A multi-species forest landscape model with dispersal, succession, competition and disturbance functions: exploring determinants of succession paths and coexistence

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October 4, 2013

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Acknowledgements

This material is based on research supported by USDA/NIFA Grant No. 2010-34135-21021 in Tropical/Suptropical Agriculture Research, and on McIntire Stennis funded project MS-019

Outline

Justification

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- and reproduction of stylized facts.

Outline

Landscape model

Spatial model

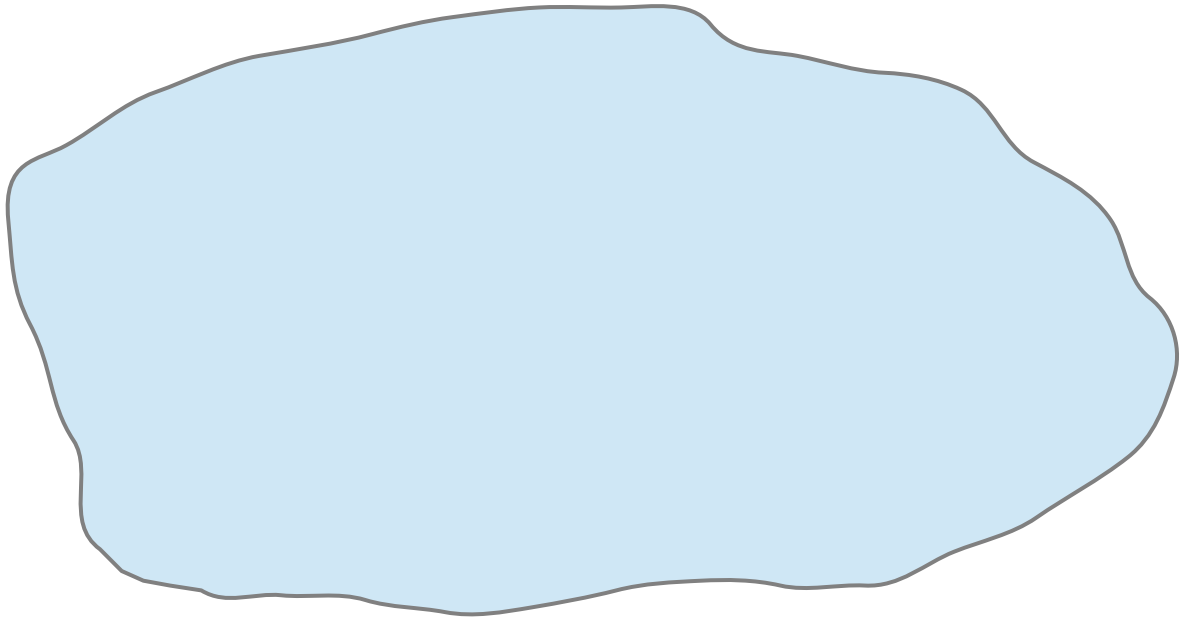
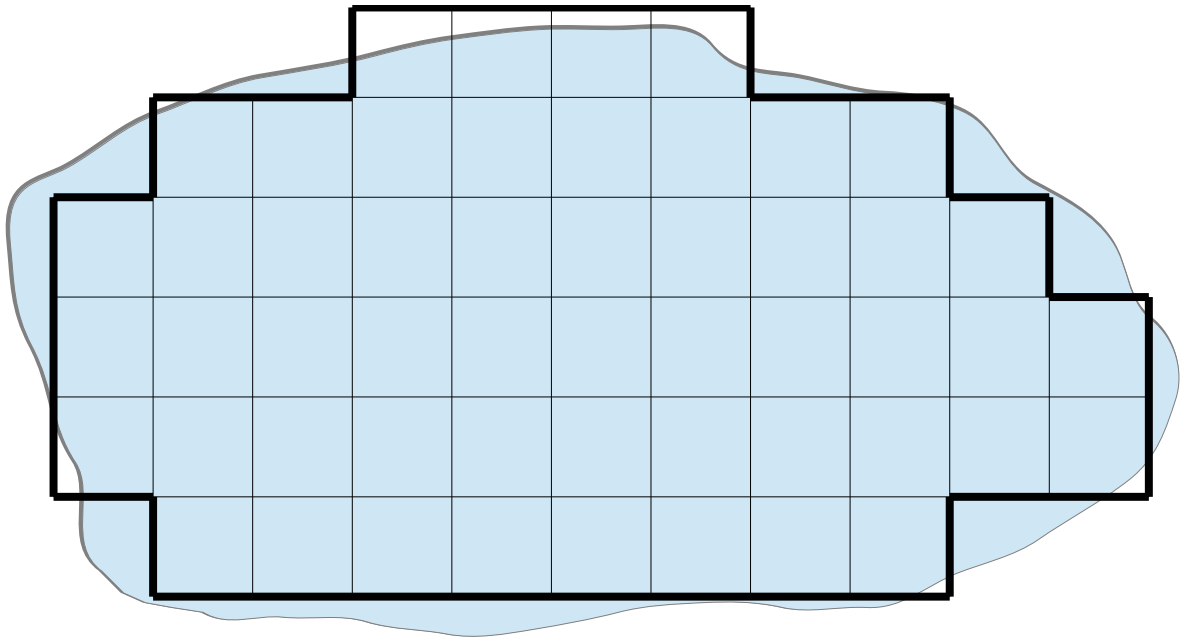


Figure: Spatial domain (2D)

Landscape model

Spatial model



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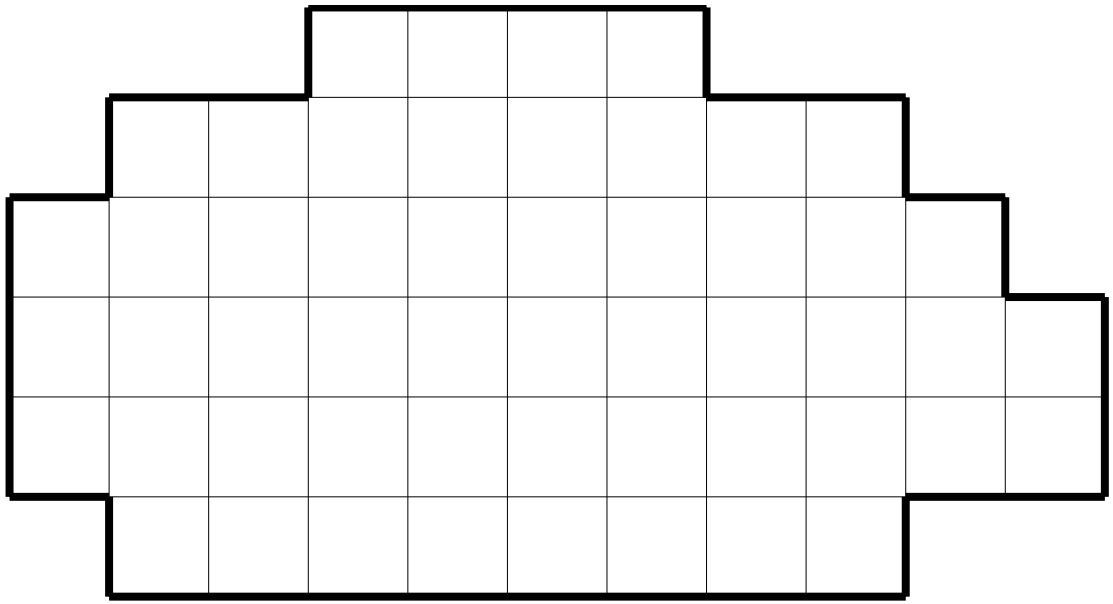

Figure: Discrete spatial domain (2D)

Landscape model

Discrete **multi-species** states with **age-structure**

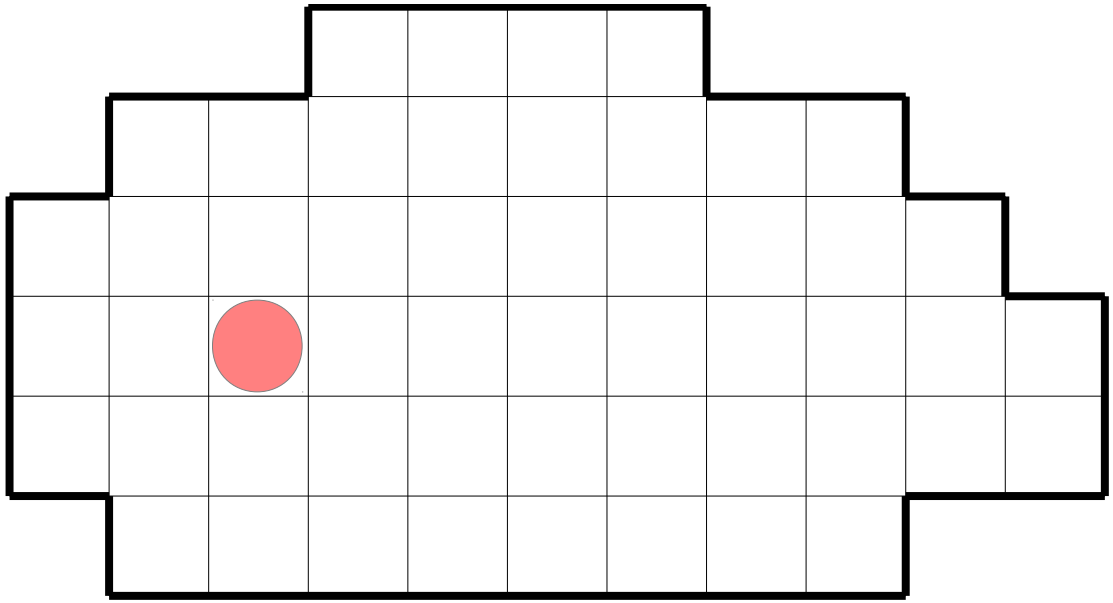

Figure: current cell

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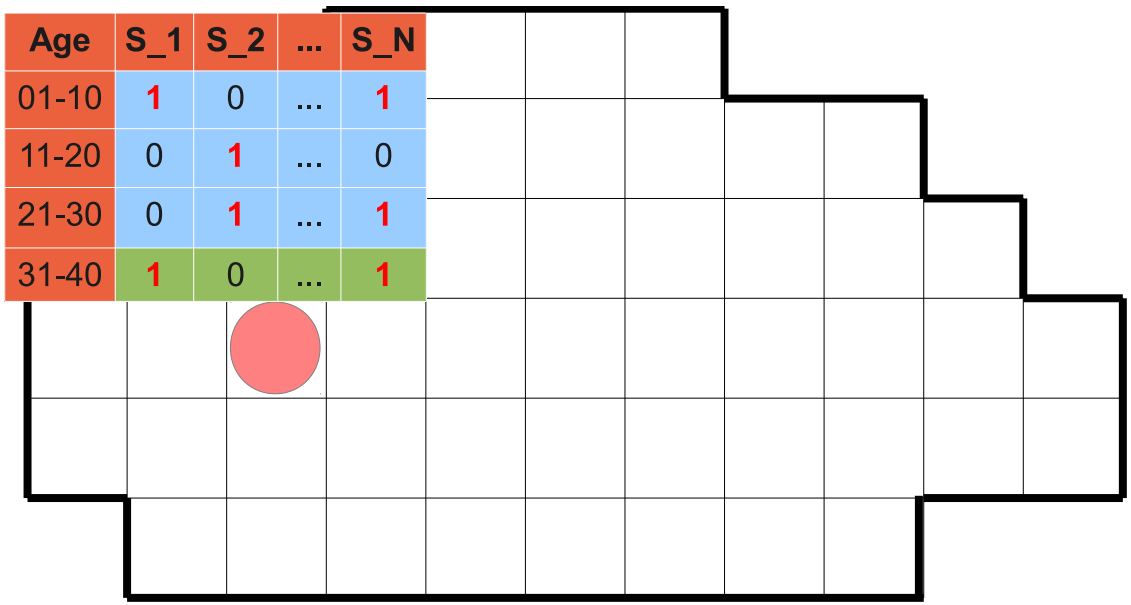

Figure: multi-species and age-structure

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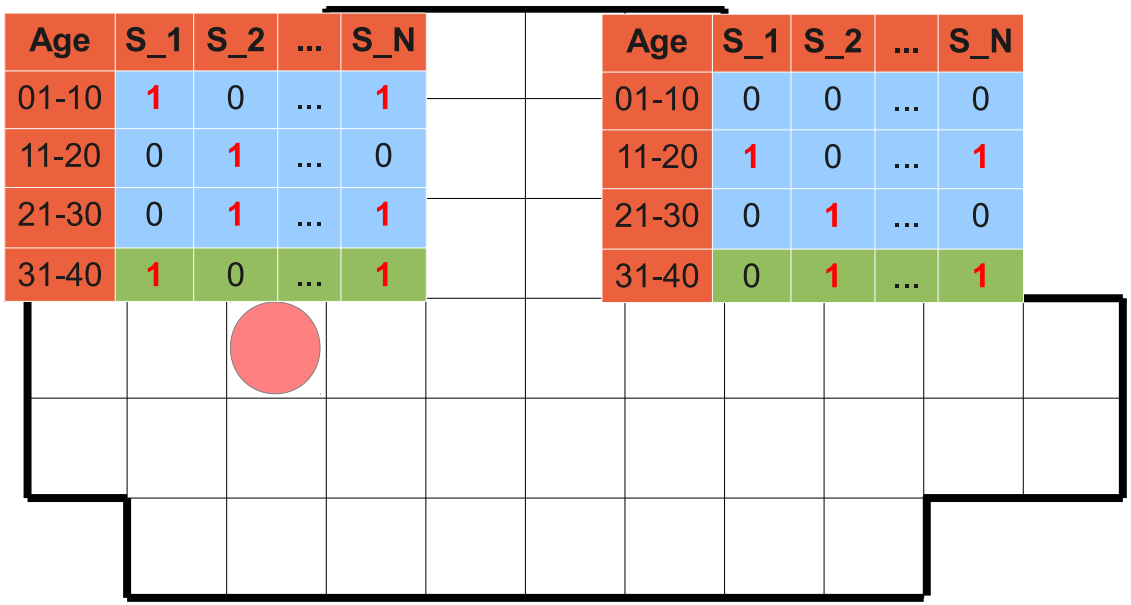

Figure: age-growth

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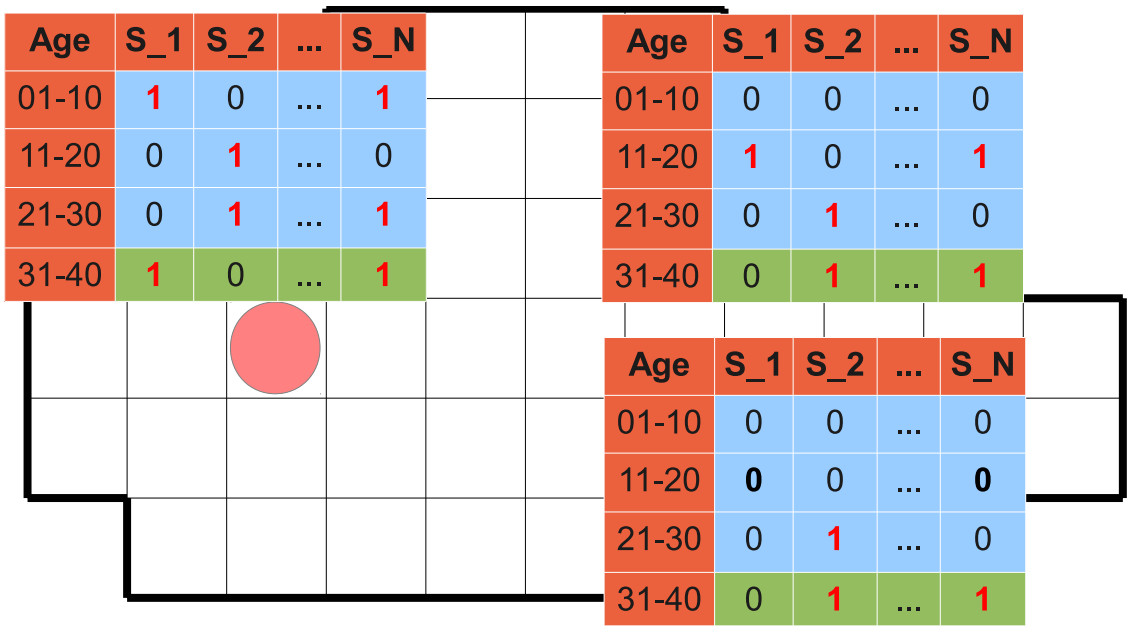
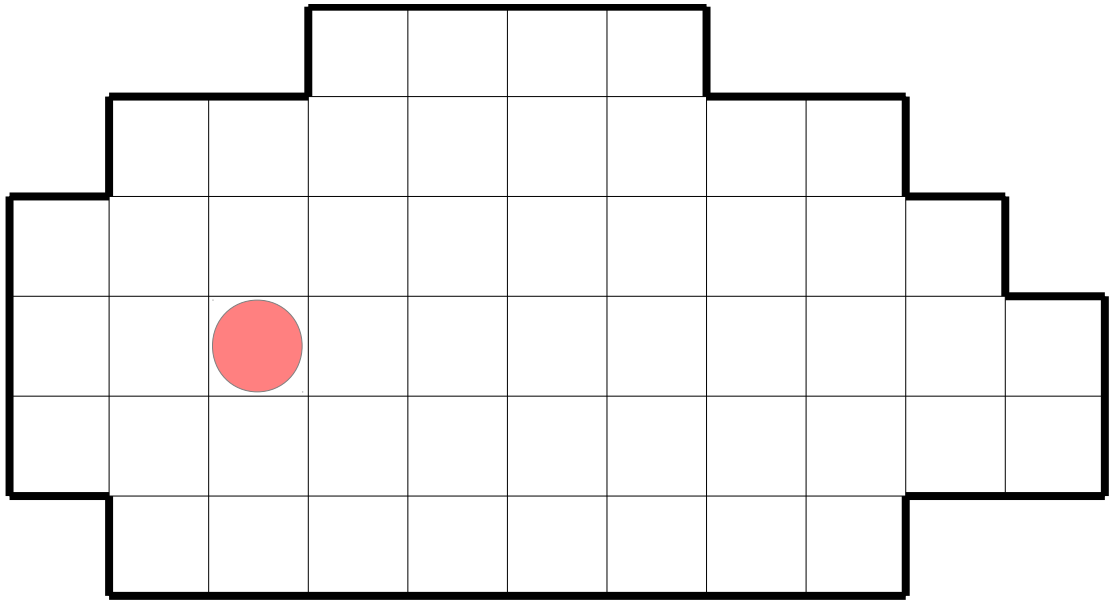


Figure: some cohort die due to light competition

Landscape model

Spatial dynamic



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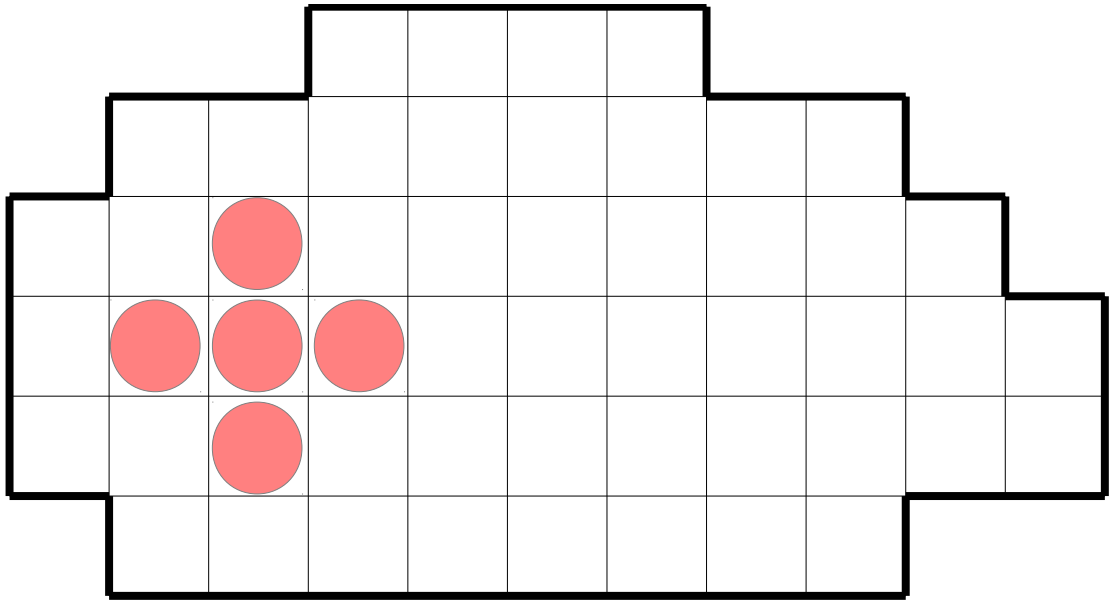

Figure: local dispesion

Landscape model

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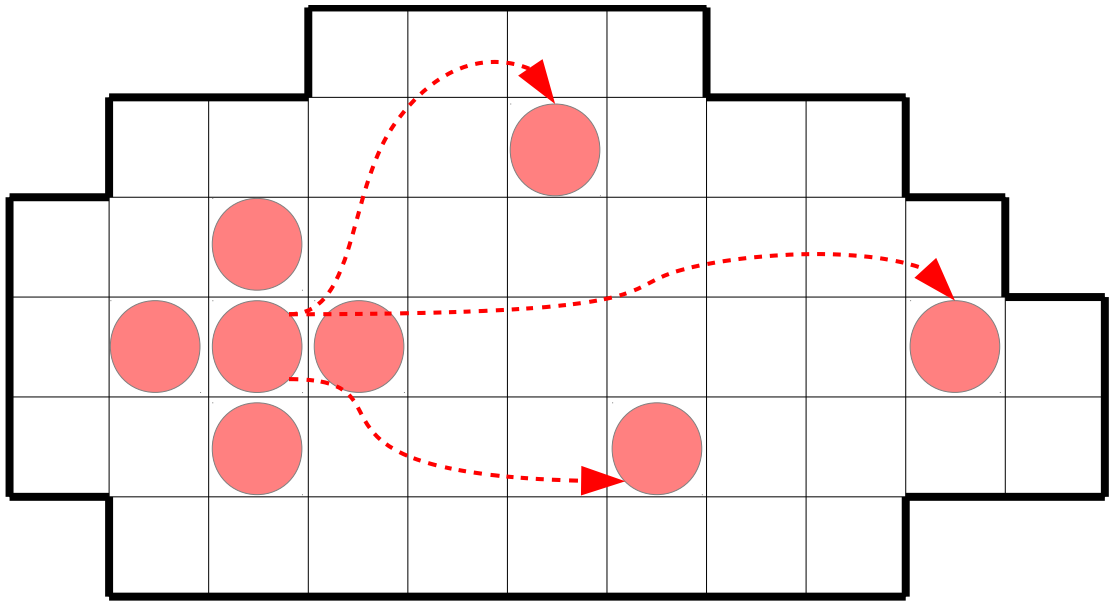

Figure: long distance dispersion (LDD)

Landscape model

Spatial heterogeneity and disturbances

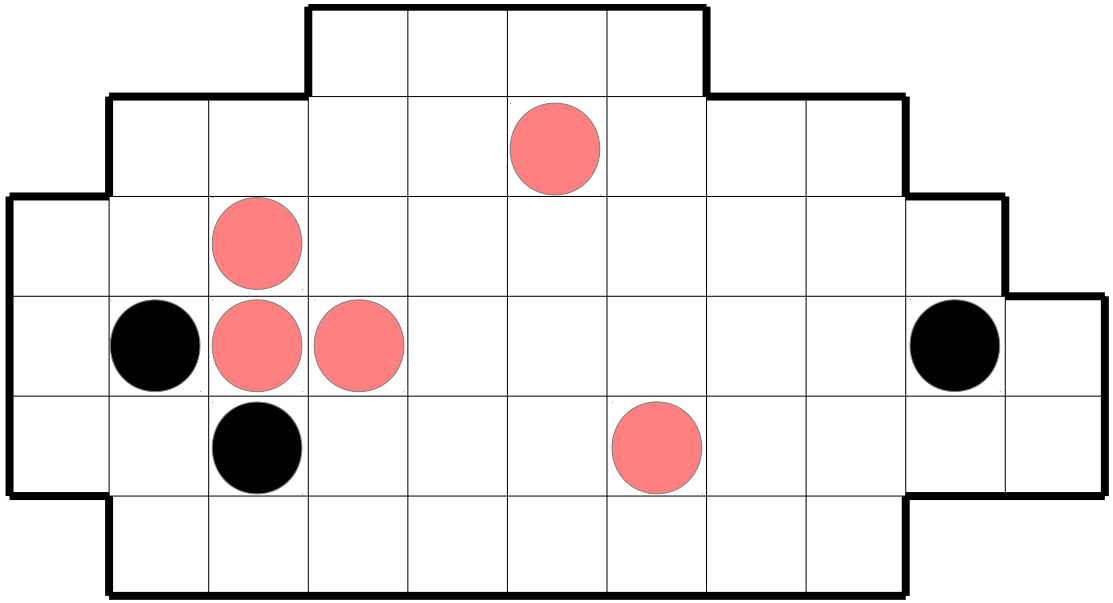

Figure: some species are in unsuitable terrain ..., or a disturbance occurs ...

Landscape model

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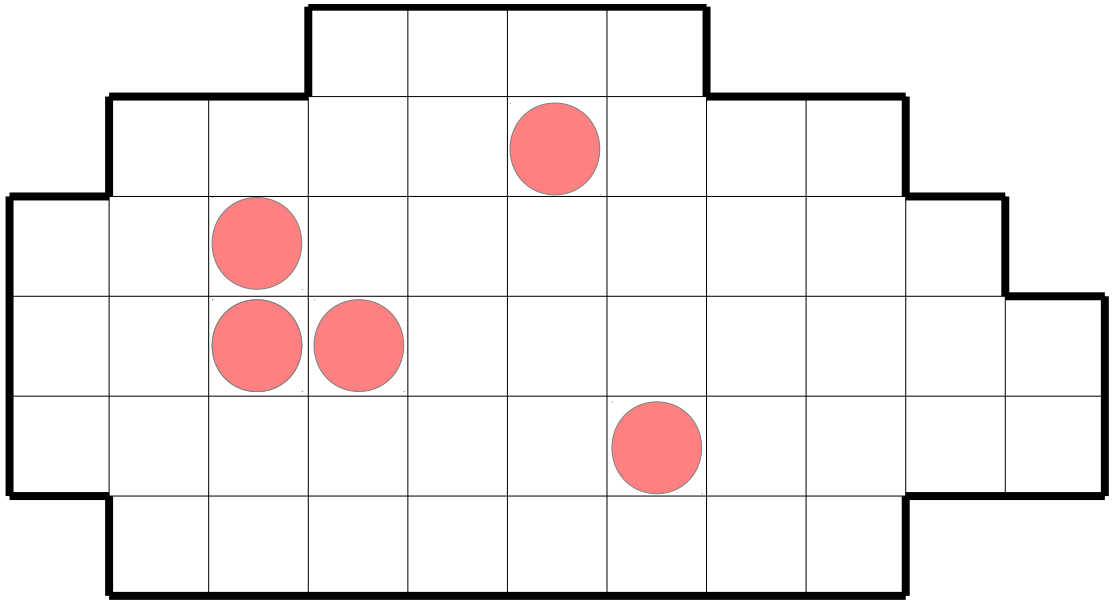

Figure: ... so, they die

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- the code was written **object-oriented** in the C++ language

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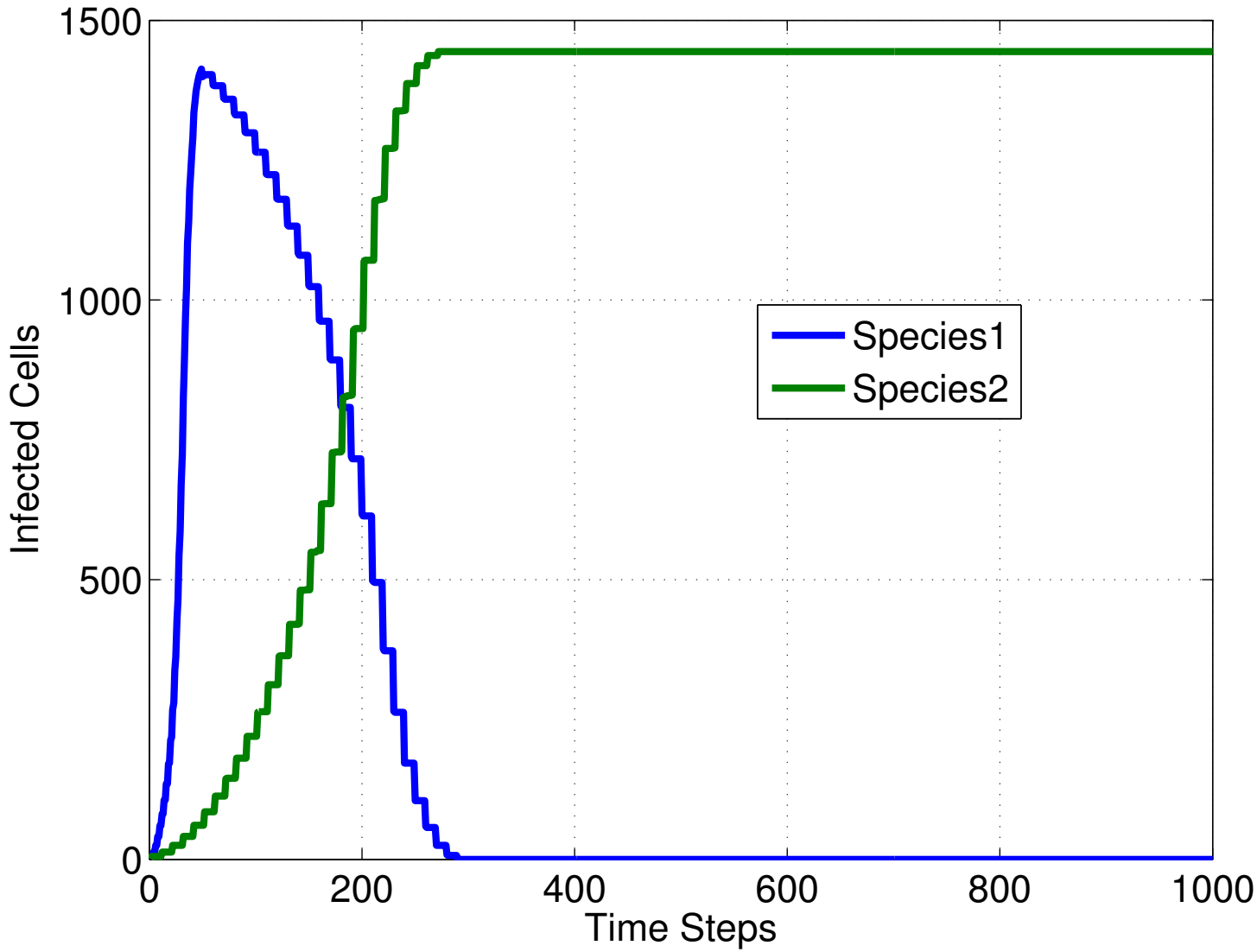

Experiment 2

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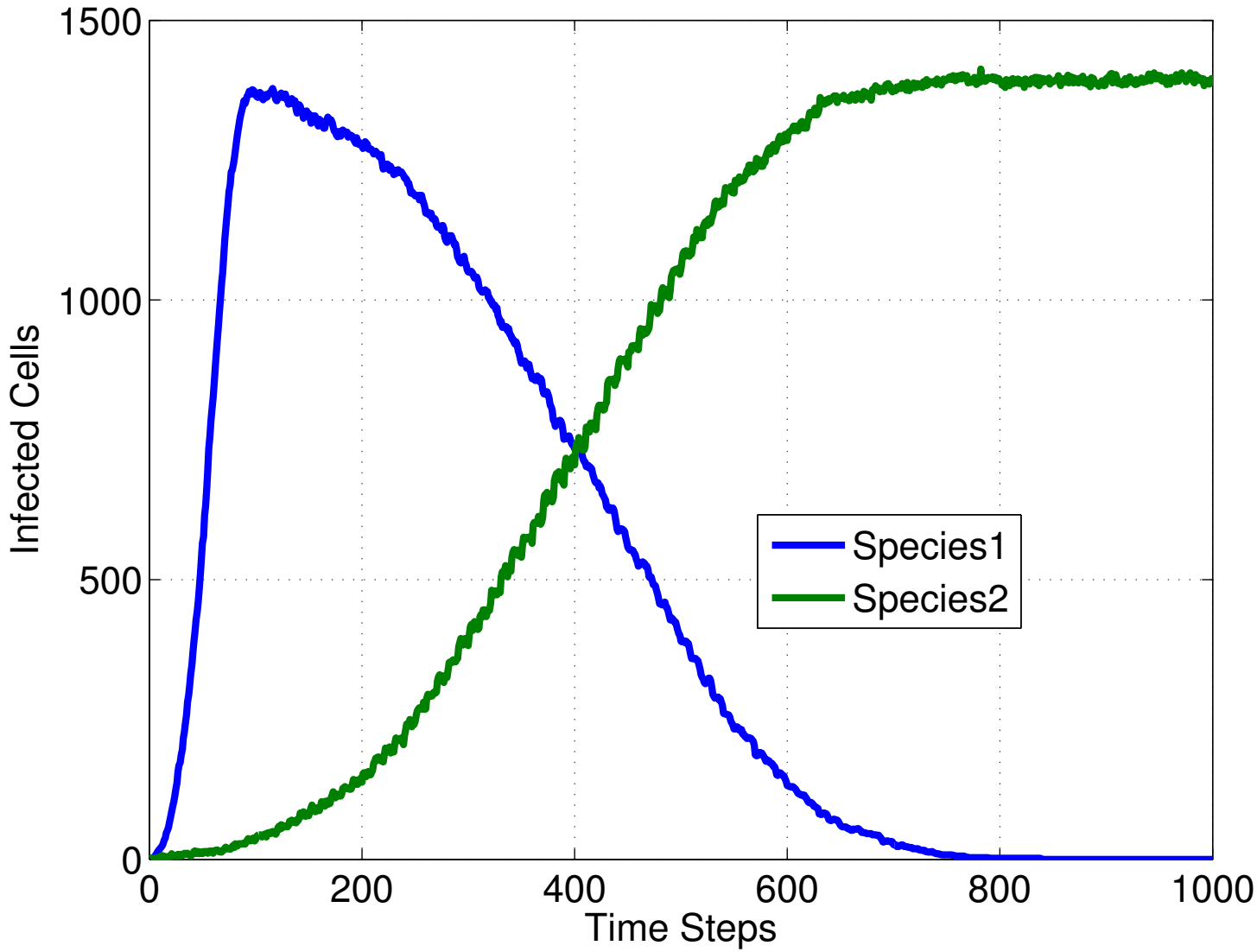

Experiment 3

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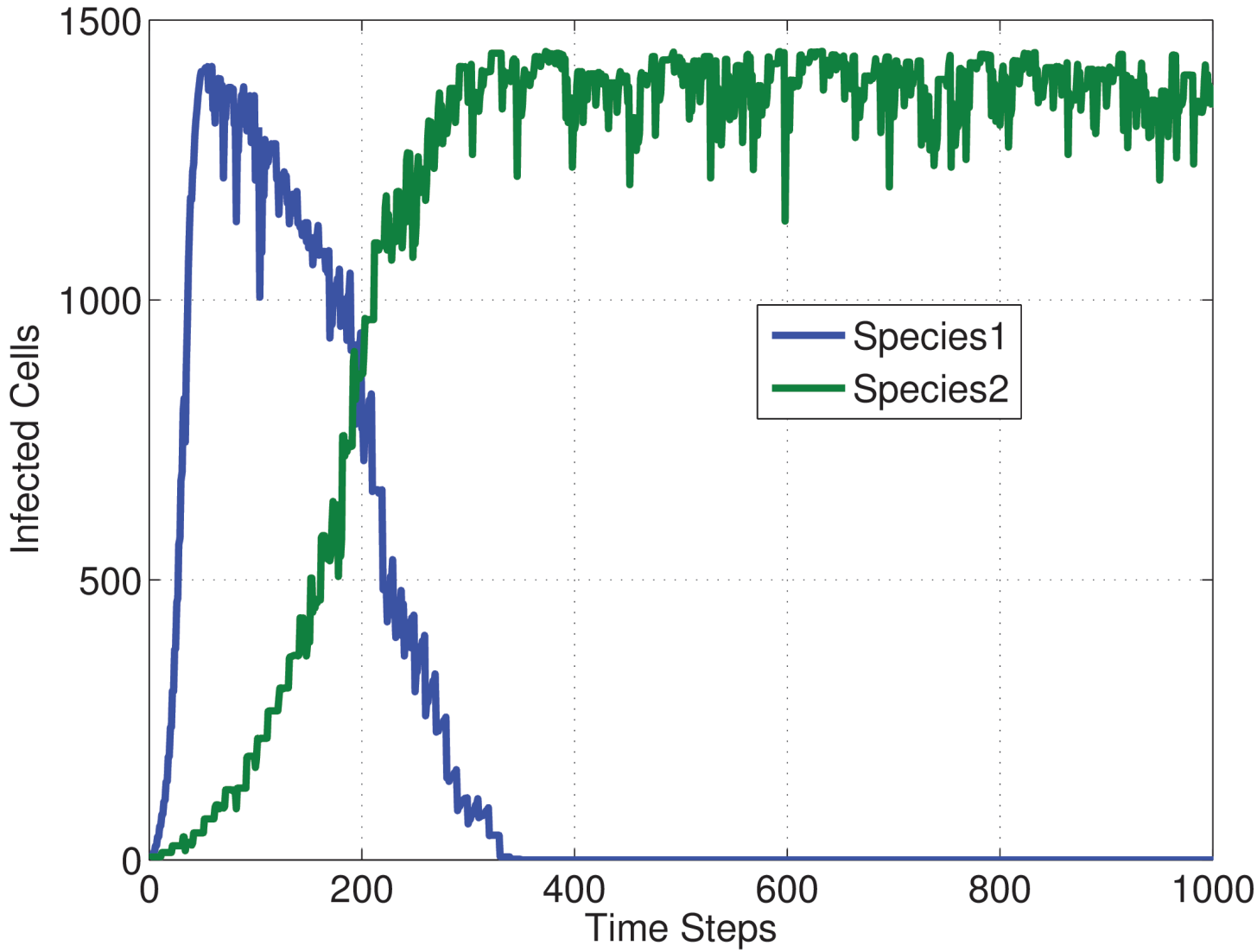

Experiment 4

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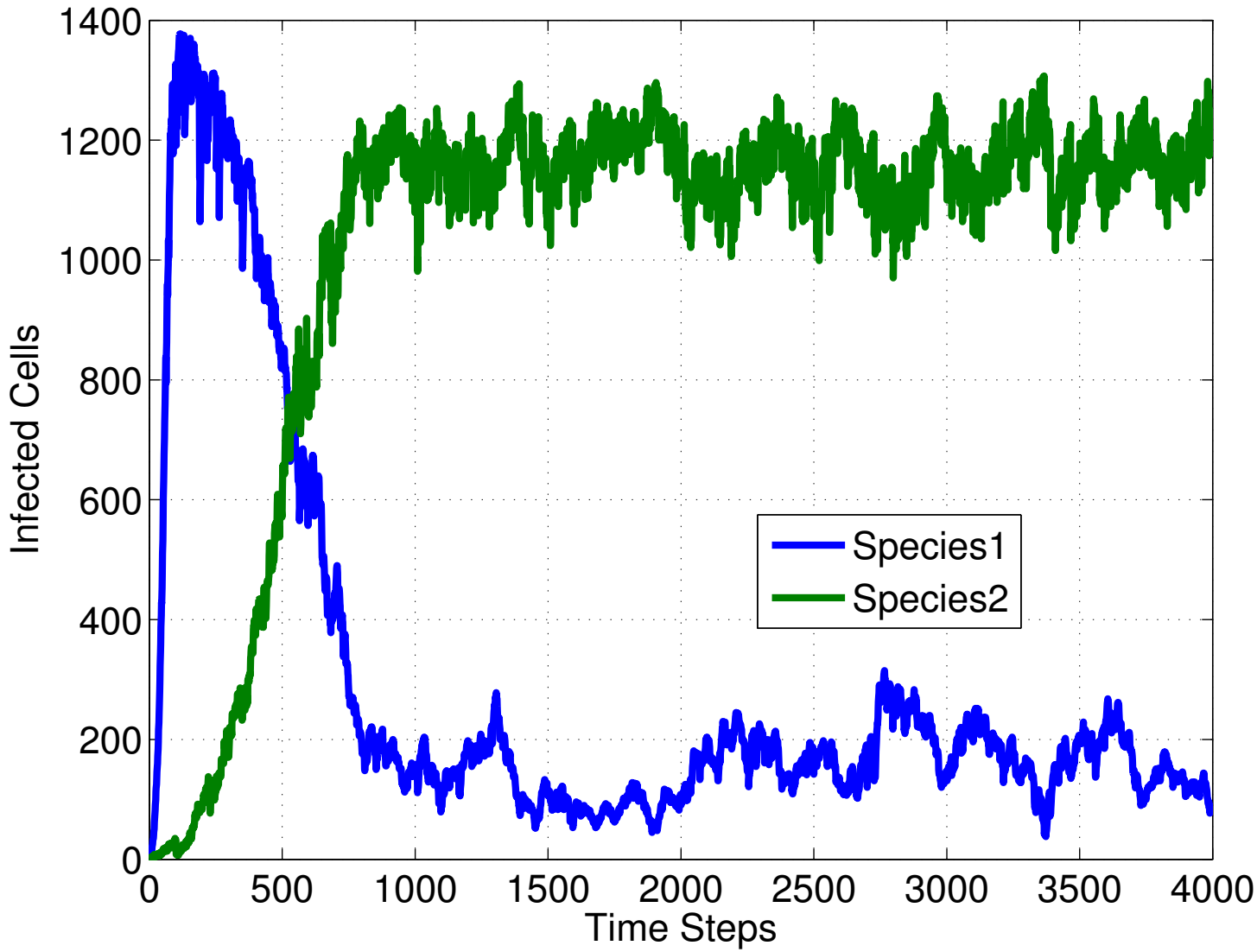

Experiment 5

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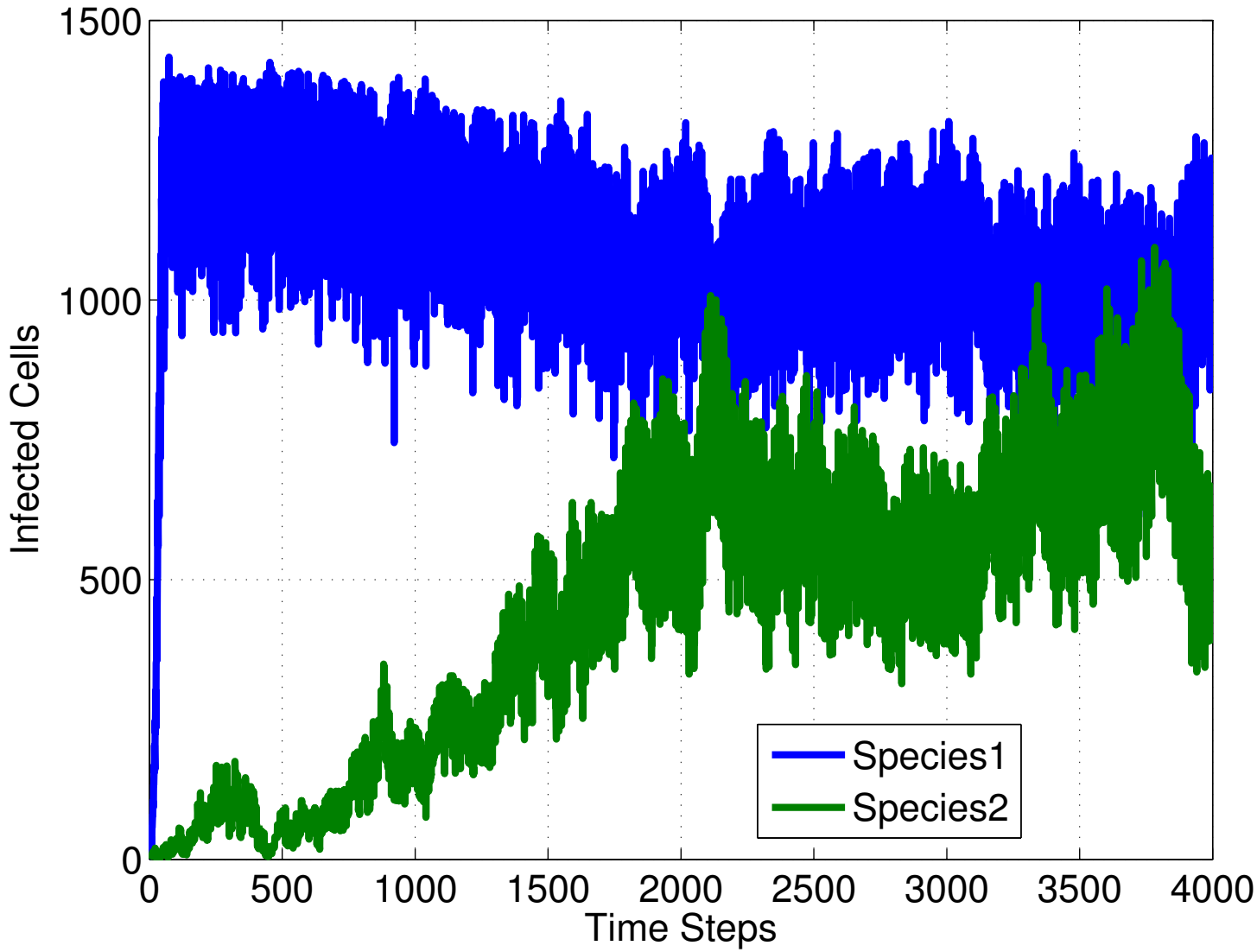

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- We have reproduce some stylized facts where extinction or coexistence of species can be observed

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Future work

Questions?

Thank you!