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Print ISSN: 0006-3568

Online ISSN: 1525-3244

Current: Mar 2013 : Volume 63 Issue 3

BioOne Member Since: 2001

Frequency: Monthly

Impact Factor: 4.621

**2011 ISI Journal Citation Reports®
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BioScience 60(7):527-537. 2010

 doi: <http://dx.doi.org/10.1525/bio.2010.60.7.8>

Ecological Complexity and Pest Control in Organic Coffee Production: Uncovering an Autonomous Ecosystem Service

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Many traditional farmers and environmentalists subscribe to the popular idea that the natural world offers ecosystem services that contribute to the stability, productivity, and sustainability of agriculture. Opponents of this view argue that the farm is not an environment to be stewarded by romantic environmentalists, but rather is a battlefield on which the enemies of production must be vanquished. Contemporary research in ecosystem complexity offers a new platform on which to adjudicate between these two points of view. Through particular network structuring, nonlinearity, and stochasticity, and especially with the added dimension of space, recent theoretical and empirical research reveals that ecological systems persist and generate ecosystem services as a result of complex interacting components. Here we report on our research into the ecological dynamics of a collection of species related to key problems in pest control, a critical ecosystem service in coffee production.

Keywords: *ecosystem service, agroecosystem, coffee, complexity*

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