Effects of density-dependent migrations on stability of a two-patch predator-prey model. (English summary)


The authors propose and investigate a predator-prey model in a two-patch environment and assume that migration between patches is faster than prey growth, predator mortality and predator-prey interactions. The migration rates for both populations are density dependent. The existence and stability of a steady state are studied for a quite general migration function, and the numerical bifurcation analysis implies that the aggregated model is reasonable as soon as the parameter which represents the ratio of fast to slow time scales is small enough. Furthermore, the effects of density-dependent migrations on the dynamics of the predator-prey model are discussed, and some interesting biological conclusions are obtained.

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References

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Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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