



RODBOROUGH COMMON: SPECIAL AREA OF CONSERVATION

Reports on aerial and botanical surveys conducted to monitor pathway erosion on Rodborough Common (SAC)

- **REPORT 1.** Analysis of Footpath Network in Rodborough Common area. Aerial Images 1950–2017 analysed by Ashraf Afana, National Trust, April 2018
- **REPORT 2.** Report on the botanical surveying of footpaths, June / July 2017
Conducted by Stroud Valleys Project
- **TARGETS AND RECOMMENDATIONS.** Stroud Valleys Project, March 2019



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Aerial image of Rodborough Common taken in June 1950



Rodborough
Fort

Drone survey composite image of Rodborough Common, July 2017



Analysis of Footpath network in Rodborough Commons area

Summary:

This document is aimed at quantifying the evolution of footpath extents between 1950 and 2017. In order to achieve this goal, 8 images were used corresponding to the years 1950, 1971, 1972, 1980, 1982, 2012, 2014, and 2017. As mentioned in the previous document, the dataset is comprised of one UAV image captured on the 6th July 2017 and several aerial photographs consist of two categories. The first one is black and white images for the years 1950-1982. The second category is formed of coloured photographs and acquired on 28th March 2012 and 15th April 2014. The methodology applied to this work consists of digitising the different images on the overlapping area and compare the footpath network extents for each year.

Results:

The digitised footpath network from the different years was generated in an overlapping area of about 0.36 km² (Fig.1). The extent of the footpath network of the analysed area throughout the different years is shown in table 1. The result of Table 1 shows a clear increase in the footpath network extent throughout the analysed years from 10.93 km in 1950 to 21.51 km in 2017. In terms of the footpath network density, the last year shows a ratio of ≈ 60 km/km², which indicates a highly dissected area marked by the presence of different types of footpath (e.g. width, parallel, proximity, etc.) and usage (e.g. human, cattle, etc.). Figure 2 shows the evolution trend-line of the footpath network in the studied area during the different years. The average yearly increment in the footpath length since 1950-2017 is about 0.158 km. However, with an exponential scenario, this average would increase to 0.184 km/year.

Table 1. Footpath network extent and density in the Rodborough Commons

No.	Year	Length (km)	Density (km/km ²)
1	1950	10.93	30.35
2	1971	12.68	35.22
3	1972	12.35	34.30
4	1980	13.15	36.51
5	1982	14.47	40.19
6	2012	15.43	42.86
7	2014	17.33	48.12
8	2017	21.51	59.73

The above results highlight a significant degradation rate in the vegetation community underlined by the annual increase in footpath network extent in the Rodborough Commons area. However, the evolution rate in figure 2 clearly underpins the need for more data in the coming years to confirm the above results. Likewise, new images should be able to confirm if the increase in the last 3 years corresponds merely to a better quality of data and hence better visualisation of the footpath location, or if the increase corresponds to more usage of footpaths in the area that may cause a real degradation in the surrounding vegetation community.

Summary and Recommendation for future work:

The results highlight a yearly average increase in footpath network extents of about 0.15 km. Likewise, the area under study is shown to be highly dissected as in the last year the footpath network density approximate a ratio of 59.7 km/km². The footpath network density could be of



considerable importance in identifying the active travel and walkability indices (Cruise et al. 2017) in the Rodborough Commons area.

A solid approach for future work would imply a plan for a new UAV flight to capture the footpath network extent for the year 2018. The acquired new data will validate and confirm the above results and provide the foundation for a new spectral analysis to develop a risk map of grassland degradation in the Rodborough Commons area.

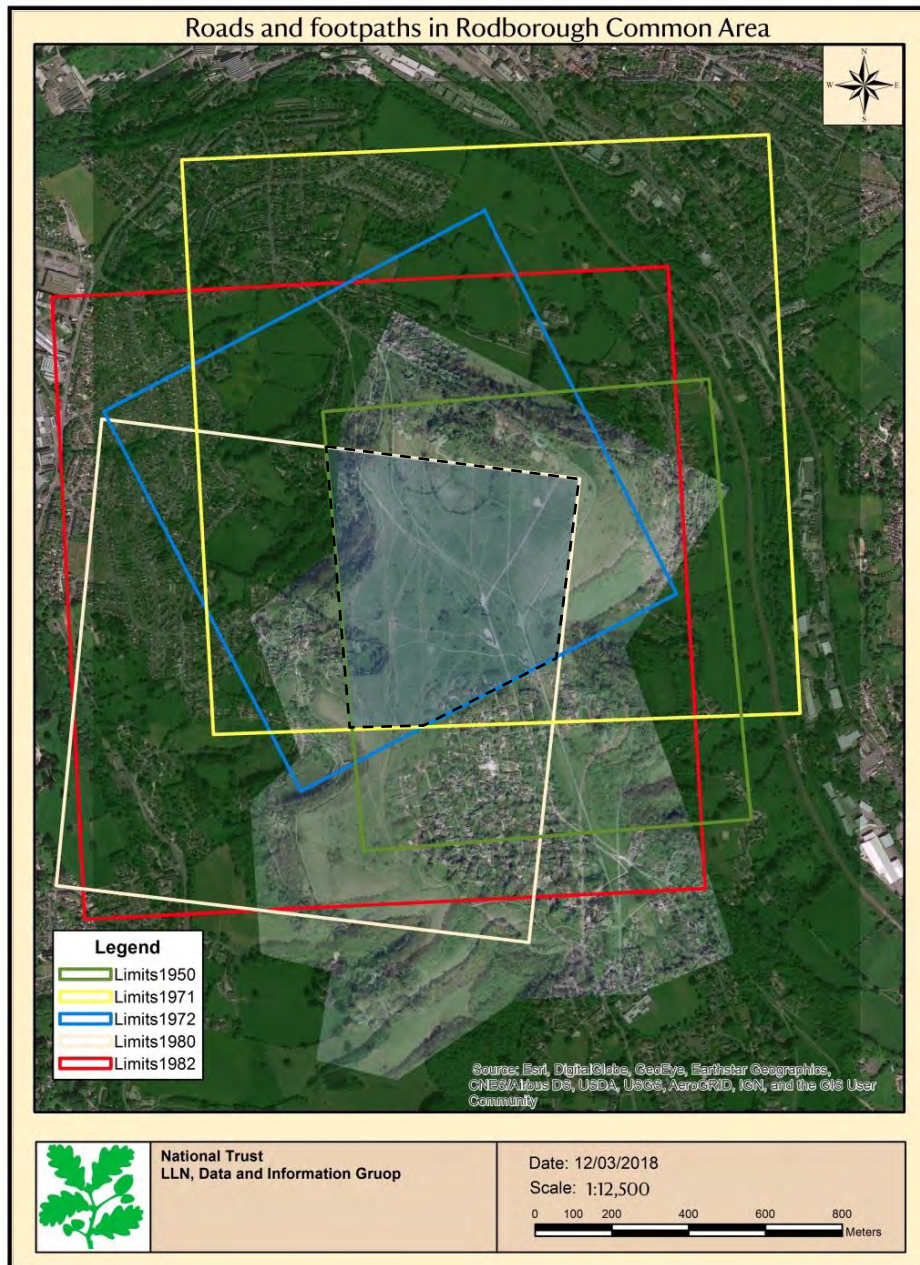


Figure 1. Available coverage, highlighted in dotted line, of all the images used for the Rodborough Commons study area.

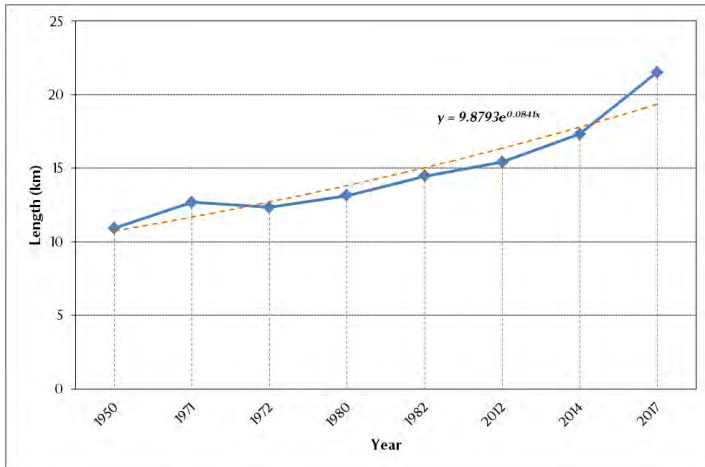


Figure 2. Evolution of the yearly extents of the footpath network in the Rodborough Commons.

References:

Cruise, S., Hunter, R., Kee, F., Donnelly, M., Ellis, G., & Tully, M. (2017). A comparison of road- and footpathbased walkability indices and their associations with active travel. *Journal of Transport and Health*. DOI: 10.1016/j.jth.2017.05.364.

REPORT ON THE BOTANICAL SURVEYING OF FOOTPATHS ON RODBOROUGH COMMON (SAC), SUMMER 2017

Summary

In order to monitor the impact of footfall on flowering grassland on Rodborough Common, botanical surveys were conducted across 2 of the narrower paths on the plateau. Methodology and findings are presented in this report, which provides a baseline for further monitoring.

It is recommended that surveys of the 2 sites identified in this report are repeated every 2/3 years. Further surveys of narrow paths on the Common could be conducted earlier in the flowering season in order to record more species, ideally in May.

The exercise of surveying the footpaths provided a secondary function. It was noted that the survey attracted public interest and this suggests a way of raising public awareness of conservation issues on Rodborough Common.

Rodborough Common Special Area of Conservation

Erosion Survey: Monitoring wear on footpaths

1. Introduction

Over the last 2 decades wear has greatly increased on Rodborough Common, with widening of main paths, particularly near car parks, and increased numbers of new paths which were previously just cattle tracks. Cattle usually form narrow tracks 20-30cm wide.

The wear is thought to result from increased numbers of walkers and dog-walking over recent decades on this comparatively small site. The increased wear is visible in aerial photos over the years.

2. Monitoring methodology

It was proposed to monitor narrower paths for increased effects of wear over time, both on path width and botanical diversity. One criteria was to make the exercise as simple as possible for repeating in future years, possibly by non-experts. In this first year however it was recorded more fully

- by establishing transects across selected paths, each containing 5 quadrats
- using a CG3 / CG5 species list with reduced number of grasses. (As a way to involve volunteers in future surveys, a limited number of more easily recognised CG3 /5 indicator species could possibly be selected).

Re-finding transects in subsequent years is likely to be one of the most challenging tasks. GPS is insufficiently accurate, and the Common has few reference points from which one can take measurements. An ideal solution would be to insert 2 short copper pipes at transect ends, to be found by metal detector in addition to measurements.

Monitoring Path 1:

9th June 2017: Surveyors D.Roberts and S.Rowlatt

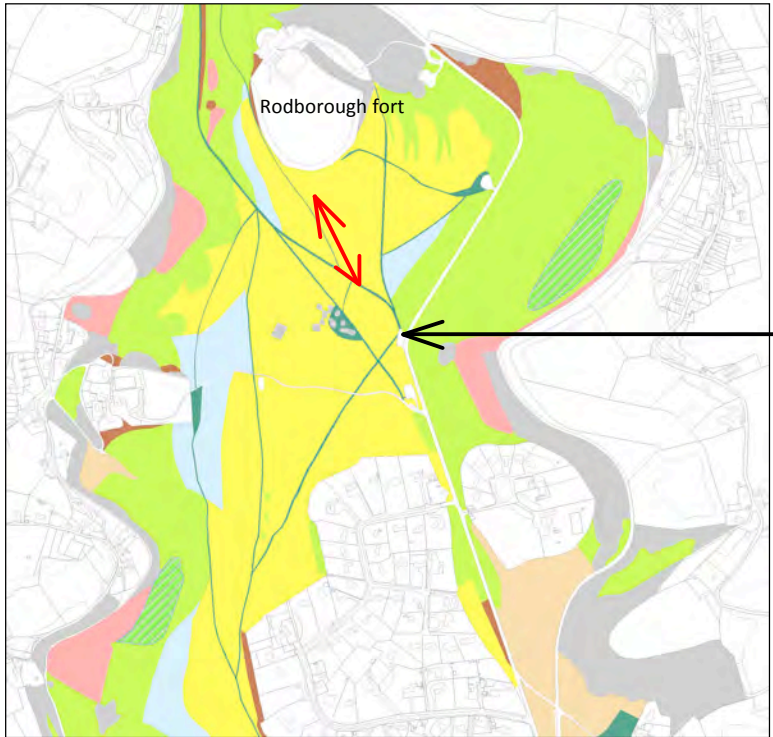
Method

1. A location was selected where the path had clearly widened through use in recent years. (S.Rowlatt has walked the Common regularly since around 2000, and has clear memories of path increases. Aerial photos also appear to support this.)
For location see Map in next section.
2. A sight-line was established running due east-west across the path, established by compass in relation to certain bushes. (There is the concern that such bushes might be eliminated in future years.) In addition gps readings were taken for the transect ends. The sightline was marked by bamboo sticks and a long measuring tape.
For location details see diagram in 3. below

1. Selecting Path 1 and location of transect on NE aerial habitat map

[Aerial photos from Natural England, Rodborough Common 06/03/17 1:7,007. Map Scale at A3: Map Projection: British National Grid, Map Produced from WebMap. Contains, or is derived from, information supplied by Ordnance Survey. © Crown copyright and database rights 2017. Ordnance Survey 100022021 APGB Aerial photography © Bluesky International Ltd/ Getmapping PLC.]

Path 1 indicated by **red arrow**

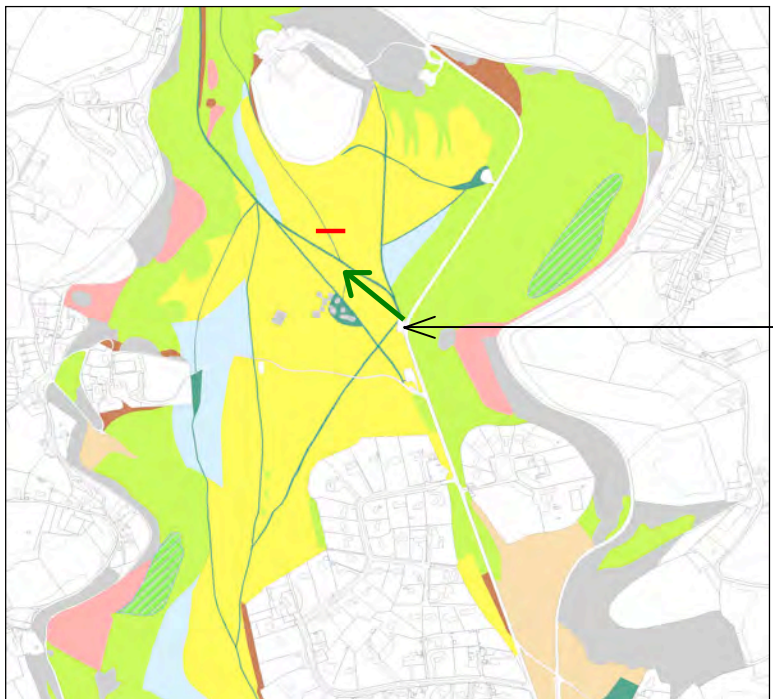


central car park

2. To reach transect location

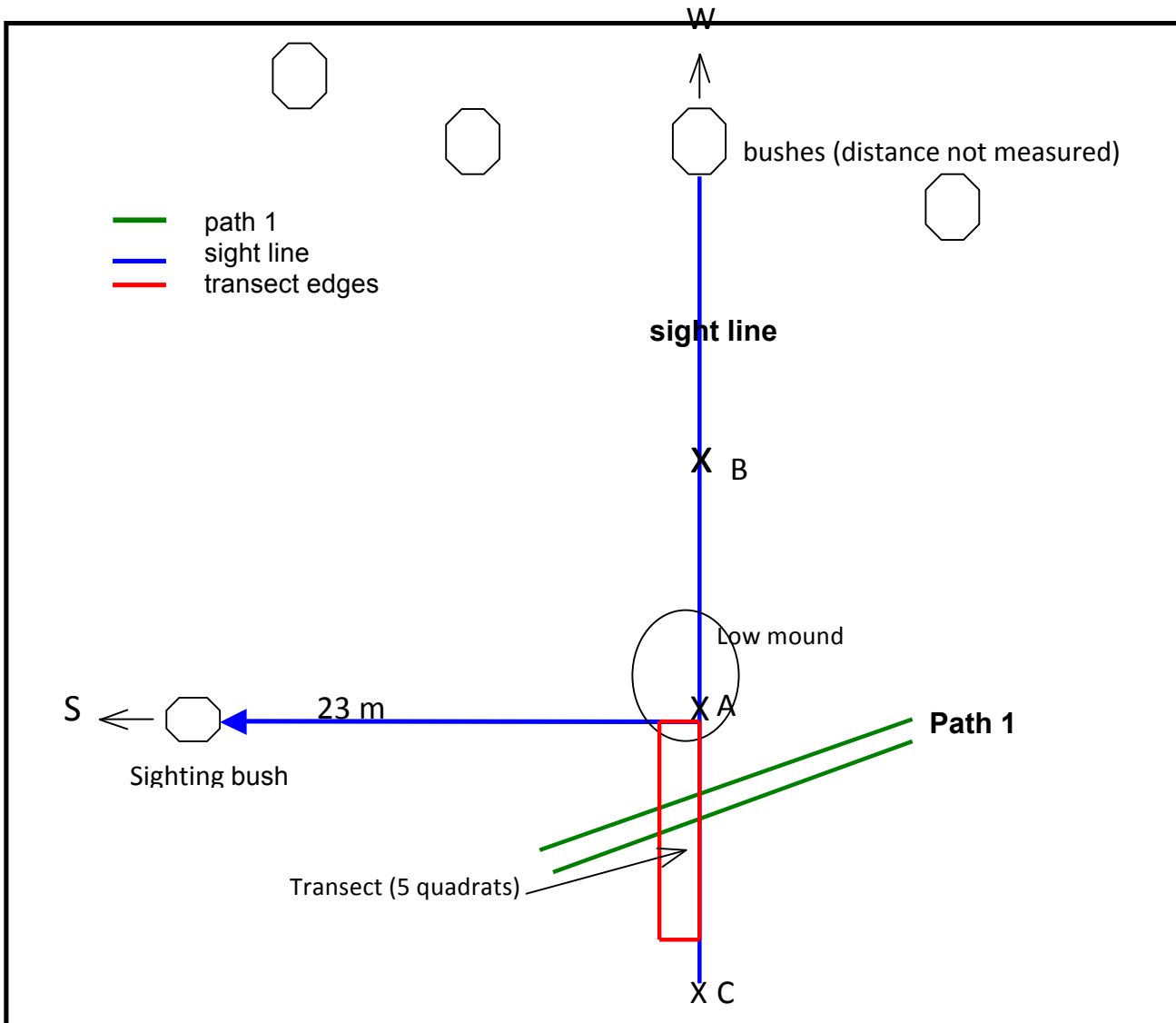
Walk WNW from car park along **main grass track** (indicated by **green arrow**). (Note ridges along each side.) Walk on track to start of narrow **Path 1 on right**, (Grid ref SO 85011 / 03715) which heads NW towards western edge of Rodborough Fort.

From right-hand ditch at start of Path 1 walk 74 metres (tape or trundle wheel) to transect position (shown on map as **red line**.) You will see a low mound on the left. (Grid Ref SO 84975/03787)



central car park

3. Establishing the sight line for the transect on Path 1



(OS Grid references supplied below, but may have margin of error.)

Establishing the sightline / transect requires two people.

Equipment : compass, trundle wheel, long measuring tape to mark sightline from B to C, number of 1m. bamboo canes, gps recorder; four or more 2-metre canes for surveying 2x 2m quadrats.

Instructions for establishing sightline

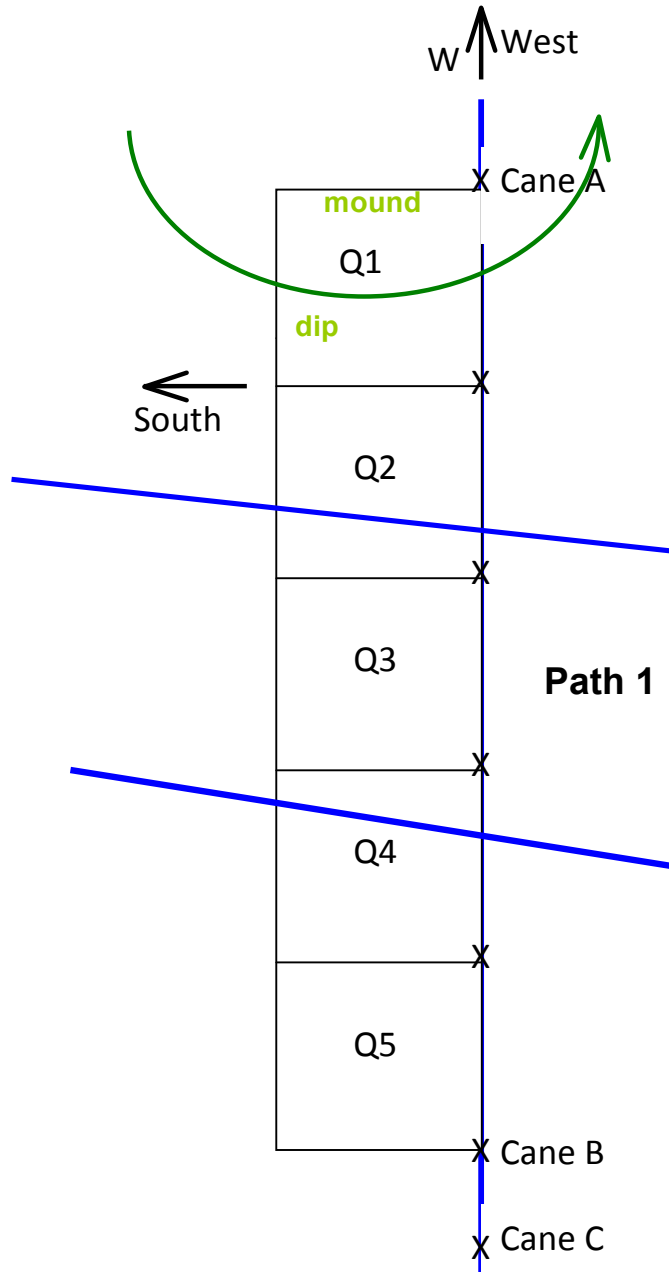
- 1) Insert cane at Point A, using compass to ensure **bush to left** lies due South
- 2) Use compass to line up this cane with the distant **middle** bush to **due west**. (NB much further away than shown in diagram)
- 3) Check that **bush to the south** is 23 m. away, measured with trundle wheel.
- 4) Insert cane at **point B** on sightline (approximately 10m away), then another at point C to south, to form the sightline. **Lay long measuring tape taut** along sight line from A to C

GPS points

Bush on sightline to west	SO 84926 / 03783
Cane A on mound	SO 84975 / 03787
Cane B transect corner	SO 84943 / 03791
Sighting bush 23m South	SO 84970 / 03765

4. Establishing five 2x2m. quadrats along east-west sightline to form transect

- Place the long measuring tape taut between canes A and C
- Mark out the 5 2x2m quadrats along south side of sightline (tape) with 1 m or 2m bamboos between A and B. (as described overleaf). They will cross **Path 1**.
- **Quadrat 1 starts from Cane A** on mound, then **Q 2, Q3, Q4 and Q5** follow going eastwards across path. Survey in that order.



GPS points

Bush in sightline to west	SO 84926 / 03783
Cane A on mound	SO 84975 / 03787
Cane B transect corner	SO 84943 / 03791
Sighting bush 23m south	SO 84970 / 03765

Preliminary Observations of quadrats

Quadrat 1 located on part of one of Rodborough's mounds, perhaps 30-50 cm above the path level. Adjoined by a depression ("dip" shown in diagram), with damper and much taller vegetation. Flora on the upper part of the mound was very short and diverse, including fragrant orchids.

Quadrat 2 Included the western edge of path. The quadrat showed signs of wear, with reduced plant height and diversity.

Quadrat 3 in the centre of the path. Vegetation mainly short showing much wear, including some bare soil, and flora much less diverse.

Quadrat 4 east of the path showed some wear on its western side, but the remainder much less worn - vegetation quite short, but dense and diverse.

Quadrat 5 away from the path, in half the vegetation quite low but other half much taller.

General Observation

Vegetation in the surrounding Common seemed under-grazed for June, and no cattle were seen, in contrast to large numbers present on Minchinhampton Common.

5. The Survey

Quadrats 1-5 were surveyed in order, recording species abundance on the prepared Sheet (Appendix_2_RodboroughCommonPATH_SURVEY_RECORDING SHEET_TEMPLATE) of CG5 species plus others. The Domin scale of abundance was used.

Results were recorded on an Excel spreadsheet (Appendix_1_RodboroughCommonPathSurvey_2017_Final_DR)



Site of survey Path 1 bearing left towards Rodborough Fort. Image taken in March 2019

Rodborough Common

Monitoring wear on footpaths : Path 2

17th July 2017 Surveyors D.Roberts and S.Rowlatt

1. Methodology

- Path 2 was much narrower than Path 1. Passing through species-rich grassland, it was known (by S Rowlatt) to have been a cattle path around 2000, but has now widened through use. The original cattle path 20-30cm wide is visible as patches of bare soil. The wider path is covered by low, worn vegetation. (About 5m north of transect 2 the path doubled, forming 2 narrow pathways.)
- As with Path 1 the transect site chosen was quite close to a mound to aid relocation. Walkers tend to avoid mounds, and so any path width increase would tend away from it.
- Using the righthand (northern) end of an iron seat as the view point (approx 76m away, part obscured by a large bush), an east-west sight-line was established.
- Small upright bamboo sticks and a long measuring tape formed one side of the transect of 5 2x2m quadrats, across the path. As with Path 1, the first bamboo stick was placed on the mound.
- Species were then recorded in quadrats using the recording sheet devised for Path 1, based on CG3 / CG5 species plus any others found, and then later entered into an Excel spreadsheet.

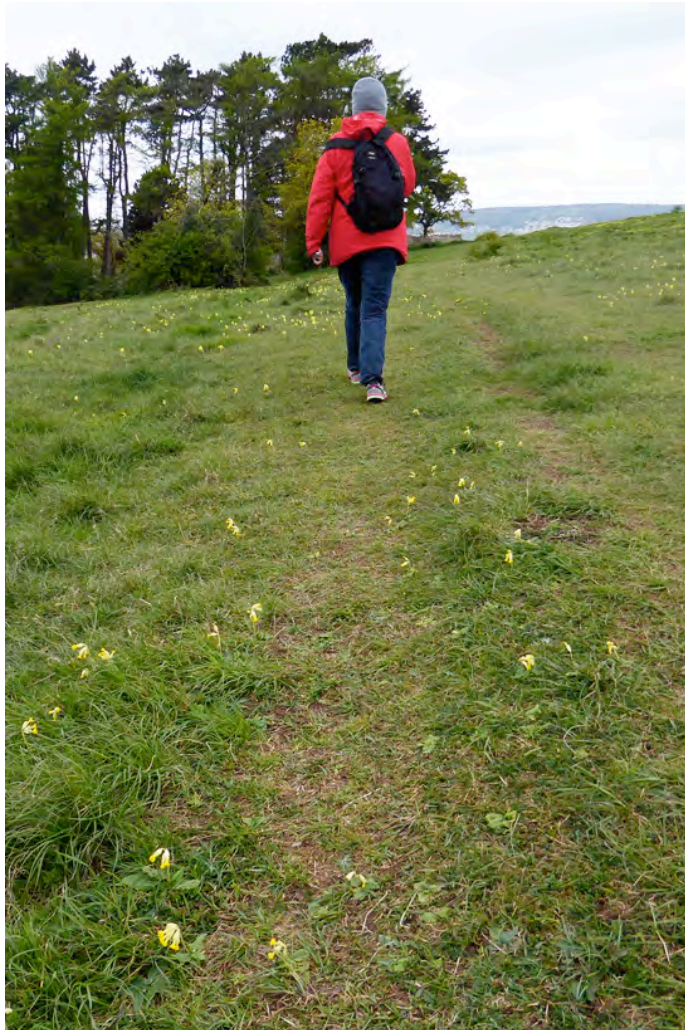
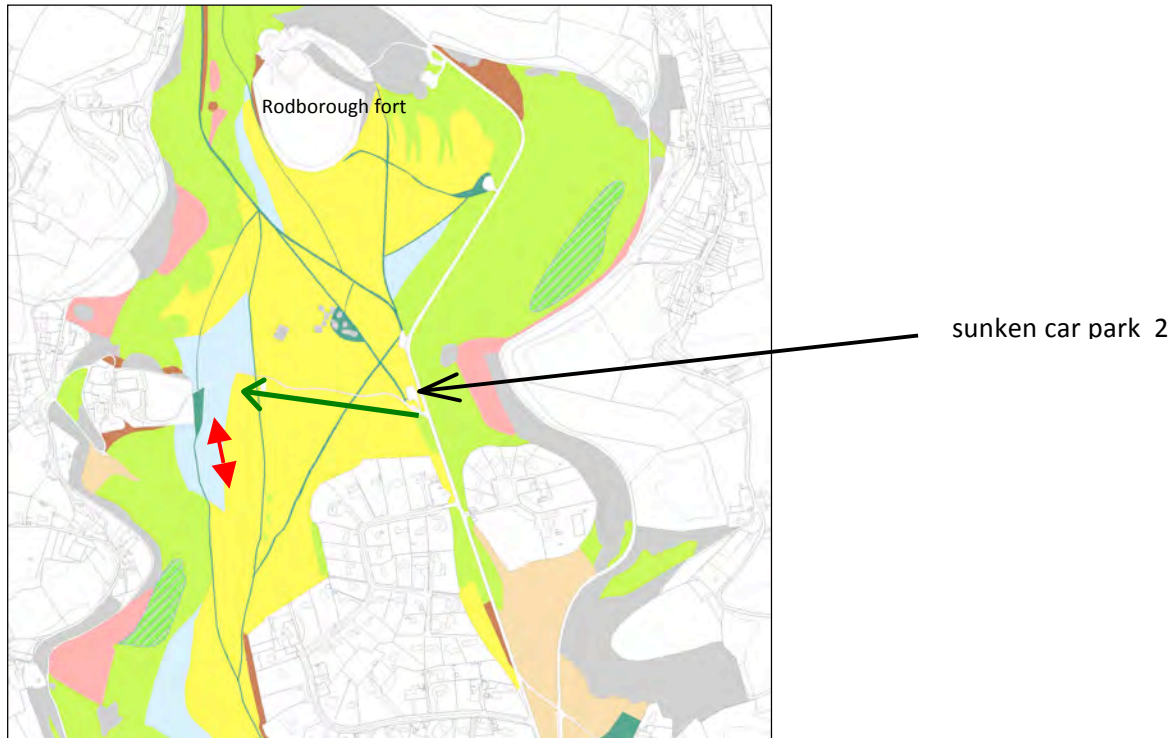


Image of survey Path 2, April 2017. Example of a relatively narrow path, reported to previously have been a narrow, single cattle track, that appears to be widening.

Path 2 and position of monitored transect (shown on NE aerial habitat map)

[Aerial photos from Natural England, Rodborough Common 06/03/17 1:7,007. Map Scale at A3: Map Projection: British National Grid, Map Produced from WebMap. Contains, or is derived from, information supplied by Ordnance Survey. © Crown copyright and database rights 2017. Ordnance Survey 100022021. APGB Aerial photography © Bluesky International Ltd/ Getmapping PLC.]

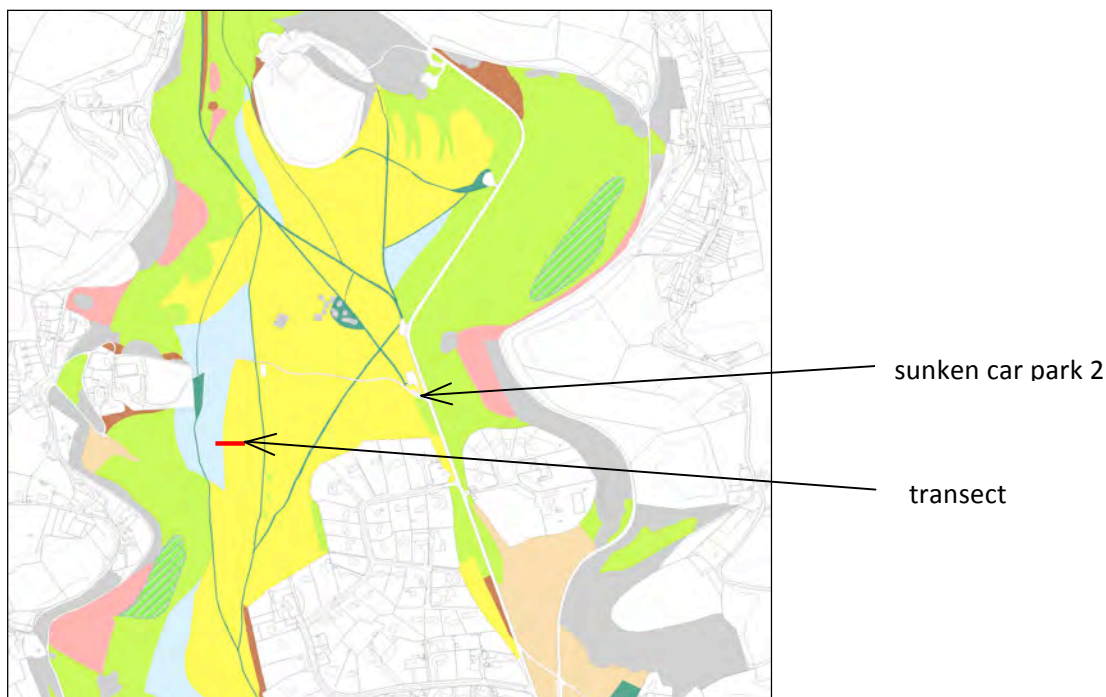
Path 2 indicated by red arrow



To reach transect

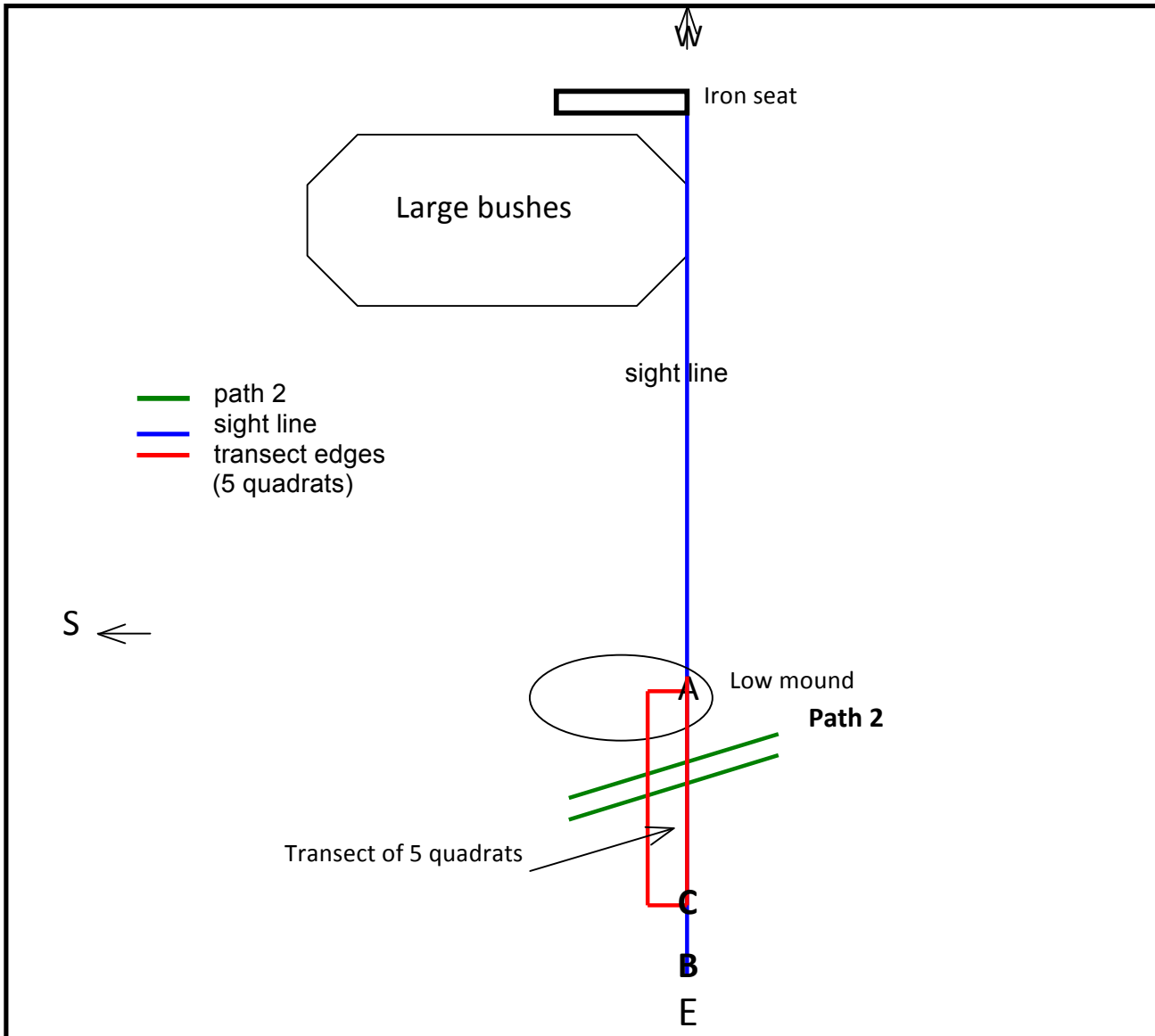
From beside the sunken car park, walk along the gravel road leading to the walled house. In front of the stone wall and entrance gate turn left, where a well-worn path leads under the conifers and bears right onto the open grass viewing area in front of bushes with a seat. **Instead, bear slightly uphill left of the bushes on a narrow, less-worn path in grassland.** Go 71 metres along this path (measured from end of the stone wall) to GPS OS ref SO84805/03407

Location of transect



2) Establishing the sight line for the transect on Path 2

NB **east-west** sight-line shown vertically in this diagram (in contrast to previous maps)



OS Grid references supplied have margin of error.

Establishing the sightline / transect requires two people.

Equipment : compass, trundle wheel, long tape to measure transect / mark sightline, 1m. bamboo canes, gps recorder. Ideally number of four 2-metre canes for 2x2m quadrats.

Instructions

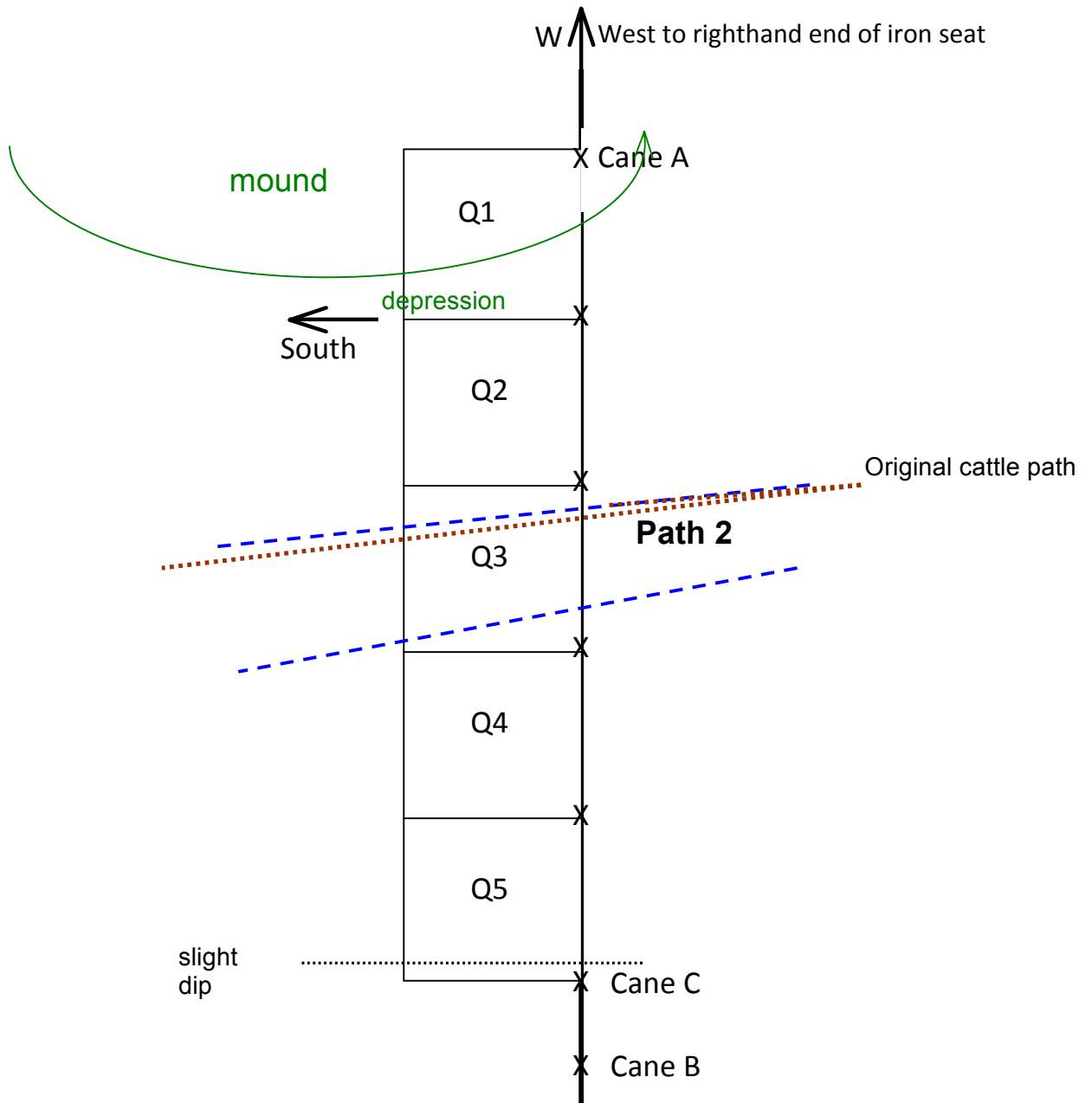
- 1) Use compass to insert cane A on mound so that right hand end of iron seat lies due West.
- 2) **At eastern end** use compass to insert cane B (at any distance) lined up with cane A on mound and end of seat to **due west**.
- 3) Lay long measuring tape taut along sight line from cane A and insert cane C to mark transect corner checking with compass that it is due west.

GPS points

Iron seat end in sightline to west	-	SO84770/03397
Cane A on mound	-	SO84805/03407
Cane C transect corner	-	SO84814/03410

3) **Establishing five 2x2m. quadrats along east-west sightline to form transect**

- Mark out the 2x2m Quadrats along south side of line of sight using 1 m bamboos between A and C. as described. They will cross **Path 2**.
- **Q1 starts from Cane A** on mound, then **Q 2, Q3, Q4 and Q5** follow going eastwards across path. Survey in that order.



4. **Preliminary quadrat observations**

Quadrat 1

Located on clump on northern end of the low mound, covered by species rich vegetation

Quadrat 2

Included the area between the edge of the mound and the path, including a depression with taller vegetation.

Quadrat 3

Included the present path, with no bare earth and covered by short vegetation. The original cattle path ran down the western edge. On the eastern side the ground rose very slightly

Quadrat 4

The ground continued to rise slightly from the path, and was covered with low vegetation

Quadrat 5

The slightly higher ground became more level. The vegetation was not worn, and therefore taller. At the uppermost edge there was an unexplained slight narrow "ditch" 20 cm wide. – an ancient narrow cattle path, now overgrown?

General Observation

The late timing of the exercise in mid-July meant that flowering was over for many species, making recording of many species harder. In future do exercise within last 3 weeks of June.

As with Path 1 there were signs of under-grazing.

5. The survey

Quadrats 1-5 were surveyed in order, recording species abundance on the prepared Sheet of CG5 species plus others. The Domin scale of abundance was used.

Results were recorded on an Excel spreadsheet
(Appendix1 Path1 and Appendix 1 Path 2)

BOTANICAL ANALYSIS OF SURVEY RESULTS, PATHS 1 AND 2

PATH 1 Herbs present across survey quadrats 1 – 5 , in order of frequency:

White Clover (*Trifolium repens*)
Salad Burnet (*Sanguisorba minor*)
Ribwort Plantain (*Plantago lanceolata*)
Common Rock-rose (*Helianthemum nummularium*)
Yellow Rattle (*Rhinanthus minor* agg.)
Hop Trefoil (*Trifolium campestre*)
Birdsfoot Trefoil (*Lotus corniculatus*)
Fragrant Orchid (*Gymnadenia conopsea*)
Daisy (*Bellis perennis*)
Cowslip (*Primula veris*)
Hoary plantain (*Plantago media*)
Lady's Bedstraw (*Galium verum*)
Bulbous Buttercup (*Ranunculus bulbosus*)
Fairy flax (*Linum catharticum*)
Common Milkwort (*Polygala vulgaris*)
Mouse-eared chickweed (*Cerastium fontanum*)
Dwarf Thistle (*Cirsium acaule*)
Dandelion (*Taraxacum officinale*)
Wild Thyme (*Thymus praecox (drucei)*)
Mouse-ear Hawkweed (*Hieracium pilosella (Pilosella officinarum)*)
Common knapweed (*Centaurea nigra* agg.)
Burnet Saxifrage (*Pimpinella saxifrage*)
Small Scabious (*Scabiosa columbaria*)
Self Heal (*Prunella vulgaris*)

Path 1 Grasses and Sedges:

The most common grasses and sedges recorded across the Path 1 quadrats were Red Fescue (*Festuca rubra* agg.) and Glaucous Sedge (*Carex flacca*). Quaking Grass (*Briza media*) also appeared in 3 of the 5 quadrats.

PATH 2 Herbs present across survey quadrats 1 - 5, in order of frequency:

Common Rock-rose (*Helianthemum nummularium*)
Birdsfoot Trefoil (*Lotus corniculatus*)
Ribwort Plantain (*Plantago lanceolata*)
Red Clover (*Trifolium pretense*)
Yellow rattle (*Rhinanthus minor* agg.)
Salad burnet (*Sanguisorba minor*)
Field Scabious (*Knautia arvensis*)
Lady's bedstraw (*Galium verum*)
Hoary Plantain (*Plantago media*)
Cowslip (*Primula veris*)
Squinancywort (*Asperula cynanchica*)
Common Knapweed (*Centaurea nigra* agg.)
Daisy (*Bellis perennis*)
Dwarf Thistle (*Cirsium acaule*)
Rough Hawkbit (*Leontodon hispidus*)
Wild Thyme (*Thymus praecox* (drucei))
Fairy flax (*Linum catharticum*)
Hairy Violet (*Viola hirta*)
Fragrant-orchid (*Gymnadenia conopsea*)
Meadow Vetchling (*Lathyrus pratensis*)
Dandelion (*Taraxacum officinale*)
Common spotted orchid (*Dactylorhiza fuchsii*)
Mouse-ear Hawkweed (*Hieracium pilosella* (*Pilosella officinarum*))
Small Scabious (*Scabiosa columbaria*)
Kidney Vetch (*Anthyllis vulneraria*)
Common Milkwort (*Polygala vulgaris*)

Path 2 Grasses and Sedges:

The most common grasses and sedges recorded were Quaking Grass (*Briza media*), Sweet Vernal Grass (*Anthoxanthum odoratum*), Glaucous Sedge (*Carex flacca*) and Spring Sedge (*Carex caryophylla*).

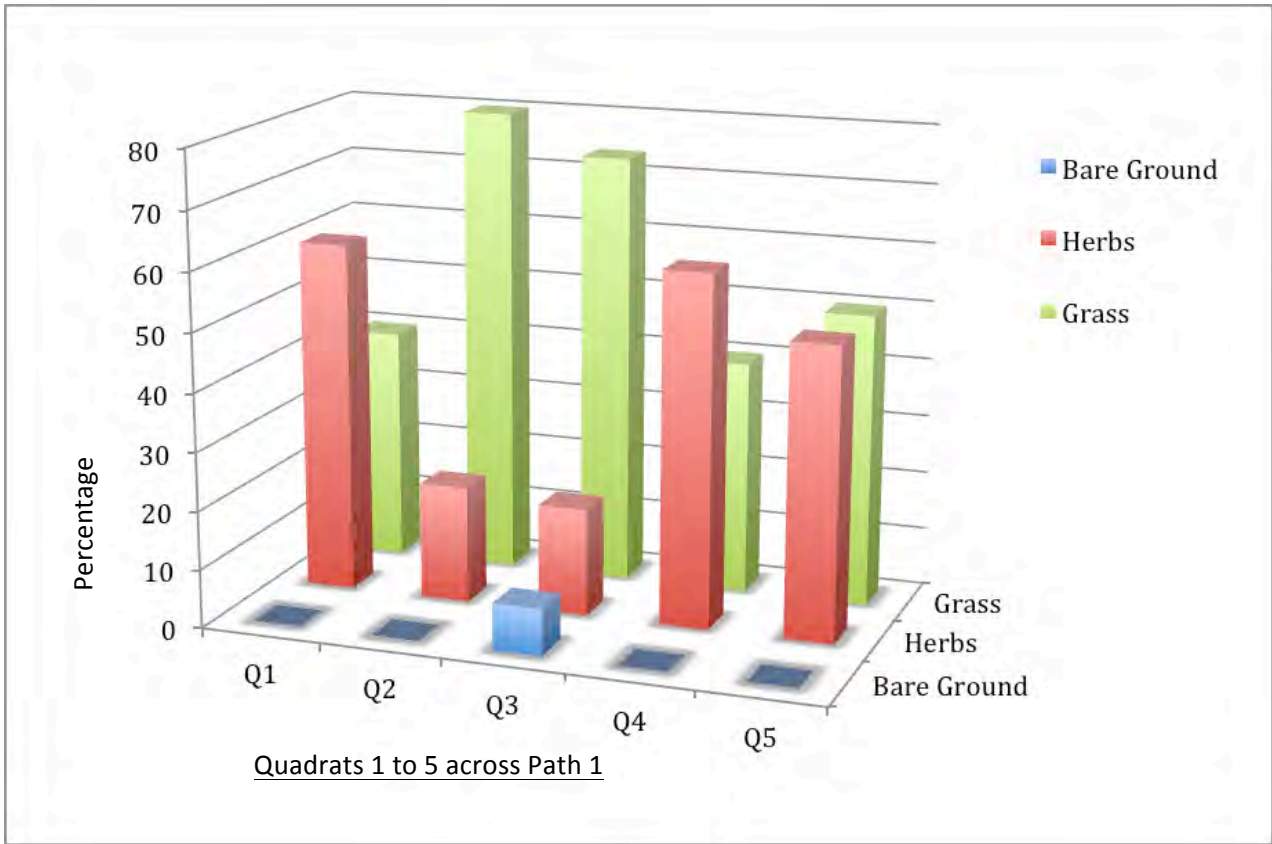
Bare Soil

8% bare soil was recorded in the centre of the wider path, Path 1 - Quadrat 3.

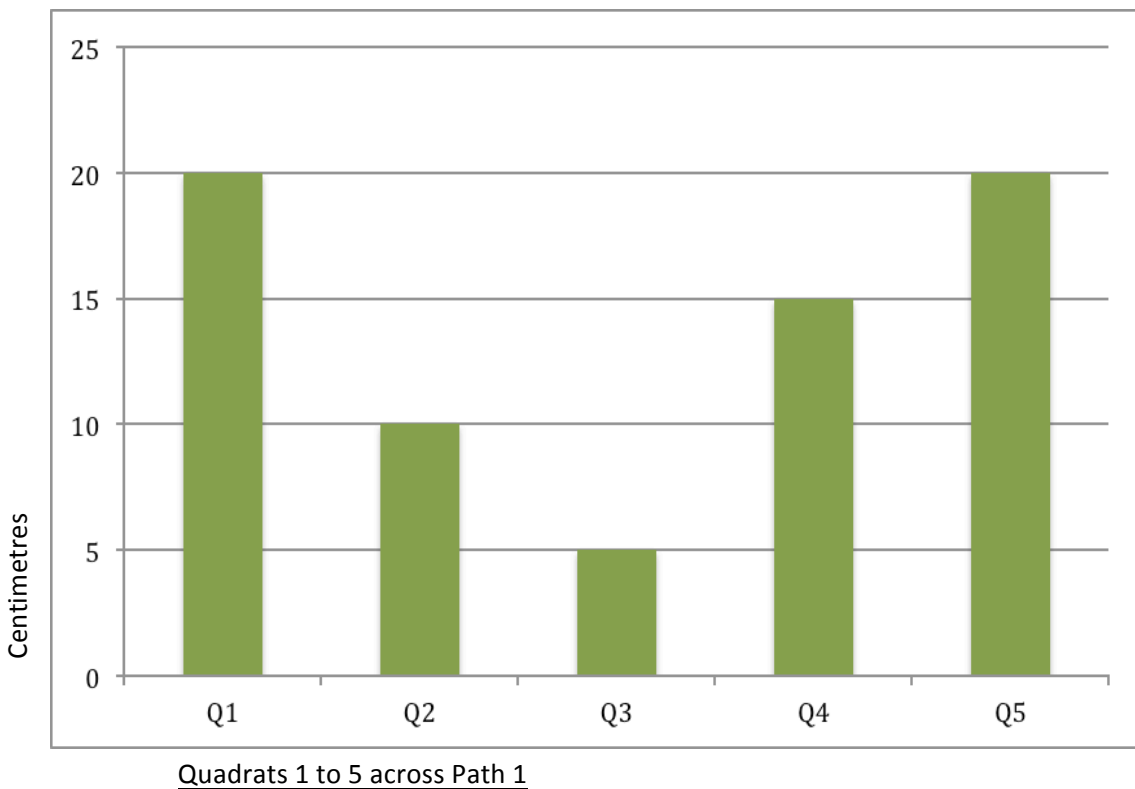
2% bare soil was recorded on the mound of the outer edge of Path 2 - Quadrat 1.

Percentage herb, grass and bare ground across Quadrats 1 – 5 of survey Path 1

GPS: SO 84975 / 03787: Path leading to Rodborough Fort

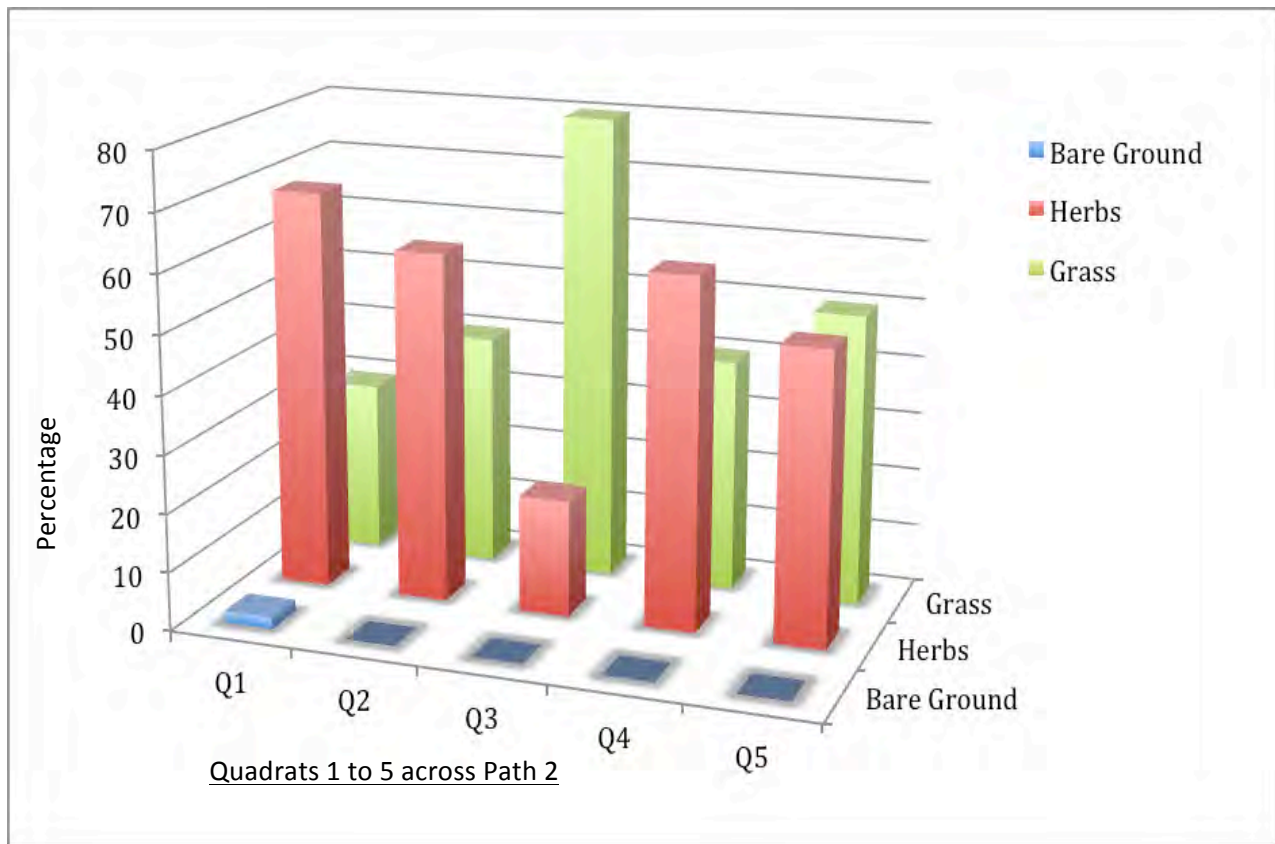


PATH 1. Average height of vegetation: Centimetres:

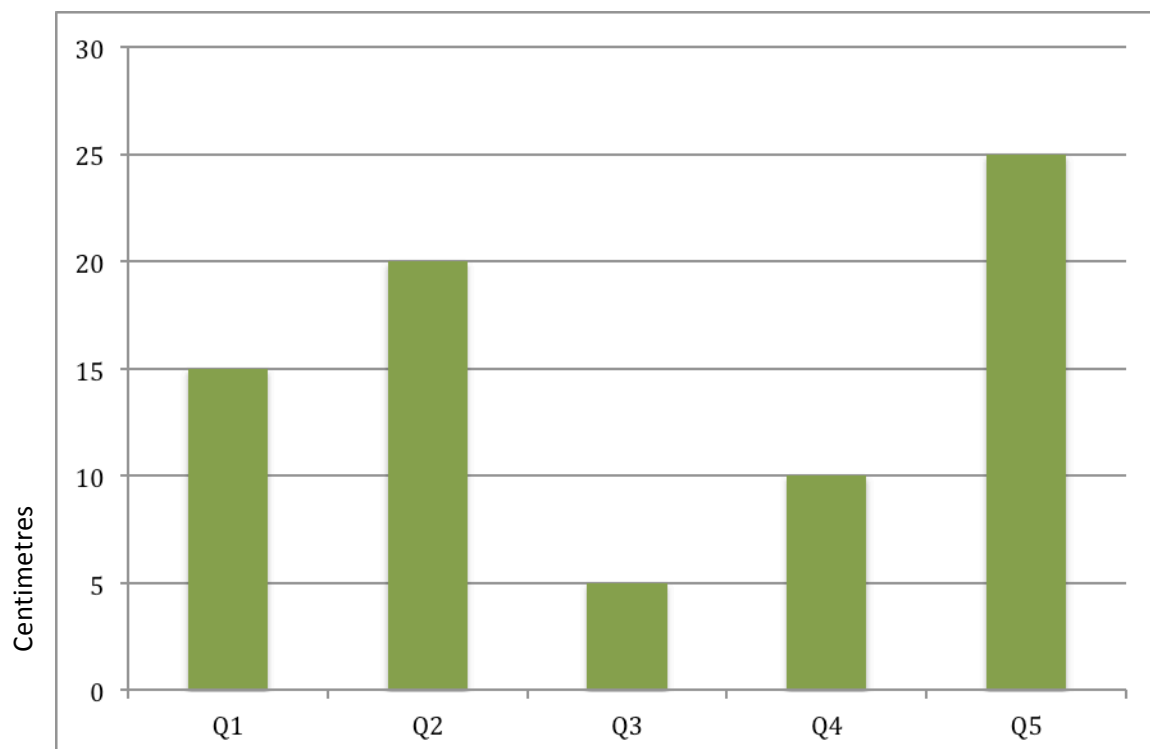


Percentage herb, grass and bare ground in Quadrats 1 – 5 of survey Path 2:

GPS: SO 84805 / 03407: Little London area, 17th July 2017



PATH 2. Average height of vegetation: Centimetres:



Targets and Recommendations

With a growing population and further planned housing development in the vicinity of Rodborough Common, it can be forecast that without intervention, the trend of widening and increasing pathways will continue. It is therefore recommended that a combination of actions be set in place with the target of preventing any further deterioration in the current situation.

Target 1: No increase in the density of footpaths.

Target 2: No increase in the mean width of footpaths.

Target 3: No decrease in the average height of vegetation in the two relatively narrow paths botanically surveyed in June / July 2017.

Target 4: No decrease in the herb:grass ratio in the two relatively narrow paths botanically surveyed in June / July 2017

The following suggested actions have been generated from discussions with environmental organisations. There has also been input from the general public at events where displays of the 1950 and 2017 aerial images have been shown eg. Stroud Festival of Nature, Stroud Show, Marking Day.

Proposed actions:

- Fenced, gated, enclosure zones for periods of time to allow areas of the Common and pathways to recover from the pressure of footfall. In requesting that the public not pass through such areas, positive notices would additionally serve the purpose of explaining the need for grassland conservation and what the public can do to help not disturb wildlife.
- Interpretation boards at all car parks to give more detail about this Special Area of Conservation.
- Seek designation of Rodborough Common as a Nature Reserve.
- Reduction in the number of car parking sites so that fewer pathways are affected by visitor pressure.
- Remind the public that legislation requires that dogs be kept on a lead near grazing livestock.
- Explore recommending further preferred pathway routes across the Common to encourage walkers to keep to main paths.
- Pursue possibility of creating alternative sites for walkers, particularly ones where it would be suitable for dogs to be let off the lead.
- Maintain publicity about conservation of the Common through press, leaflets, public events and online.
- Botanical surveys to monitor some of the particularly wide paths
- Stills photography on the ground to monitor footpath erosion.

Appendix 1

Rodborough Common path transects 2017 Surveyors D.Roberts / S Rowlatt							
		CG5 - expected out of 5 quadrats	quadrat 1 on mound west of quadrat 2	quadrat 2 adjoining path to west	quadrat 3 path centre	quadrat 4 on east side of path	quadrat 5 east of 4
PATH 1							
GPS Nos SO 84975 / 03787							
Date surveyed 9 June 2017							
% bare soil			0	0	8	0	0
Max height vegetation cm.			40	40	35	40	45
Av. height. vegetation cm.			20	10	5	15	20
% cover herbs / grasses			60 / 40	20 / 80	18 / 74	60 / 40	50 / 50
GRASSES							
<i>Festuca rubra</i> agg.	Red Fescue	I	6	2	5	6	8
<i>Cynosurus cristatus</i>	Crested dogstail		2		3	3	
<i>Holcus lanatus</i>	Yorkshire Fog	I	3		1	1	
<i>Briza media</i>	Common Quaking Grass	IV	1			1	1
<i>Anthoxanthum odoratum</i>	Sweet Vernal grass	I	3				
SEDGES							
<i>Carex flacca</i>	Glaucous Sedge	V	4	5		3	
<i>Carex caryophylla</i>	Spring Sedge	III	3			2	
HERBS							
<i>Trifolium repens</i>	White Clover			4	6	3	2
<i>Sanguisorba minor</i>	Salad burnet	IV	1	5	1	4	3
<i>Plantago lanceolata</i>	Ribwort Plantain	II	3	1	1	3	3
<i>Helianthemum nummularium</i>	Common Rock-rose	IV		1		3	6
<i>Rhinanthus minor</i> agg.	Yellow rattle	I	4			3	3
<i>Trifolium campestre</i>	Hop trefoil		4	2		2	1
<i>Lotus corniculatus</i>	Birdsfoot trefoil	IV		3		3	2
<i>Gymnadenia conopsea</i>	Fragrant-orchid		3	1			3
<i>Bellis perennis</i>	Daisy	I	3	4			
<i>Primula veris</i>	Cowslip	I	4			2	
<i>Plantago media</i>	Hoary Plantain	I		2	1	3	
<i>Galium verum</i>	Lady's bedstraw	I		1		2	1
<i>Ranunculus bulbosus</i>	Bulbous Buttercup	I		1		3	
<i>Linum catharticum</i>	Fairy flax	III	2			1	
<i>Polygala vulgaris</i>	Common Milkwort	I	3				
<i>Cerastium fontanum</i>	Mouse-eared chickweed	I				1	2
<i>Cirsium acaule</i>	Dwarf Thistle	IV	1	1			1
<i>Taraxacum officinale</i>	Dandelion	II			2		1
<i>Thymus praecox (drucei)</i>	Wild Thyme	III	2				
<i>Hieracium pilosella (Pilosella officinarum)</i>	Mouse-ear Hawkweed	IV	1			1	
<i>Centaurea nigra</i> agg.	Common knapweed	I				1	1
<i>Pimpinella saxifraga</i>	Burnet Saxifrage	III					1
<i>Scabiosa columbaria</i>	Small Scabious	III					1
<i>Prunella vulgaris</i>	Self Heal	II			1		

Appendix 1

Rodborough Common path transects 2017 Surveyors D.Roberts / S Rowlatt							
		CG5 - expected out of 5 quadrats	quadrat 1 on mound west of quadrat 2	quadrat 2 adjoining path to west	quadrat 3 path centre	quadrat 4 on east side of path	quadrat 5 east of 4
PATH 2							
GPS Nos SO 84805 / 03407							
Date surveyed 17 July 2017							
% bare soil			2%	0	0	0	0
Max height vegetation cm. (tall grass flowers)			50	70	50	50	60
Av. height. vegetation cm.			15	20	5	10	25
% cover herbs / grasses			69 / 29	60 / 40	50 / 50	60 / 40	50 / 50
GRASSES							
<i>Briza media</i>	Common Quaking Grass	IV	5	4	3	4	5
<i>Anthoxanthum odoratum</i>	Sweet Vernal grass	I	2	4	4	4	3
<i>Festuca rubra</i> agg.	Red Fescue	I	4	4		3	
<i>Cynosurus cristatus</i>	Crested dogtail		1	4	3	1	
<i>Holcus lanatus</i>	Yorkshire Fog	I		1			1
SEDGES							
<i>Carex flacca</i>	Glaucous Sedge	V	5	4	4	6	4
<i>Carex caryophylla</i>	Spring Sedge	III	4	3	4	4	3
HERBS							
<i>Helianthemum nummularium</i>	Common Rock-rose	IV	6	4	5	6	6
<i>Lotus corniculatus</i>	Birdsfoot trefoil	IV	5	4	4	4	4
<i>Plantago lanceolata</i>	Ribwort Plantain	II	4	4	4	5	4
<i>Trifolium pratense</i>	Red Clover	I	4	5	3	3	5
<i>Rhinanthus minor</i> agg.	Yellow rattle	I	4	3	3	4	5
<i>Sanguisorba minor</i>	Salad burnet	IV	4	3	4	3	5
<i>Knautia arvensis</i>	Field Scabious	I	3	3	4	4	3
<i>Galium verum</i>	Lady's bedstraw	I	3	4	4	3	3
<i>Plantago media</i>	Hoary Plantain	I	3	2	3	3	4
<i>Primula veris</i>	Cowslip	I	3	3	1	4	3
<i>Asperula cynanchica</i>	Squinancywort	II	1	3	3	5	
<i>Centaurea nigra</i> agg.	Common knapweed	I	2	3	2	2	3
<i>Bellis perennis</i>	Daisy	I	5	3	2	1	
<i>Cirsium acaule</i>	Dwarf Thistle	IV	2	1	1	3	3
<i>Leontodon hispidus</i>	Rough Hawkbit	IV	1	3		3	1
<i>Thymus praecox (drucei)</i>	Wild Thyme	III		1	3	3	1
<i>Linum catharticum</i>	Fairy flax	III	1			3	3
<i>Viola hirta</i>	Hairy Violet	III	1		1	1	
<i>Gymnadenia conopsea</i>	Fragrant-orchid		1			0	2
<i>Lathyrus pratensis</i>	Meadow Vetchling			1			1
<i>Taraxacum officinale</i>	Dandelion	II		1			1
<i>Dactylorhiza fuchsii</i>	Common spotted orchid					1	
<i>Hieracium pilosella (Pilosella)</i>	Mouse-ear Hawkweed	IV	1				
<i>Scabiosa columbaria</i>	Small Scabious	III				1	
<i>Anthyllis vulneraria</i>	Kidney Vetch	III				1	
<i>Polygala vulgaris</i>	Common Milkwort	I	1				
TREES / SHRUBS							
<i>Crataegus monogyna</i>	Hawthorn			1			