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# Landscape ecology contribution to ecotoxicology studies

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## Abstract

Will there ever be a field of landscape ecotoxicology? This is the way John Cairns Jr questioned the scientific community in 1993, bringing up his fascination with recent developments of landscape ecology. If ecotoxicologists have indeed appropriated some tools used in landscape ecology (remote sensing, spatial statistics, etc), few studies have really adopted the concepts and tested the hypothesis that landscape might modulate transfer and effects of pollutants. Such a hypothesis, though, is highly relevant. Why landscape features, like the spatial arrangement of habitats, soil types or soil properties (that have extensively studied in a non-spatially explicit way in ecotoxicology), would not influence interception, retention and persistence of pollutants? Why landscape, by influencing biodiversity patterns (number of trophic levels, food web lengths, diversity in each trophic level, etc), would not modify pollutant transfers in ecosystems, as it is now clearly acknowledged for the transmission of pathogens? Why landscape features, by the way they are spatially and temporally used by organisms, would not play a role on transfers and effects of pollutants? Studies on the ecology of contaminant transfers using landscape ecology concepts in a systemic approach would better take into account time and space and the diversity of scales and levels of biological organization to be considered. This talk aims at presenting some of the works that have paved the way for landscape ecotoxicology and will explore what insights and inputs could be gained from landscape ecology for a better understanding of pollutant transfers and impacts in ecosystems.

**Keywords:** contaminants, écotoxicologie, écologie du paysage, faune sauvage, micromammifères, oiseaux, polluants, vertébrés

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