Is top-down control by predators driving insect abundance and herbivory rates in fragmented forests?

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The effects of forest fragmentation on ecological interactions and particularly on food webs have scarcely been analysed. There is usually less herbivory in forest fragments than in continuous forests. Here we hypothesize that forest fragmentation enhances top-down control of herbivory through an increase in insectivorous birds and a decrease in herbivorous insects, with a consequent decrease in plant reproductive success in small forest fragments. In the Maulino forest in central Chile, we experimentally excluded birds from Aristotelia chilensis (Elaeocarpaceae) trees in both forest fragments and continuous forest, and analysed herbivore insect abundance, herbivory and plant reproductive success during two consecutive growing seasons. We expected that insect abundance and herbivory would increase, and reproductive success would decrease in A.chilensis from which birds have been excluded, particularly in forest fragments where bird abundance and predation pressure on insects is higher.