

## **Greenham Common**

### **Condition Monitoring Guidance for Grassland and Heathland Habitat**

By Thomas Haynes MCIEEM, NatureBureau Ltd

Date: April 2013

Version: Final

#### **Introduction**

This document provides an introduction to the condition monitoring survey for the following habitats:

- Species Rich Neutral Grassland
- Heathland
- Acid Grassland

It will help explain how to approach the completion of the forms and what skills are needed.

#### **What is condition monitoring?**

It is important that the wildlife managers of Greenham Common understand how healthy each of the habitats are. This is particularly important for habitats protected under UK conservation strategies and EU legislation. These habitats are the main reasons why Greenham Common is a designated Site of Special Scientific Interest.

The health of the habitats on Greenham give an indication of how capable they are to survive into the future and help predict any adverse impacts, such as erosion and overgrazing.

The main method of assessing the health of habitats is by undertaking 'condition assessment surveys' on sites and habitats. These forms are designed to assess key features of each habitat which have an impact on their overall condition.

#### **What do I have to do?**

These surveys will be undertaken by Greenham Common rangers and volunteers and require surveys to be undertaken on the common each year visiting certain areas and answering questions from the survey forms. Pictures of the areas visited need to be taken and finally the results from survey need to be entered onto the West Berkshire Council computer system and the field sheets catalogued.

## What skills do I need to undertake the survey?

It is important that surveyors have a general understanding of different habitats and flowering plants and how to identify them. There are only a limited number of plants that require identification on the forms and these plants are listed below (by habitat):

### Heathland:

- *Calluna vulgaris* (Heather)
- *Erica cinerea* (Bell Heather)
- *Erica tetralix* (Cross-leaved Heath)
- *Ulex minor* (Dwarf Gorse)
- *Ulex europaeus* (Gorse)
- *Trifolium repens* (White Clover)
- *Senecio jacobaea* (Ragwort)
- *Cirsium arvense* (Creeping Thistle)
- *Rubus fruticosus* agg. (Bramble)
- *Rosa canina* (Dog-rose)

### Species Rich Neutral Grassland:

- *Centaurea nigra* (Common Knapweed)
- *Lotus corniculatus* (Common Bird's-foot-trefoil)
- *Leucanthemum vulgare* (Oxeye Daisy)
- *Pilosella officinarum* (Mouse-ear Hawkweed)
- *Anthyllis vulneraria* (Kidney Vetch)
- *Trifolium pratense* (Red Clover)
- *Cynosurus cristatus* (Crested Dog's-tail)
- *Trifolium repens* (White Clover)
- *Senecio jacobaea* (Ragwort)
- *Cirsium arvense* (Creeping Thistle)
- *Rubus fruticosus* agg. (Bramble)
- *Rosa canina* (Dog-rose)
- *Centaureum* sp. (Centaurium species)
- *Primula veris* (Cowslip)
- *Anthyllis vulneraria* (Kidney Vetch)

It is also important that you are able to tell the difference between mosses and lichens (there is no requirement to identify different species). It is also important that you are able to estimate the coverage of these species within a large square or circle, and identify cattle, sheep and rabbit dung.

It is recommended that you use a modern field guide or take part in a species identification training session if you are learning the flowering plants listed above for the first time. Recommended guides include:

- The Wild Flower Key (Francis Rose, revised and updated by Clare O'Reilly. 2006)  
ISBN 978-0-7232-5175-0
- Collins Flower Guide (David Streeeter et al. 2009)  
ISBN 978-0-00-718389-0

### **When should I undertake the survey?**

The aim of the survey scheme is to ensure that data is regularly collected each year so that the data can be assessed to see if there are any negative impacts and observe any changes in the vegetation.

With this in mind, the survey should be undertaken once or twice a year within the flowering season (June-August). The test surveys were undertaken on the 22<sup>nd</sup> July and 31<sup>st</sup> July in 2012.

It should be noted that if surveys are undertaken in early June and late August then different species may be more conspicuous and will make the data more difficult to compare over the years.

### **What do I need?**

The following forms and equipment are required:

- 30m tape measure
- Pens
- Ruler
- Camera
- Species Rich Neutral Grassland Condition Monitoring (Local Sample) form
- Species Rich Neutral Grassland Condition Monitoring (Coarse Sample) form
- Heathland & Acid Grassland Condition Monitoring (Local Sample) form
- Heathland & Acid Grassland Condition Monitoring (Coarse Sample) form
- Sample Point Location map

### **Where do I need to survey?**

The assessment requires surveyors to visit pre-determined locations on Greenham Common to assess the current state of the habitats and vegetation using a set of pre-formed questions for each location. Each location will detail the preferred state of each habitat. The vegetation communities under investigation; including their point locations, are identified below in table 1 also see the map in figure 1:

Table 1: Point locations and habitats to be assessed as part of the regular condition assessment

Point No.	Habitat Type	BAP Classification	NVC Classification	Point Location	BNG	Long	Lat
01.	Species Rich Neutral Grassland	Lowland Neutral Grassland	MG5 <i>Cynosurus cristatus</i> – <i>Centaurea nigra</i> grassland	North-west lozenge on the north side of the heathland.	SU 49825 64937	-1.28545	51.3813
02.	Species Rich Neutral Grassland	Lowland Neutral Grassland	MG5 <i>Cynosurus cristatus</i> – <i>Centaurea nigra</i> grassland	South-east or south west lozenge on the inside edge of the heathland.	SU 51021 64452	-1.26835	51.3768
03.	Species Rich Neutral Grassland	Lowland Neutral Grassland	MG5 <i>Cynosurus cristatus</i> – <i>Centaurea nigra</i> grassland	At the eastern edge of the former runway.	SU 51778 64446	-1.25747	51.3767
04.	Acid Grassland	Lowland Acid Grassland	U1 <i>Festuca ovina</i> - <i>Agrostis capillaries</i> - <i>Rumex acetosella</i> grassland	In the main area of acid grassland in the west of the site.	SU 48168 64762	-1.30928	51.3798
05.	Heathland and Acid Grassland Mosaic	Dwarf Shrub Heath Lowland Acid Grassland	U1 <i>Festuca ovina</i> - <i>Agrostis capillaries</i> - <i>Rumex acetosella</i> grassland H2 <i>Calluna vulgaris</i> – <i>Ulex minor</i> heathland	North-west lozenge.	SU 49600 64882	-1.2887	51.3808
06.	Heathland and Acid Grassland Mosaic	Dwarf Shrub Heath Lowland Acid Grassland	U1 <i>Festuca ovina</i> - <i>Agrostis capillaries</i> - <i>Rumex acetosella</i> grassland H2 <i>Calluna vulgaris</i> – <i>Ulex minor</i> heathland	South-east lozenge.	SU 50909 64404	-1.26996	51.3764

Figure 1: The point locations to be assessed as part of the regular condition assessment



The easiest way to relocate these survey points is by following the map and locating the survey marker posts. It is not essential that the area is in precisely the same location as the previous year.

### **How long will the survey take?**

The survey will take 4-8 hours with all the points visited in figure 1. If limited time is available, it is recommended that 2-4 point locations are completed. It is recommended that at least one heathland and one species rich neutral grassland location is visited on each survey. By the end of the survey season all points need to be surveyed.

### **Introduction to the survey**

The survey involves four separate actions at each point location identified in figure 1. These are:

- Assessing the habitat
- Setting up the survey plot
- Completing all the questions on the 'fine scale SCM form'
- Completing all the questions on the 'coarse scale SCM form'
- Cataloguing the field sheets and checking information

These actions are discussed in the following sections:

## Habitat assessment

It is very important that your survey plot includes the same type of vegetation throughout. Make sure you spend five minutes looking at the plants in the local area and walk across your survey area checking that they are found in a repeating pattern. Sometimes there will be local disturbance (like dung heaps or burnt areas) which may make the area seem different, which is acceptable, but overall the vegetation should appear the same.

You may also be in a habitat with a repeating pattern of vegetation (grasses and shrubs). This is also acceptable as long as the same repeating pattern is present across the sample area.

If you can clearly see that your sample area includes uniform vegetation that looks similar throughout, or that there are a set of different plants (maybe heathers and grasses) that repeat across the survey area, then you can complete the SCM forms.

If there are significant differences in substrate or habitat in your sample area (e.g. dense woodland or open gravel) then these areas are better to exclude from the sample area.

Remember that your sample area needs to be a 20m radius for the coarse sample, so you need to be able to check that you have enough of the habitat for your survey. As the point locations are already pre-defined, this should not be an issue.

This aspect of the survey is the most complicated, so it is recommended that you seek advice or training to ensure that the habitats to be recorded are plotted correctly. Some examples are given below:

*Figure 3: Grassland with small shrubs. The shrubs repeat across the grassland, making this area uniform. The dense area of shrubs to the left and the grassland to the right are different and need to be excluded from the sample.*



*Figure 4: This wide gravel footpath needs to be excluded from the sample area as it is very different to the grassland in the foreground. It is also possible that the grassland closer to the footpath is different.*



*Figure 5: A repeating pattern of shrubs and tree saplings. Note that the occasional Silver Birch tree can also be present in these areas. The dense areas of woodland in the distance are excluded.*



Figure 6: Similar to figure 5, but with less tree saplings. The dense areas of woodland are excluded. Note that the silver birch tree is included as there is the occasional one present in these areas.



Figure 7: This area includes three different types of vegetation: thick woody shrub (in the background); heath (in the foreground); and grassland (right). It is important that only one of these areas is within your sample.



*Figure 8: Although a narrow footpath is present in this area, it can clearly be seen that the vegetation is the same across the area. It is acceptable to sample anywhere within this uniform area.*



*Figure 9: This is another uniform area. Note the shrubs in the distance. These can be included within the survey sample (as they appear to repeat).*

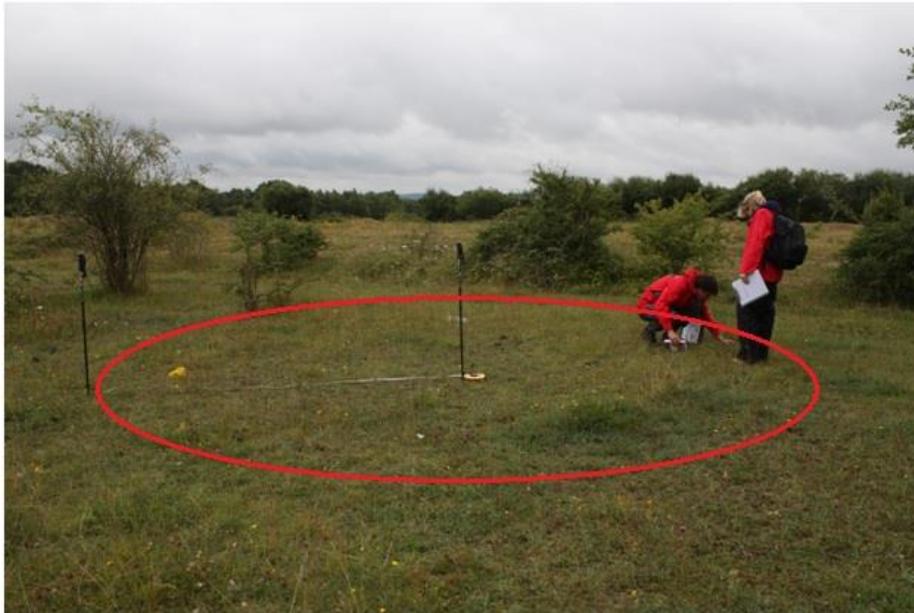


### **Setting out the survey area**

The survey area is set out from the centre of the point location or marker post. Take the measuring tape and measure out the distance defined in the SCM form (note that each SCM form has a different sized

survey area). It is best to mark the distance away from the post with a rucksack or similar. This area then becomes your survey area. It is easiest to visualise the survey area as a circle (with the point or marker post at its centre, see figure 10). Note that in some locations different habitats may be present within the survey area. Point 3 is a good example with open gravel beside the species rich neutral grassland. It is essential that you **only** sample the heathland or species rich grassland areas at each point location. In some instances this may require changing the shape of the survey area.

*Figure 10: An example of the survey area marked out with two walking sticks and a measuring tape.*



### **Fine-scale SCM Forms**

The fine-scale form should be the first to be completed. Follow the instructions on the forms and answer the questions to the best of your ability. All questions need to be answered in the forms. It is useful to read through the questions before the survey and clarify any concerns.

### **Coarse-scale SCM Forms**

This set of questions is undertaken in the larger survey area. It can be more difficult to visualise percentage cover at larger scales, but please remember that these percentages are estimates only and they do not have to be precisely accurate.

Once both forms for each point are completed then the field survey is finished.

### **Cataloguing the field sheets and checking information**

It is important to remember to fill in all the required questions and to check that they were answered in the required way. Text entries can be included, but should not replace the required data. Ambiguous entries will make assessing the data difficult and should be avoided.

It is equally important that it is clear who completed the survey forms and who took part in the survey. Contact details for these people are important to retain, in case there are any questions or clarifications needed by assessors.

It is important to ensure that scans or original field sheets are retained in the SCM survey folder for each year. Below are some questions to help you double check the results:

- Are all questions answered?
- Is the surveyors name on the form?
- How many people were on the survey? Are all the names included?
- Who wrote down the information?
- Is the date on each form?
- Are measurements in centimetres?
- Do you have all the forms for the points visited (there should be a local and coarse scale form for each point)?

### Entering data into the SCM Database

It is important that the data collected as part of the surveys are entered into the two SCM Datasheets, which are Excel spread sheet files. Make sure that you fill in the shaded boxes with the information from your field survey sheets. These need to be filled in so that each question which is answered ‘yes’ or ‘no’ is replaced with a ‘1’ or a ‘0’. See the examples below in figures 11 and 12. The spreadsheet is set up as pages for each year of the survey (e.g. 2013), please make sure you complete the correct year.

Figure 11: How the data appears on the field forms

Calluna vulgaris (Heather), Erica cinerea (Bell Heather) and/or Erica tetralix (Cross-leaved Heath) accounting for over 50% of the total cover?	Y				Y	
Ulex minor (Dwarf Gorse) over 10% cover - Do not mistake this for the shrubbier Gorse (Ulex europaeus)?		N			Y	
Ulex europaeus (Gorse) less than 25% cover?	Y				Y	
Calluna vulgaris (Heather), Erica cinerea (Bell Heather) and/or Erica tetralix (Cross-leaved Heath) plants are mostly short and turf like or forming small hummocks (ankle height or below)?	Y				Y	
Calluna vulgaris (Heather), Erica cinerea (Bell Heather) and Erica tetralix (Cross-leaved Heath) plants mostly forming larger bulbous hummocks (knee height), sometimes with bare branches and twigs in the centre of each hummock?		N				N
Calluna vulgaris (Heather), Erica cinerea (Bell Heather) and/or Erica tetralix (Cross-leaved Heath) plants mostly a mixture of the above two descriptions?		N				N

Figure 12: How the same data from figure 11 should be entered into the SCM datasheet.

Attribute	Question	Point 4		Point 5		Point 6	
		Y	N	Y	N	Y	N
Vegetation structure	Calluna vulgaris (Heather), Erica cinerea (Bell Heather) and/or Erica tetralix (Cross-leaved Heath) accounting for over 50% of the total cover?	1				1	
	Ulex minor (Dwarf Gorse) over 10% cover - Do not mistake this for the shrubbier Gorse (Ulex europaeus)?		1			1	
	Ulex europaeus (Gorse) less than 25% cover?	1				1	
	Calluna vulgaris (Heather), Erica cinerea (Bell Heather) and/or Erica tetralix (Cross-leaved Heath) plants are mostly short and turf like or forming small hummocks (ankle height or below)?	1				1	
	Calluna vulgaris (Heather), Erica cinerea (Bell Heather) and Erica tetralix (Cross-leaved Heath) plants mostly forming larger bulbous hummocks (knee height), sometimes with bare branches and twigs in the centre of each hummock?		1				1
	Calluna vulgaris (Heather), Erica cinerea (Bell Heather) and/or Erica tetralix (Cross-leaved Heath) plants mostly a mixture of the above two descriptions?		1				1

## Data Analysis

The SCM database provides basic statistics on the 'Data Summary' page using automated formula, derived from the data entered into each year entry. It is possible to develop graphs etc. from the results of each year for separate attributes (e.g. vegetation height from point 1).