A frequency dependent calculation of R0 for a single species, single patch, in a multispecies, multipatch system

Reed

Hi Mark!

I have been working for on implementing your calculation of landscape and I think I’m *very* close. However, I’ve hit a bit of a wall and could use your help. In order to calculate landscape I need to calculate the value of for each species at each patch, . So, I within the simulation I’ve been working on I need a P\*S matrix of values for .

In your 2020 paper (supplements) you calculate in a multi-species, multi-patch system that uses environmental zoospores as:

$$
R\_{0SP} = \frac{1 + \frac{\phi\_s}{b\_{SP} \* \sum\_{j=1}^{num\_patches} (c\_{jp}-c\_{pj} \* \frac{A\_j}{A\_p} \* frac\{\Pi\_{sj}^\*}{\Pi\_{sp}^\*} \* frac{N\_{sj}^\*}{N\_{sp}^\*}}{(1-\Pi\_{SP}^\*)(\sum\_{i=1}^{num\_spp}(\frac{\lambda\_{ip}}{\lambda\_{SP}}\*\frac{\Pi\_{ip}^\*}{\Pi\_{sp}^\*}\*\frac{N\_{ip}^\*}{N\_{sp}^\*}
$$