

On the stability of a time-varying single-species harvesting model with Allee effect

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Abstract

This work brings a one-dimensional logistic harvesting model with Allee effect to the time-varying framework. This new framework is more sober than the autonomous version of the system because it; the framework, permits all environment-dependent coefficients to depend on time. Based on these coefficients, we derive sets of conditions that drive population to “mathematical” extinction. More precisely, we investigate various local and global stability notions including uniform stability, attractivity, asymptotic stability and the (uniform) exponential stability.

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Allee paper.pdf available at <https://authorea.com/users/474528/articles/564319-on-the-stability-of-a-time-varying-single-species-harvesting-model-with-allee-effect>