meaningful only with its formula and conventions specified. Habitat fragmentation can affect movement and gene flow even when total area changes little.

2.2 All four species have nonzero counts, so richness=4.

2.3 False. An index cannot by itself explain the cause of a difference. A newly recorded species may reflect improved observation rather than a recent ecological arrival.

2.4 species richness. species richness means The number of species recorded.

3.1 A richness2, B richness3; largest shares90% and40%. B is more even in these samples. Comparable effort and detection matter; a zero observation does not prove absence.