# MODEL ABUNDANCE SPECIES DATA: PUTTING THE KEY DECISION ABOUT ZERO DISTRIBUTION BACK TO ECOLOGISTS

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Patterns of species absence may have strong consequences on model fitting. We explore 3 different patterns of zero distribution: a) consider zero when the species is not seen (assuming it is not in the population), b) consider zero only when the species is not seen in a sample but it has been seen in the neighbourhood (assuming sample errors), and c) use missing values for all species not seen (assuming optimal detection). The observed vectors are random independent samples of birds composition from 53 large and 41 small fragments at the Atlantic Selva in NE Argentina. The elements of the vector are random Poisson variables, possibly correlated and so the full vector must be considered as a multivariate observation. We used bootstrap on vectors to test means of species abundance contrasting large and small fragments, with MULTTEST of SAS 9.1. The results show no difference in species abundance when pattern of zero is (c) and so, based on this we may accept the hypothesis of equal species composition. When the pattern is (b), there are five species more abundant in small fragments than in large ones. When the pattern is (a) there are nine species with significantly different abundances. Disagreements between multiple tests are due to patterns of zero distribution. The question goes back to ecologists because from the biometry we may call the attention, but the best decision relays on the data and how they have been obtained.