

Appendix A

Fig. 2 is an illustration of the two-species version of the null metacommunity model. The states of this model are listed in Appendix D: Table D1. The dynamics of the state transitions are governed by

$$\frac{dx_\phi}{dt} = h \left(\sum_i \sum_j x_{i,j} \right) - rx_\phi \quad (\text{A.1})$$

$$\frac{dx_{[0,0]}}{dt} = rx_\phi - c(x_{[1,0]} + x_{[1,1]})x_{[0,0]} - c(x_{[0,1]} + x_{[1,1]})x_{[0,0]} - hx_{[0,0]} \quad (\text{A.2})$$

$$\frac{dx_{[1,0]}}{dt} = c(x_{[1,0]} + x_{[1,1]})x_{[0,0]} - c(x_{[0,1]} + x_{[1,1]})x_{[1,0]} - hx_{[1,0]} \quad (\text{A.3})$$

$$\frac{dx_{[0,1]}}{dt} = c(x_{[0,1]} + x_{[1,1]})x_{[0,0]} - c(x_{[1,0]} + x_{[1,1]})x_{[0,1]} - hx_{[0,1]} \quad (\text{A.4})$$

$$\frac{dx_{[1,1]}}{dt} = c(x_{[1,0]} + x_{[1,1]})x_{[0,1]} + c(x_{[0,1]} + x_{[1,1]})x_{[1,0]} - hx_{[1,1]}. \quad (\text{A.5})$$