

# **Molland Moor Heather Survey Year 1**

**4<sup>th</sup> and 11<sup>th</sup> April 2013**

## **Introduction**

This 1st Heather survey has been completed over 2 days on the 4<sup>th</sup> and 11<sup>th</sup> April in light of the winter cattle grazing project on Molland Moor, a collaboration of the Landowner, Moorkeeper, Heather Trust, Natural England and Exmoor National Park. This survey comes after last year's baseline survey, which was to assess the current condition of the moor. This survey will measure the impacts of the 2012/13 winter grazing.

Historically, Molland Moor was managed with winter stocking, this involved animals grazing the moor during the daylight hours and then being taken off overnight to be housed or placed on in-bye land and fed. The project looks at implementing this on a trial basis looking to establish a sustainable grazing regime for the future based on solid evidence and without compromising the conservation interest of the moor, a 681ha Site of Special Scientific Interest (SSSI) and a Special Area of Conservation (SAC). The Moor has entered into a Higher Level Stewardship (HLS) agreement in 2009 and is at present grazed during the months of May to October with a mix of Cattle, Ponies and Sheep with the Ponies grazed all year round. The survey will be carried out each year around March and April and each survey point will be revisited to establish the effect of the winter grazing.

## **Methodology**

Twenty-eight random points have been chosen to assess where dwarf species, in particular Heather, is present. Attributes looked at included Dwarf species present, Heather height, condition of the heather, grazing pressure, flowering and whether it has had a recent burn. Two photos have been taken at each site to provide photographic evidence and will be taken again each year during the project too record changes.

The random points have been selected from ariel photography where heather looks to be present (see annex 1) and have been selected to cover the whole moorland and in particular as near to gateways where possible where the cattle come on to the moorland.

In each sample site a 2m x 2m quadrat was used but for certain attributes such as grazing pressure, flowering and burns an approximate 10metre radius look around was used.

The same twenty-eight points have again been visited and the results below record any changes that have occurred.

## Results

Individual stop summaries from the 2013 survey are recorded in Annex 2. For these results I have compared each of the twenty-eight stops and below summarises differences.

**Grazing pressure** – It was found that four of the stops recorded heavier grazing than the baseline. Two of these stops (10 and 22) are within the assessment guidelines of 'no more than 33% of heather showing signs off grazing' with stops 1 and 19 failing this. However, these two stops are on areas of recent burns and animals tend to congregate to burn sites.

There was also 4 stops that showed a decrease in grazing pressure.

**No change** – There were fifteen stops that showed no significant or visible change. Seven of them are on mature/degenerate stands of dominant heather with five on *Molinia* dominant with fragmented heath and two on recent burn sites.

**Other notable differences** – It was found that eight of the stops had a higher occurrence of flowering heather with two of these stops recording lower grazing pressure. Dieback of heather was a noticeable attribute from the baseline survey and it was found that two stops had further dieback.

## Discussion

For this survey and subsequent ones to have any meaning all management activity will need to be recorded. This will need to include animal grazing numbers throughout the year (see below), what entry/exit points the animals are using during the winter months, where scrub control has taken place and management burns. This information is essential so further vegetation surveys in following years can look at trends and be able to inform suitable grazing regimes that does not damage the special designations of the site but also utilises to the maximum available fodder.

At entry/exit points especially on the southern boundary of the moor there is significant amounts of gorse which in all probability is down to past winter grazing practices. Poaching and over grazing around these areas will need particular monitoring to ensure invasive species such as European Gorse does not occur. This will also need yearly monitoring and has been mapped and photographed in January 2013 as a baseline survey.

## Grazing

The average stocking level based on the figures in the grazing summary, showing the numbers from April 2012 to February 2013 was 0.19 Livestock units / ha. The peak stocking level of 0.29 livestock units / ha was achieved in January; at this time of year, the food value of the vegetation on the moor is at its lowest level. The



grazing levels puts into context how much grazing pressure the dwarf vegetation can sustain with this level of grazing over the winter period.

#### **Molland Moor – Grazing Summary ~ April 2012 – February 2013**

| <b>Grazier</b>  | <b>Type of stock</b> | <b>Number</b> | <b>Turnout</b> | <b>Off the moor</b> | <b>Comments</b>   |
|-----------------|----------------------|---------------|----------------|---------------------|---|
| John Bulman     | Yearling cattle      | 55            | 14-Apr         | 09-Jun              |   |
|                 | Cows                 | 60            | 09-Jun         | 31-Jan              | 1 x second calver died 30 Oct 12. Lost 5 cows Jan 13 - Blackleg |
|                 | Calves               | 60            | 09-Jun         | 31-Jan              |   |
|                 | Yearling cattle      | 85            | 03-Sep         | 31-Jan              |   |
|                 |                      |               |                |                     |   |
|                 |                      |               |                |                     |   |
| John Tucker     | Exmoor Horn ewes     | 50            | 29-May         | 30-Sep              |   |
|                 | Exmoor Horn ewes     | 50            | 26-Jun         | 30-Sep              | Split between ewes & hogs unknown - 50:50 assumed               |
|                 | Exmoor Horn hogs     | 50            | 26-Jun         | 30-Sep              |   |
|                 | Exmoor Horn ewes     | 150           | 01-Jan         | 14-Feb              |   |
|                 |                      |               |                |                     |   |
|                 |                      |               |                |                     |   |
| Peter Delbridge | Easycare ewes        | 250           | 01-Jan         | 14-Feb              |   |
|                 |                      |               |                |                     |   |
|                 |                      |               |                |                     |   |
| William Dart    | Ponies               | 25            | Throughout     |                     | Estimated number  |
|                 |                      |               |                |                     |   |
|                 |                      |               |                |                     |   |
|                 | Red deer             | 25            | Throughout     |                     | Estimated number  |
|                 |                      |               |                |                     |   |

## **Conclusion**

The baseline survey was completed in April 2012 and this survey is the first to assess the impact of the winter 2012/13 grazing.

From the results it can be shown that the levels of grazing throughout the winter has had no detrimental effect on the condition of the Heather. As was found in the baseline survey the heather throughout all age structures has been minimally grazed and only two stops fall below the standard set out of 'over 33% of shoots must not be grazed' by Joint Nature Conservation Committee (JNCC). Both of these stops (1 and 19) are recent burn sites and grazing animals tend to target these even in summer. So it cannot be concluded that this is due to winter grazing alone. Only two other sites were deemed to have heavier grazing but these fell within the JNCC guidelines.

As expected the general condition of the Heather was poor. As highlighted in the baseline survey Molland Moor has been significantly affected by Heather Beetle in the past few years but amongst the stops the natural life cycle of the heather especially in the old degenerate stands is also a factor. As highlighted in the Baseline survey conclusions management burning is being implemented on sites of mature/degenerate stands and each burn site is showing encouraging signs of healthy heather growth. The burning management will be a long term management tool and results from surveys further years down the line will give better results on the impact the burning is having on the health of the heather stands.

Molinia still remains dominant and undergrazed in all stops where it is found. Molinia is mentioned here as it is a major factor of Heather loss as it substantially out competes Heather if not kept in check. This continues to highlight the importance of cattle and pony grazing at the appropriate numbers and that the animals are grazing at the start of the growing Molinia season of around the end of April into May. Sheparding will also be an important management tool to ensure the stock are hefted to the areas of Molinia.



# ANNEX 1

## Survey Maps

### Map 1



Scale 1:7500 Map 1 of 1  
0 125 250 375 450m  
Drawn by Mike Pearce  
Date: 10/05/2012  
Project: 10050005  
© Natural England 2012  
North  
Natural England  
Riverside Chambers  
Castle Street  
Taunton  
Somerset  
TA1 4AP

Reproduced by permission of Ordnance Survey on behalf of HMSO.  
© Crown Copyright. Ordnance Survey Licence number: 10002221.



## Map 2



Drawn by: Mike Pearce  
 Date: 10/5/2012  
 Ref: r29990005  
 © Natural England 2012

Drawn by: Mike Pearce  
Date: 10/5/2012  
Ref: rz99990005  
© Natural England 2012

Scale 1:12500 Map 1 of 1

Scale 1:12500 Map 1 of 1

Reproduced by permission of Ordnance Survey on behalf of HMSO.  
© Crown copyright and database right 2012.  
All rights reserved. Ordnance Survey Licence number 100020201.



## **Annex 2 – Individual stop summaries from 1<sup>st</sup> survey 2013**

|          |                        |                                |
|----------|------------------------|--------------------------------|
| Stop 1 – | Heather height:        | 2-6"                           |
|          | Heather condition:     | High dieback in poor condition |
|          | Growth stages present: | Pioneer (recent burn)          |
|          | Grazing pressure:      | a little heavy                 |
|          | Flowering:             | None                           |
|          | Habitat category:      | Dry heath with Molinia         |
|          | Dwarf species present: | Calluna and Bilberry           |

---

|          |                        |                                  |
|----------|------------------------|----------------------------------|
| Stop 2 – | Heather height:        | 6-24"                            |
|          | Heather condition:     | High dieback in old heather      |
|          | Growth stages present: | Mature/degenerate, some building |
|          | Grazing pressure:      | Low                              |
|          | Flowering:             | some                             |
|          | Habitat category:      | Dry Heath                        |
|          | Dwarf species present: | Calluna and Bilberry             |

---

|          |                        |                            |
|----------|------------------------|----------------------------|
| Stop 3 – | Heather height:        | up to 15"                  |
|          | Heather condition:     | poor                       |
|          | Growth stages present: | Mature/degenerate          |
|          | Grazing pressure:      | Low                        |
|          | Flowering:             | some                       |
|          | Habitat category:      | Molinia dominant Dry Heath |
|          | Dwarf species present: | Calluna and Bilberry       |

---

|          |                        |                   |
|----------|------------------------|-------------------|
| Stop 4 – | Heather height:        | up to 30"         |
|          | Heather condition:     | Good              |
|          | Growth stages present: | Mature/degenerate |
|          | Grazing pressure:      | minimal           |
|          | Flowering:             | good              |
|          | Habitat category:      | Dry Heath         |
|          | Dwarf species present: | Calluna           |

---

|          |                        |   |
|----------|------------------------|---|
| Stop 5 – | Heather height:        | up to 30"   |
|          | Heather condition:     | good  |
|          | Growth stages present: | Mature/degenerate with some<br>pioneer and building |
|          | Grazing pressure:      | low   |
|          | Flowering:             | good  |
|          | Habitat category:      | Dry Heath   |
|          | Dwarf species present: | Calluna and bilberry                                |

---

|          |                        |                                |
|----------|------------------------|--------------------------------|
| Stop 6 – | Heather height:        | up to 30"                      |
|          | Heather condition:     | good                           |
|          | Growth stages present: | Mature/degen with some pioneer |
|          | Grazing pressure:      | minimal                        |
|          | Flowering:             | some                           |
|          | Habitat category:      | Dry Heath                      |
|          | Dwarf species present: | Calluna and Bilberry           |

|          |                        |              |
|----------|------------------------|--------------|
| Stop 7 – | Heather height:        | up to 36"    |
|          | Heather condition:     | good         |
|          | Growth stages present: | Mature/degen |
|          | Grazing pressure:      | minimal      |
|          | Flowering:             | good         |
|          | Habitat category:      | Dry Heath    |
|          | Dwarf species present: | Calluna      |

---

|          |                        |                                 |
|----------|------------------------|---------------------------------|
| Stop 8 – | Heather height:        | up to 24"                       |
|          | Heather condition:     | good with some dieback          |
|          | Growth stages present: | Mature/degen with some building |
|          | Grazing pressure:      | minimal                         |
|          | Flowering:             | good                            |
|          | Habitat category:      | Dry Heath                       |
|          | Dwarf species present: | Calluna and Bilberry            |

---

|          |                        |                                 |
|----------|------------------------|---------------------------------|
| Stop 9 – | Heather height:        | up to 30"                       |
|          | Heather condition:     | poor/leggy                      |
|          | Growth stages present: | Mature/degen                    |
|          | Grazing pressure:      | minimal                         |
|          | Flowering:             | average                         |
|          | Habitat category:      | Dry heath with dominant molinia |
|          | Dwarf species present: | Calluna and Bilberry            |

|           |                        |                      |
|-----------|------------------------|----------------------|
| Stop 10 – | Heather height:        | up to 12”            |
|           | Heather condition:     | good                 |
|           | Growth stages present: | Pioneer and building |
|           | Grazing pressure:      | Right level          |
|           | Flowering:             | some                 |
|           | Habitat category:      | Dry Heath            |
|           | Dwarf species present: | Calluna and Bilberry |

---

|           |                        |                      |
|-----------|------------------------|----------------------|
| Stop 11 – | Heather height:        | up to 24”            |
|           | Heather condition:     | average some dieback |
|           | Growth stages present: | Mature/degen         |
|           | Grazing pressure:      | minimal              |
|           | Flowering:             | good                 |
|           | Habitat category:      | Dry Heath            |
|           | Dwarf species present: | Calluna and Bilberry |

---

|           |                        |                           |
|-----------|------------------------|---------------------------|
| Stop 12 – | Heather height:        | up to 24”                 |
|           | Heather condition:     | good                      |
|           | Growth stages present: | Mature with some building |
|           | Grazing pressure:      | Minimal                   |
|           | Flowering:             | Average to good           |
|           | Habitat category:      | Dry Heath                 |
|           | Dwarf species present: | Calluna and Bilberry      |



|           |                        |                                  |
|-----------|------------------------|----------------------------------|
| Stop 13 – | Heather height:        | up to 24”                        |
|           | Heather condition:     | good                             |
|           | Growth stages present: | All present with mature dominant |
|           | Grazing pressure:      | minimal                          |
|           | Flowering:             | average                          |
|           | Habitat category:      | Dry heath                        |
|           | Dwarf species present: | Calluna and Bilberry             |

---

|           |                        |  |
|-----------|------------------------|--|
| Stop 14 – | Heather height:        | up to 24”                                  |
|           | Heather condition:     | poor high dieback                          |
|           | Growth stages present: | Building and mature                        |
|           | Grazing pressure:      | minimal                                    |
|           | Flowering:             | some                                       |
|           | Habitat category:      | Wet Heath with good areas of sphagnum      |
|           | Dwarf species present: | Calluna, cross leaved heather and bilberry |

---

|           |                        |                                 |
|-----------|------------------------|---------------------------------|
| Stop 15 – | Heather height:        | up to 30”                       |
|           | Heather condition:     | poor                            |
|           | Growth stages present: | All phases mainly mature        |
|           | Grazing pressure:      | minimal                         |
|           | Flowering:             | good                            |
|           | Habitat category:      | Dry heath with dominant molinia |
|           | Dwarf species present: | Calluna and Bilberry            |

|           |                        |                                 |
|-----------|------------------------|---------------------------------|
| Stop 16 – | Heather height:        | up to 24”                       |
|           | Heather condition:     | good                            |
|           | Growth stages present: | All present mainly mature/degen |
|           | Grazing pressure:      | minimal                         |
|           | Flowering:             | good                            |
|           | Habitat category:      | Dry heath                       |
|           | Dwarf species present: | Calluna and bilberry            |

---

|           |                        |  |
|-----------|------------------------|--|
| Stop 17 – | Heather height:        | up to 36                                   |
|           | Heather condition:     | average                                    |
|           | Growth stages present: | All but mainly mature/degen                |
|           | Grazing pressure:      | minimal                                    |
|           | Flowering:             | average                                    |
|           | Habitat category:      | Fragmented dry heath with dominant Molinia |
|           | Dwarf species present: | Calluna                                    |

---

|           |                        |                               |
|-----------|------------------------|-------------------------------|
| Stop 18 – | Heather height:        | up to 30”                     |
|           | Heather condition:     | poor                          |
|           | Growth stages present: | Mainly degen with some mature |
|           | Grazing pressure:      | minimal                       |
|           | Flowering:             | poor                          |
|           | Habitat category:      | Fragmented Dry heath          |
|           | Dwarf species present: | Calluna and bilberry          |

|           |                        |                                   |
|-----------|------------------------|-----------------------------------|
| Stop 19 – | Heather height:        | up to 5"                          |
|           | Heather condition:     | poor (heather beetle and grazing) |
|           | Growth stages present: | pioneer (recent burn)             |
|           | Grazing pressure:      | over grazed                       |
|           | Flowering:             | none (possibly grazed off)        |
|           | Habitat category:      | Dry Heath                         |
|           | Dwarf species present: | Calluna and bilberry              |

---

|           |                        |  |
|-----------|------------------------|--|
| Stop 20 – | Heather height:        | up to 24"                              |
|           | Heather condition:     | poor (dieback)                         |
|           | Growth stages present: | Mature/degen with some building        |
|           | Grazing pressure:      | minimal                                |
|           | Flowering:             | good on live plants                    |
|           | Habitat category:      | Fragmented dry heath, Molinia dominant |
|           | Dwarf species present: | Calluna, cross leave and bilberry      |

---

|           |                        |                                 |
|-----------|------------------------|---------------------------------|
| Stop 21 – | Heather height:        | up to 24"                       |
|           | Heather condition:     | good                            |
|           | Growth stages present: | Mature/degen with some building |
|           | Grazing pressure:      | yes but below threshold         |
|           | Flowering:             | good                            |
|           | Habitat category:      | Dry heath                       |
|           | Dwarf species present: | Calluna                         |

|           |                        |                                    |
|-----------|------------------------|------------------------------------|
| Stop 22 – | Heather height:        | up to 10”                          |
|           | Heather condition:     | good                               |
|           | Growth stages present: | Pioneer and building (recent burn) |
|           | Grazing pressure:      | Just within threshold              |
|           | Flowering:             | good                               |
|           | Habitat category:      | Dry heath                          |
|           | Dwarf species present: | Calluna and bilberry               |

---

|           |                        |                      |
|-----------|------------------------|----------------------|
| Stop 23 – | Heather height:        | up to 30”            |
|           | Heather condition:     | good                 |
|           | Growth stages present: | Mature               |
|           | Grazing pressure:      | minimal              |
|           | Flowering:             | good                 |
|           | Habitat category:      | Dry Heath            |
|           | Dwarf species present: | Calluna and bilberry |

---

|          |                        |                        |
|----------|------------------------|------------------------|
| Stop 24– | Heather height:        | up to 30”              |
|          | Heather condition:     | poor                   |
|          | Growth stages present: | Mature/degen           |
|          | Grazing pressure:      | minimal                |
|          | Flowering:             | some/average           |
|          | Habitat category:      | Dry heath with Molinia |
|          | Dwarf species present: | Calluna and bilberry   |

|           |                        |                                     |
|-----------|------------------------|-------------------------------------|
| Stop 25 – | Heather height:        | 2-5"                                |
|           | Heather condition:     | good                                |
|           | Growth stages present: | pioneer                             |
|           | Grazing pressure:      | heavy on dominant bilberry          |
|           | Flowering:             | none heather to young               |
|           | Habitat category:      | Dry heath                           |
|           | Dwarf species present: | Bilberry dominant with some Calluna |

---

|           |                        |                      |
|-----------|------------------------|----------------------|
| Stop 26 – | Heather height:        | up to 36"            |
|           | Heather condition:     | poor                 |
|           | Growth stages present: | mature/degen         |
|           | Grazing pressure:      | low                  |
|           | Flowering:             | low due to dieback   |
|           | Habitat category:      | Dry heath            |
|           | Dwarf species present: | Calluna and Bilberry |

---

|           |                        |                              |
|-----------|------------------------|------------------------------|
| Stop 27 – | Heather height:        | up to 3"                     |
|           | Heather condition:     | average                      |
|           | Growth stages present: | pioneer (1 year burn site)   |
|           | Grazing pressure:      | some grazing under threshold |
|           | Flowering:             | none                         |
|           | Habitat category:      | Dry heath                    |
|           | Dwarf species present: | Calluna and bilberry         |

|           |                        |  |
|-----------|------------------------|--|
| Stop 28 – | Heather height:        | up to 3"                                       |
|           | Heather condition:     | average  |
|           | Growth stages present: | Pioneer (2-3 year burn)                        |
|           | Grazing pressure:      | minimal  |
|           | Flowering:             | none   |
|           | Habitat category:      | Dry Heath                                      |
|           | Dwarf species present: | Calluna with some Cross leaved and<br>bilberry |

---

## **Annex 3 – Results of 2012 Baseline survey shown as DAFOR**

### **Dwarf species present**

Heather (Calluna), as was expected, was dominant throughout and was present at every stop.

Bilberry was present at 65% (abundant) of the stops.

Erica species (Bell and Cross leaved) was present at 11% (occasional) of the stops.

### **Condition of the Heather (Calluna only)**

Of the 28 stops, six (22% (occasional)) of them could be defined as the heather being in good health. The other 22 stops the heather showed signs of varied degrees of dieback with 48% (Frequent) with heather showing 0-50% dieback occurrence and 30% (Frequent) showing 51-99% dieback.

### **Growth Stages present**

For the purposes of this report Heather growth stages are described in four stages Pioneer, Building, mature and degenerate.

Pioneer stage is when the heather develops from seed into small pyramid shaped plants. Building is when the heather forms a closed canopy. Mature is when the heather plant becomes woody, with thick stems and fewer green shoots, the canopy will begin to open up and other plant species, such as mosses, begin to establish, and Degenerate the central branches of the plant tend to die off, creating gaps in the centre of the bush in which heather seedlings may sometimes establish.

Pioneer stage is present in 38% (Frequent) of the stops of which four of these occurrences were on areas of recent burns (up to 5 years). Building stage is present on 14% (Occasional) of the stops. Mature stage is present on 73% (top end of Abundant) of the stops and degenerate stage is present on 44% (Frequent) of the stops.

### **Management Burning**

Management burning in various degrees of times (up to 5 years ago) occurred on six (22%) of the stops and it was also noted that five (19%) of the stops could benefit from management burning.

### **Heather Height (as an average at each stop)**

This attribute was grouped in increments of 10 inches, it was found that 5 out of the 28 stops fell in the 0-10ins range (Occasional), 4 stops in the 11-20ins range (occasional), 14 stops in the 21-30ins range (frequent) and 5 in the 31-40ins range (occasional).

### **Occurrence of Flowering Heather**

This was minimal throughout all the stops with only one stop showing good signs of flowering heather.

### **Grazing Pressure**

In general the grazing pressure was very low with large areas of *Molinia* grassland not being grazed off and creating matting. It was found that at 25 (88%) of the stops that there was very little grazing pressure with large areas of ungrazed grass and little dunging. The other 3 (12%) stops there was higher grazing pressure with signs of grasses being grazed and more signs of dunging.