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Range expansion of mutualists MELANIE J.I. MULLER, Harvard University, KIRILL S. KOROLEV, Massachusetts Institute of Technology, ANDREW W. MURRAY, DAVID R. NELSON, Harvard University — The expansion of a species into new territory is often strongly influenced by the presence of other species. This effect is particularly striking for the case of mutualistic species that enhance each other's proliferation. Examples range from major events in evolutionary history, such as the spread and diversification of flowering plants due to their mutualism with pollen-dispersing insects, to modern examples like the surface colonisation of multi-species microbial biofilms. Here, we investigate the spread of cross-feeding strains of the budding yeast *Saccharomyces cerevisiae* on an agar surface as a model system for expanding mutualists. Depending on the degree of mutualism, the two strains form distinctive spatial patterns during their range expansion. This change in spatial patterns can be understood as a phase transition within a stepping stone model generalized to two mutualistic species.

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