

Disturbance of wildlife and the recreational use of forests

Recreational activities in UK forests are increasingly popular providing a range of social benefits as well as contributing to local economies. However, there is a need for land managers to balance the impacts of recreation with the requirement to conserve biodiversity.

This literature review provides an overview of the range of impacts on wildlife and habitats from recreational activities in UK forests and woodlands. It also reviews evidence relating to how recreational users perceive impacts on wildlife and factors that can influence their behaviour such as knowledge and educational initiatives.



Background

There are increasing concerns that outdoor recreation is placing pressure on woodlands and forests. A wide range of recreation takes place in UK forests and woodlands but key activities include walking and hiking (often with dogs), cycling and mountain biking, driving off-road vehicles, horse riding, camping and nature watching. More than 450 journal articles, book chapters, dissertations and reports on recreational disturbance of wildlife were identified, of which 171 references were included in the review. The review focused on the recreational activities rather than particular species or habitats, and included a synthesis of available evidence relating to direct impacts (e.g. wildlife flight, behaviour change and injury or death) and indirect impacts (e.g. habitat change and the spread of alien invasive species and pathogens).

Objectives

This research aimed to:

- Identify and summarise existing evidence relating to the impact of people using forests for recreation upon wildlife and wildlife management.
- Consider the social and cultural drivers behind human disturbance of wildlife through recreation, and identify gaps in this knowledge.

Methods

- We conducted a desk-based study of primarily peer-reviewed literature identified via a number of bibliographic databases. The search focused on papers published during 1990-2010 but older references were included where particularly relevant.

Findings

There is considerable evidence illustrating that recreational activities disturb wildlife, causing, for example, ‘flight’, behaviour change, and habitat change. This evidence is, however, unevenly focused. Less than one-third of the literature reviewed relates directly to forests and only 5 of the published studies draw on primary research conducted in UK forests. A large proportion of the literature focuses on walking, trampling of soils and vegetation, and flight responses in birds. Many studies report limited long-term impacts but responses can differ depending on factors such as soil structure, climate and availability of tree and shrub cover. The limited evidence available on users’ attitudes and behaviour in relation to disturbance suggests that they generally have little awareness of their impacts on wildlife and believe other users are responsible for negative impacts. Research often provides some management recommendations but few systematically address the range of management options and their effectiveness. The value of visitor education programmes is highlighted although wider literature suggests there is a weak relationship between knowledge, intention and behaviour. However, providing users with a rationale for recommended behaviour can improve the effectiveness of on-site education and interpretation.

Recommendations

- There is an urgent need for more integrated interdisciplinary research in the field of recreational disturbance linking ecological impact studies with social and economic data.
- Research on the social and cultural differences between recreational users would be beneficial as these variations will influence the distribution and level of wildlife disturbance.
- Little is known about the social and cultural norms that affect people’s behaviour undertaking recreational activities in forests and how they respond to management interventions.
- The literature focuses on negative impacts but more studies should seek to weigh the benefits of public access against wildlife disturbance so that managers are better able to balance the positive and negative aspects of human-wildlife interactions.
- More examples of successful management actions to reduce wildlife disturbance in forests are needed. There is very little evidence relating to the social acceptability of various management options and what different users view as acceptable levels of impact.
- The literature exhibits an overriding concern with protected areas and vulnerable species. Impacts of recreation on a wide range of forest species and types should be explored.

For further information contact:
 Mariella.marzano@forestry.gsi.gov.uk or
 Norman.dandy@forestry.gsi.gov.uk

Funding/Support

This research was funded by the Forestry Commission

Reports and Publications

Marzano, M & N. Dandy (2011) Disturbance of wildlife and the recreational use of forests: literature review. Forest Research, Farnham.