

[Bai, Ling; Wang, Ke](#)

Optimal impulsive harvest policy for time-dependent logistic equation with periodic coefficients. (English) [Zbl 1031.92028](#)

[Electron. J. Differ. Equ. 2003, Paper No. 121, 9 p. \(2003\).](#)

Summary: We study a time-dependent logistic equation with periodic coefficients. First, we show that the impulsive harvest population equation has impulsive periodic solutions for constant effort harvest and for proportional harvest. Second, we investigate the optimal harvest effort that maximizes the sustainable yield per unit of time. Then we determine the corresponding optimal population levels. Our results generalize results presented by *X. Zhang* et al. [*Nonlinear Anal., Real World Appl.* 4, 639-651 (2003; [Zbl 1011.92052](#))].

MSC:

[92D40](#) Ecology

[34A37](#) Ordinary differential equations with impulses

[34C25](#) Periodic solutions to ordinary differential equations

[49N30](#) Problems with incomplete information (optimization)

[49J15](#) Existence theories for optimal control problems involving ordinary differential equations

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Keywords:

[impulsive harvest equation](#); [global attractor](#); [optimal impulsive harvest policy](#)

Full Text: [EMIS](#) [EuDML](#)