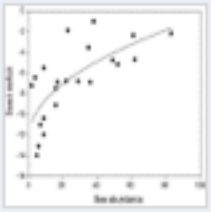

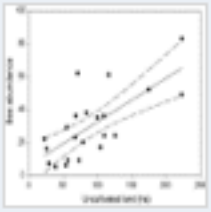

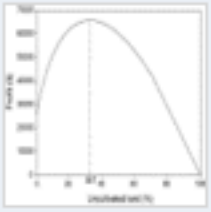

Pollinators provide economic incentive to preserve natural land in agroecosystems

Lora A. Morandin, Mark L. Winston

Department of Biological Sciences, Simon Fraser University, Burnaby, BC, Canada V5A 1S6

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Abstract

Natural habitats are considered inherently indispensable to the global economy by conservationists, but few natural ecosystems afford direct and quantifiable economic benefits. Quantification of natural land value can provide compelling evidence favoring preservation over development. Wild bees are important pollinators of many crop plants, and natural patches in agroecosystems enhance pollinator services and crop yield. Bee abundance was greatest in canola fields that had more uncultivated land within 750 m of field edges and seed set was greater in fields with higher bee abundance. A cost–benefit model that estimates profit in canola agroecosystems with different proportions of uncultivated land is presented. Yield and profit could be maximized with 30% of land uncultivated within 750 m of field edges.

Keywords

Pollination; Wild bees; Canola; Sustainable agriculture; Natural land reserves; Crop yield; Ecosystem