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# A HISTORICAL AND GEOGRAPHICAL ANALYSIS OF WORK ON HABITAT MANIPULATION FOR ARTHROPOD BIOLOGICAL CONTROL

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**ABSTRACT.** Habitat manipulation, along with reducing pesticide-induced mortality of natural enemies, offers scope to conserve biological control agents. This study, the first stage of a comprehensive analysis of the literature, investigated historical and geographical trends in such work.

The CAB Abstracts computer database was searched to identify relevant publications in the years 1973 to 1999. Seven or fewer habitat manipulation papers were published each year between the early 1970s and mid 1980s. There was an increasing rate of habitat manipulation publication from the mid 1980s to mid 1990s and fluctuating numbers of papers (15-25 per year) in the second half of the 1990s. The United States and Europe (especially the United Kingdom, Switzerland, and Germany) together accounted for around half of habitat manipulation publications. General reviews and laboratory or modeling studies accounted for 14% of publications. China, Oceania (especially Australia and New Zealand), Russia, and Africa each accounted for 4-9% of all publications.

To gauge the amount of habitat manipulation activity in relation to overall biological control activity, a second search identified publication activity in all fields of biological control. This showed that the percentage of biological control publications concerned with habitat manipulation was low—less than 1%. There was a modest but erratic increase in percentage of habitat manipulation publications since the 1970s.

Further analysis will consider agent and target taxa, agricultural system, level of success, and degree of adoption.

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