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Long-term transients and complex dynamics of a stage-structured population with time delay and the Allee effect.

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Abstract

Traditionally, mathematical modelling in population ecology is mainly focused on asymptotical behaviour of the model, i.e. as given by the system attractors. Recently, however, transient regimes and especially long-term transients have been recognized as playing a crucial role in the dynamics of ecosystems. In particular, long-term transients are a potential explanation of ecological regime shifts, when an apparently healthy population suddenly collapses and goes extinct. In this paper, we show that the interplay between delay in maturation and a strong Allee effect can

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