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### **A literature review of urban effects on lowland heaths and their wildlife**

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#### ***Introduction***

The area of heathland in southern England has declined greatly and much of the remaining area is now adjacent to urban areas. The main urban impacts on lowland heaths are reduction in area, fragmentation, loss of surrounding habitats, disturbance, trampling and fire.

#### ***What was done***

This report reviews the literature on the impacts of urban public access and recreation on heaths (but not the impact of roads, which has been reviewed elsewhere).

#### ***Results and conclusions***

1. **Habitat Loss**

The area of heath declined through loss to agriculture and urban development until tighter planning controls in 1987, and then losses continued from habitat succession.

2. **Fragmentation**

More heathland species were lost from small (<100ha) than large (>100 ha) heaths. Re-colonisation potential varied between species - for instance birds disperse better than reptiles. The edge-effect of non-heathland species invading heath edges had a greater impact on smaller heaths. This often led to a greater species total, but fewer heathland specialist species.

2. **Disturbance**

36 of 40 studies found reduced breeding bird success with increased numbers and proximity of visitors. Fewer nightjars bred, with lower success, on heaths with more surrounding houses. Predation on nightjar nests was higher close to paths or in areas with more paths. Correlations between disturbance and breeding success of woodlark and Dartford warbler were inconsistent. Nests were most often predated by crows, which were more common on heaths with more adjacent urban development and more visitors.

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3. **Fire**  
Uncontrolled or 'wild' fire is common; 3333 incidents were reported in Dorset from 1990-1998, of which 61% were caused by arson. More fires occurred on heaths with more urban development within 500m of the heath. Fire had little long-term impact on vegetation but species dependent on old-growth heather did not re-colonise for many years. For example, smooth snakes occurred at highest densities in heather more than 20 years old.
4. **Cats**  
The UK average of 320 cats per 1000 households brought home an estimated 9121 vertebrate prey items each year. No specific studies have been undertaken on heaths but cats have been recorded hunting in sand lizard colonies. No mitigation methods consistently reduced predation.
5. **Trampling**  
Heathland is more susceptible to trampling, especially by horses and motorcycles, than grassland, and heath types vary in their susceptibility between seasons and types of trampling.
6. **Other factors**  
54% of visitors to heaths had dogs, and dog fouling caused significant fertilisation and vegetational change along paths. The only study on the impacts of horse dung suggested a similar effect, combined with trampling. No published studies were found on the impact on urban heaths of urban light, noise, tipping, invasive alien species, hydrological effects, installation of services, pollution, pH changes or increased management costs (eg because of vandalism or public opposition to conservation management).

Further research could be directed at investigating the mechanism of impact on specific species, and at methods of manipulating visitors' activities to minimise negative impacts.

### ***English Nature's viewpoint***

This large reference set clearly shows the negative impacts of urban development and visitor activity on heaths and some of their key species. Understanding these processes could reduce these impacts by informing improved visitor management methods and controls under the planning system.

### ***Selected references***

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### ***Further information***

For the full report or other publications on this subject, please contact the Enquiry Service on 01733 455100/101/102 or email [enquiries@english-nature.org.uk](mailto:enquiries@english-nature.org.uk)

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