

Opatovsky, I., Gavish-Regev, E., Weintraub, P. G. and Lubin, Y. 2016. Various competitive interactions explain niche separation in crop-dwelling web spiders. – Oikos doi: 10.1111/oik.03056

Appendix 1

Matlab model for calculating the average number of cells containing a single individual. N_{tot} = number of all possible combinations of spiders per plot for each sample, N_i = number of cells (plots) with one individual, k = total number of cells (plots), n = number of individuals in the sample, j = number of cells with no individuals in the sample.

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n=a ;
k=b ;
Ntot=nchoosek(n+k-1,k-1) ;
Ni=zeros(1,k+1);
if n>k
for ii=1:k;
i=ii-1;
j_min=max([0,ceil(k-(n+i)/2)]);
j_max=k-i-1;
if j_min>j_max
Ni(ii)=0;
else
j_opt=zeros(1,length(j_min:j_max));
for jj=1:length(j_opt)
j=j_min+jj-1;
j_opt(jj)=nchoosek(k-i,j)*nchoosek(n+j-k-1,k-i-j-1);
end
Ni(ii)=nchoosek(k,i)*sum(j_opt);
end
end

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