

Introduction

Common gorse (*Ulex Europaeus*) at Greenham and Crookham Commons runway area was mapped using a hand held GPS (Trimble) between December 2007 and the beginning of March 2008 by Imogen Parker and Ben Hibbins of Natural England.

This report will not seek to declare where the correct management balance lies, but it is hoped that the information and observations presented will be of some use.

Methodology

Overview

- Areas over 8m² containing more than 10% gorse were mapped as “patches”.
- Percentage cover of gorse was estimated within each patch.
- Amount of heather was roughly estimated within each patch.
- There were often gaps and variations within patches which were not mapped.

Detail and rationale

Mapping was performed on the runway and its four surrounding “lozenges” (Figure 1), covering approximately 94ha.

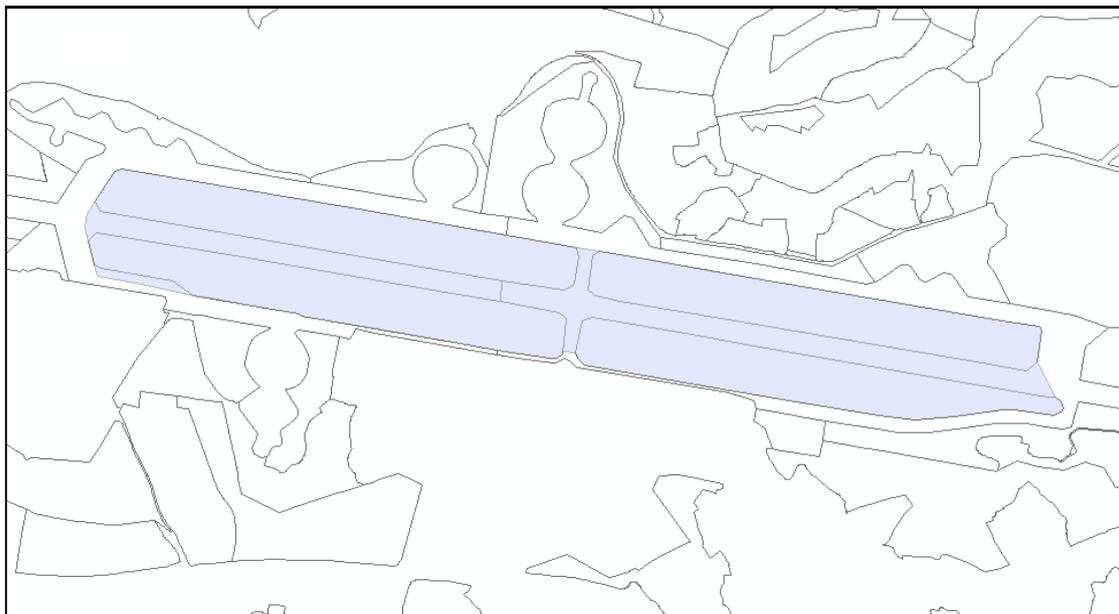


Figure 1. An estimate of the survey area (in blue), including the runways and their four surrounding “lozenges”.

For the purposes of this exercise, a “patch” of gorse refers to areas characterised by gorse (i.e. with over 10% cover) that are visually distinct from surrounding habitat. Particularly within larger patches, there were often gaps, variations in cover, or areas dominated by heather. It was unfeasible to map such detail. As these areas appeared to be distinct and coherent, with easily identifiable boundaries, they were recorded as single patches.

As any area estimated to have more than 10% gorse cover was included, it should be borne in mind that the term “gorse patch” does not necessarily imply dominance by gorse.

Patches were mapped by walking around their boundaries with the GPS device and mapping these areas as polygons. The percentage of gorse within these patches was estimated by eye, taking account of cover variation and gaps. The accuracy of the GPS device was to within around approximately 2m.

Heather and gorse were often found in the same areas. The primary purpose of this survey was to map gorse, but under the assumption that the distribution of heather might have management implications, the amount of any heather species within / bordering the patches was roughly estimated. This was generally according to the “DAFOR” scale (Dominant-Abundant-Frequent-Occasional-Rare). This was not performed for some of the eastern-most patches where only presence/absence was recorded (see Results section for clarification on this). This was purely descriptive rather than based on quantifiable definitions, and was not intended to give scientific data on heather abundance. It was intended to be indicative of the relative distribution of heather to assist in directing future management and investigations.

As a general rule, very small patches of gorse, i.e. less than 8m², were not mapped as this would have been very time consuming and it was assumed that the larger blocks of gorse will be targeted for management. However, patches around the threshold may have been under-recorded due to their being occasionally overlooked.

Results and observations

A map of gorse patches (Map 1) is enclosed, along with a map showing rough abundance of heather within these patches (Map 2).

Map 2 highlights areas with at least frequent heather on the DAFOR scale. Occasionally intermediate amounts of heather were recorded, such as “occasional to frequent”. In these cases the lower abundance was used for the map, i.e. occasional for this example. In some patches presence/absence only was recorded. In these cases the amount of heather was less than frequent and has been represented as such on the map.

It was roughly estimated that outside mapped gorse patches (i.e. gorse patches over 8m²), there was an average gorse cover of 5% (in the form of isolated plants and patches below 8m²).

The gorse is widespread and well established, covering over 20% of the survey area (Table 1).

Survey area (m ²)	937400.00
Total area of gorse patches over 8m ² (m ²)	174692.82
Estimated area of gorse under 8m ² (m ²)	38135.36
Total area of gorse (m ²)	212828.18
Overall gorse % cover	22.70

Table 1. A summary of the survey findings. Derived from % cover and area figures.

There were noticeable differences in the distribution and growth phase of gorse across the survey area and within the mapped patches. The western lozenges contain the greatest concentration in the largest blocks. These areas also appeared to have the most well established plants: there were extensive very tall “walls” of gorse here. Much of the gorse in the western lozenges was quite leggy and evidently over-mature. Heather was also more prevalent in the western lozenges. However, there were a few patches in the eastern lozenges where high heather abundance coincided with only moderate gorse cover. In the eastern areas the gorse also tended to be younger and in smaller patches. It should be noted that heather distribution within the large patches often varied significantly.

Discussion

Gorse cover is currently over twice the maximum level for *Ulex europeaus* for lowland dry heath recommended in Natural England's SSSI Conservation Objectives guidance (10%). We propose that if heathland plant communities are to be sustained here, gorse cover will need to be reduced. It was apparent during the course of the survey that gorse is becoming established in many areas of heather (many gorse seedlings were observed amongst heather), and appears to be shading it out. Gorse and heather distribution appeared closely associated, possibly because gorse is able to colonise acidic and nutrient-poor soils that are favoured by heather. The gorse is likely to be enriching and de-acidifying the soil thus reducing the site's suitability for heathland plants and increasing its suitability for vigorous competitors.

Encouragingly, Dartford Warblers were observed during the survey. Gorse is an important habitat for them (as discussed in the enclosed information sheets) and this appears to present a conflict with the maintenance of heathland communities. However, as already mentioned much of the gorse was leggy and over-mature, so management efforts concentrated on these plants could benefit bird populations by encouraging regrowth of denser bushes. It should also be borne in mind that the heather here is very low-growing and is unlikely to provide good nesting habitat. Consequently, a higher cover of gorse than is generally recommended might be desirable.

The difference in distribution and age of gorse between the eastern and western lozenges is presumably because management history differs between east and west. Limited management in the west appears to have allowed the gorse to expand and reach the later stages of its lifecycle, whereas the beneficial effects of recent management in the east are evident with some very good concentrations of heather and a more varied gorse structure. Since the majority of the heather was in the west and the gorse there is becoming degenerate, it seems that this area will need the most immediate management.