Julian Burgoff

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Analysis of Environmental Data

Week 6 Reading Questions

1. A bird watcher spreads seeds across their yard to attract birds to their property. They want to know if the birds that visit their yard have a preference for one of the two types of seeds that they typically use. The bird watcher spreads seeds from two different species of plants across their yard, Polyscias fulva (pol) and Pseudospondias microcarpa (psd), and records the number of seeds that are either taken or not-taken for each seed species. The null hypothesis is that the birds show no preference for either seed species (the predation rates between the two species of seeds are the same).

2. rm(list = ls())
   pol_n_predation = 26
   pol_n_no_predation = 184
   pol_n_total = pol_n_predation+pol_n_no_predation
   pol_predation_rate = pol_n_predation/pol_n_total

   psd_n_predation = 25
   psd_n_no_predation = 706
   psd_n_total = psd_n_predation+psd_n_no_predation
   psd_predation_rate = psd_n_predation/psd_n_total

   print(
    paste0(
     "The seed predation rate for Polyscias fulva is: ",
     round(pol_predation_rate, digits = 3)))

   print(

   paste0(

    "The seed predation rate for Pseudospondias microcarpa is: ",
     round(psd_predation_rate, digits = 3))

Species	Any taken	None taken	N	Predation rate
Polyscias fulva (pol)	26	184	210	0.124
Pseudospondias microcarpa (psd)	25	706	731	0.034

3.

4. pol_n_predation = 26

pol_n_no_predation = 184

pol_n_total = pol_n_predation+pol_n_no_predation

pol_predation_rate = pol_n_predation/pol_n_total

psd_n_predation = 25

psd_n_no_predation = 706

psd_n_total = psd_n_predation+psd_n_no_predation

psd_predation_rate = psd_n_predation/psd_n_total

seed_ratio= pol_predation_rate/psd_predation_rate

seed_ratio