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**Impulsive harvesting and stocking in a Monod-Haldane functional response predator-prey system.** (English) [Zbl 1127.92045](#)

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Summary: A Monod-Haldane functional response predator-prey system with impulsive harvesting and stocking is proposed, where the Monod-Haldane functional response involves group defense theory. Conditions for the system to be extinct are given and permanence conditions are established via the method of comparison involving multiple Lyapunov functions. Further influences of the impulsive harvesting and stocking on the system are studied, and numerical simulations show that the system has rich dynamical behavior.

**MSC:**

[92D40](#) Ecology

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

[37N25](#) Dynamical systems in biology

[91B76](#) Environmental economics (natural resource models, harvesting, pollution, etc.)

Cited in **45** Documents

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

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