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**Periodic solutions for a discrete time predator-prey system with monotone functional responses.** (English) [Zbl 1122.39005](#)

C. R., Math., Acad. Sci. Paris 345, No. 4, 199-202 (2007).

Summary: Sharp sufficient conditions for the existence of periodic solutions of a nonautonomous discrete time semi-ratio-dependent predator-prey system with functional responses are derived. In our results this system with any monotone functional response bounded by polynomials in  $\mathbb{R}^+$ , always has at least one  $\omega$ -periodic solution. In particular, this system with the most popular functional responses Michaelis-Menten, Holling type-II and III, sigmoidal, Ivlev and some other monotone response functions, always has at least one  $\omega$ -periodic solution.

**MSC:**

**39A11** Stability of difference equations (MSC2000)

**39A12** Discrete version of topics in analysis

**92D25** Population dynamics (general)

Cited in **23** Documents

**Keywords:**

nonautonomous discrete time semi-ratio-dependent predator-prey system; Michaelis-Menten; Holling type-II and III; sigmoidal; Ivlev; monotone response functions

**Full Text:** [DOI](#)

**References:**

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