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**A history of burning as a management tool in the English uplands
1: Estimates of the areal extent of management burning in the English uplands**

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Introduction

Fire is regularly used as a management tool as a means of encouraging fresh growth of vegetation for livestock or red grouse. The practice is centuries old and comprises burning patches of vegetation during the autumn, late winter or early spring. The burns carried out as part of red grouse management are generally small and this is based upon grouse feeding and sheltering preferences. By contrast, agricultural burns tend to be much larger, sometimes several hectares in extent.

The vegetation that is subject to regular burning in the English uplands includes, grassland, heathland and blanket bog.

In recent years, concern has been raised over the influence that regular burning has upon vegetation, invertebrates, soil structure and hydrology, water quality and carbon storage. Many of the sites that are currently affected by burning are designated as being of international importance for nature conservation.

English Nature has been seeking to assess the impacts of burning management upon the English uplands. To date, a review of the existing literature relating to burning impacts has been completed and this project is intended to be the first of several that will begin to look in more detail at the relationship between burning and its impacts upon the English uplands.

What was done

A contract was let to determine whether aerial photography could be used to assess the scale and intensity of burning within the English uplands.

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Results and conclusions

The study used aerial photographs from the periods 1943-52 and 1965-80 and for 2000. The study found:

- Visible evidence of burning was only found in relation to *Calluna* dominated communities.
- For the sites where there is visible evidence of burning, the proportional area in management is 38%.
- A typical range encompassing 50% of the sites surveyed indicates a variation between 20% and 63% although some sites exhibited higher levels of management.
- The typical area of burns range between 0.12 ha and 0.55 ha with a median value between 0.25 ha to 0.28 ha.
- The estimate of a return period using the historical photography is 16-20 years. However, there are many areas where considerably shorter return periods are implied by the proportional areas of visible management.
- The results provide some evidence that there was an increase in the level of management between the 1940s and the 1970s, but no change between the 1970s and currently.
- Burning of grassland was identified as being of regional importance but the scale is below that resolvable by a sample framework defined for the development of national estimates.

English Nature's viewpoint

As the report states, certain difficulties arose during the investigation of the work that means the assessment of the history of burning practice at the level of the English uplands remains incomplete. As such, this work should be seen as a contribution to our knowledge rather than the definitive work and those with an interest in the subject matter are urged to explore these further.

Further information

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