

**Gard, T. C.**

**Relative persistence for stochastic population models: Finite sample boundedness.** (English)

Zbl 0682.92018

Mathematical ecology, Proc. Autumn Course Res. Semin., Miramare- Trieste/Italy 1986, 753-772 (1988).

[For the entire collection see [Zbl 0659.00019](#).]

The author uses stochastic differential equations of the form

$$dX_i = X_i[f_i(X)dt + \sum_{j=1}^m g_{ij}(X)dW_j], \quad 1 \leq i \leq n,$$

to describe multi-species population models. A condition called finite sample boundedness is proposed, to be satisfied by persistent populations. The condition requires that the probability of hitting 0 or  $\infty$  in finite time be zero. Some examples are discussed.

Reviewer: [A.D.Barbour](#)

**MSC:**

[92D25](#) Population dynamics (general)

[60H10](#) Stochastic ordinary differential equations (aspects of stochastic analysis)

Cited in **81** Documents

**Keywords:**

[random environments](#); [measure of relative persistence](#); [three-species food chain models](#); [logistic food chain models](#); [multi-species population models](#); [finite sample boundedness](#); [persistent populations](#)