
Forest edges: places of many transitions

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Résumé

Faced with the multiple environmental changes underway, forests will be at the center of various transitions and transformations, both ecological and socio-technical. These forest transitions are generally considered without taking into account the specific features of the edge zones surrounding the forests. Forest edges mark the more or less gradual modifications between a forest environment with a closed tree cover and an open environment with few trees, often agricultural. They are home to specific ecological and socio-technical processes and have a major influence on their surroundings. As a result of forest fragmentation in France, forest edges affect a significant proportion of forest and farmland in many areas. It is therefore important to assess their role in possible transitions for forests and regions. To do this, we are drawing on the abundant literature on forest edges through thematic mappings and with the use of several AI tools for bibliographic data synthesis (i.e. Elicit). Four thematic approaches are explored: 1) the consequences of current changes on the ecology of forest edges; 2) the role of forest edges in transitions in forest and forestry activities; 3) the role of forest edges in transitions in agricultural and livestock activities, with a view to the development of agro-ecology; 4) the role of forest edges in territorial dynamics of land use. The results show that, from an ecological point of view, biodiversity and the carbon, water and nutrient cycles in woodland edges have specific characteristics that will be affected by global change. Regarding the second question, edge management is increasingly identified as an effective means of protecting forests against disturbances such as storms, fires and certain pests. They are also refuges for certain crop auxiliaries and as a source of services for livestock, but this often requires special management for which there are few guides available at the moment. Lastly, results show that their location and history are closely linked to the dynamics of the land, particularly the forestry expansion underway in France. Like hedgerows, although less well documented, edges are linear ecological infrastructures with a small spatial footprint, but which have effects that have a major impact on adjacent environments and activities. As an interface between different land cover and land uses, forest edges are places where the transitions in farmland and in forest may interact. It would seem useful for foresters, farmers and other land managers to take greater account of their specific characteristics, so as to take account of their contribution to the changes underway. Transitions need to be integrative of the different sectors (farming, forestry, etc.) and managed at a landscape level: forest edges appear as component that may play a strong role in these transitions.

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