LOCH LOMOND & THE TROSSACHS NATIONAL PARK

EIR Ref: 2016/001

3rd February 2016

Thank you for your request for information, received by email on 11th January 2016 under the Environmental (Scotland) Regulations 2004. Your specific request and the response from the National Park Authority are provided below.

What is the methodology used for surveying the rush pasture and what plant species are monitored in this habitat. Similarly, I would ask the same two questions for the wet heath, as I assume the way these two habitats are monitored would be different from that used for the woodland areas.

This area has a rich diversity of vascular plants, has any monitoring been undertaken to ensure the grazing regime is not affecting these populations?

Please find attached Appendix A containing documents which show the methodology used for the black grouse project area monitoring, that has been undertaken for the habitats within the project area. The documents attached are:

- Herbivore Impact Assessment field guide,
- HIM blank template,
- monitoring map
- guidance note for completion of the monitoring field sheet.

The habitat map identified blocks of neutral/acidic wet woodland, acidic dry birch woodland, acidic dry policy woodland, wet heath, rushes (with areas of neutral grassland), rush/bracken/wet heath/herb-rich flush mosaic and bracken (locally with grasses/bluebell beneath). For all these habitats the methodology identified the impacts of the grazing on Preferentially Browsed or Grazed Plants, Sward and Ground Disturbance (see field guide for more detail).

If the Black Grouse numbers continue to fall despite the measures undertaken, will this project continue after 2017?

We are currently in the process of reviewing the effectiveness of the Black Grouse project, exploring all outcomes which the project has achieved. These outcomes will be discussed with the individual privately owned land based businesses before any decision is taken as to support going forward.

Thank you for your interest in the black grouse project. I hope that the information provided to you has answered your questions about this project. Should you have further queries, rather than submit further information requests, please let me know if you would prefer to meet one of the Conservation staff involved in the project. I would, with your consent, pass on your contact details and ask them to contact you directly to arrange a meeting.

Yours sincerely

Information Officer
Loch Lomond & The Trossachs National Park Authority

Review Procedure
If you are dissatisfied with this response, or the way in which the Authority has dealt with your request, you are entitled to ask the Authority to review its decision. Please note that in order for a review to take place you must:-

- Lodge a written request for a review within 40 working days of either the date on which you received a response from the University or the date by which you should have received a response under the terms of the Environmental Information (Scotland) Regulations 2004, whichever is the later.

- Include your name, address for correspondence, a description of the original request, and the reasons why you are dissatisfied; and

address your review request to the Director of Corporate Services:

Jaki Carnegie
Loch Lomond & The Trossachs National Park Authority
National Park Headquarters
Carrochan
Carrochan Road
Balloch
G83 8EG
E-mail: info@lochlomond-trossachs.org

Please note that links provided to information available elsewhere are intended to assist you. Requests for information held by other public authorities, and any complaints regarding access to such information should be addressed to that authority. These review procedures relate only to information which is directly under the control of Loch Lomond & The Trossachs National Park Authority.

The review of your request will be handled by staff who were not involved in the original decision. You will receive notice of the result of your review within 20 working days.

If you are not satisfied with the response to your request for review, you can contact the Scottish Information Commissioner, the independent body which oversees the Environmental Information (Scotland) Regulations 2004, at:

Scottish Information Commissioner
Kinburn Castle
Doubledykes Road
St Andrews
Fife
KY16 9DS
Tel: 01344 464 610
Website: www.itspublicknowledge.info

E-mail: enquiries@itspublicknowledge.info

Table 1: Woodland Structure Class

Woodland Structure Class	General Structure Description
Class 1: Open ground, simple	Any open ground vegetation with a simple structure – e.g. grassland or heath. May be open because of high herbivore impacts, because seed trees are absent or because the ground is very wet, very poor or rocky.
Class 2: Open ground, complex	Any open ground vegetation (eg rank grassland or heath) progressing towards woodland. Includes sparse tree regeneration and a low shrub layer that includes very palatable species (eg bramble) – suggests a period of low herbivore impacts within the last decade.
Class 3: Dense regeneration on previously open ground	Clumped patches of regeneration up to 3m in height – suggests recent herbivore impacts low or absent.
Class 4: Young woodland up to early maturity, thicket and stem exclusion	Young woodland with a closed canopy >3m in height, containing dead suppressed stems. It may contain small seedlings but normally these die due to a lack of light. Current herbivore impacts may vary. Recent or historic impacts low or absent.
Class 5: Mature woodland, understorey regeneration	Older woodland with small canopy gaps or where competition between canopy trees is minimal. The field layer is likely to be rank. A woody shrub layer, understorey and/or tree seedlings and saplings becoming established – suggests a period of low herbivore impacts within the last decade.
Class 6: Mature woodland, no understorey regeneration	Older woodland with small canopy gaps or where competition between canopy trees is minimal. A single storey of mature trees with a sparse or absent understorey and a short field layer or a rank field layer of unpalatable species such as bracken or *Molinia*. Few or no woody species - suggests historically moderate to heavy herbivore impacts.
Class 7: Post-mature woodland, dead canopy trees, complex	Open canopy with senescent and dead canopy trees. Canopy trees may have abundant long basal shoots. A woody shrub layer and understorey are present, including tree seedlings and saplings – suggests a period of low herbivore impacts within the last decade.
Class 8: Post-mature woodland, dead canopy trees, simple	Open woodland with senescent and dead canopy trees, often heavy browsing including prominent browseline, no understorey and a lack of woody growth in the field layer – suggests heavy current or recent herbivore impacts and a decline in woodland cover.
Class 9: Open canopy, open-grown trees, complex	Old woodland and/or wood pasture. Open canopy of scattered, open-grown trees that are mature or post-mature, often abundant recent basal shoots, with tree regeneration and a rank field layer that includes palatable species – suggests a period of low herbivore impacts within the last decade.
Class 10: Open canopy, open-grown trees, simple	Old woodland and/or wood pasture. Open canopy of scattered, open-grown trees that are mature or post-mature, often with heavy browsing including prominent browseline, a short field layer or a rank field layer of unpalatable species such as bracken or *Molinia*. Little or no shrub layer or tree regeneration – suggests ongoing herbivore impacts and the potential for long-term decline in the woodland component.

Table 2: Current Herbivore Impacts

Basal Shoots

Very High	High	Medium	Low	Absent	Not Applicable
Shoots of all species very heavily browsed (>90% growth removed in last 12 months; short stubby stems difficult to see; most woody shoots browsed). Where browsing increase sudden/ recent, may be established basal shoots too large to browse and: Ash: large basal shoots with 2 or 3 seasons' growth browsed off; Holly: lots of shoots, all heavily browsed at tip; Birch: only new growth browsed on old woody shoots. Alder: shoots browsed back short (5-10cm).	Shoots of palatable species very heavily browsed. Shoots of unpalatable species heavily browsed (50-90% growth removed in last 12 months; some woody shoots browsed). Birch and alder: variable browsing with all tips and some thick stems removed Where high/medium, moderately palatable (eg groups 3 to 5) browsed back short but not all the way to base of stool/tree.	Shoots of palatable species heavily browsed. Shoots of unpalatable species moderately (10-50% growth removed in last 12 months) to lightly browsed (<10% growth (only stem tips) removed in last 12 months). Where sudden/recent increase: Ash: large basal shoots with current season's growth browsed off.	Shoots of palatable species lightly (<10% growth (only stem tips) removed in last 12 months) to moderately browsed. Shoots of unpalatable species generally unbrowsed, some lightly browsed.	Shoots of all species unbrowsed. Abundant shoots of varying length and diameter.	No trees with basal shoots accessible to herbivores.

Reducing palatability: (1) aspen, willow; → (2) ash, holly; → (3) hazel, rowan, oak, larch; → (4) Scots pine, juniper; → (5) birch, hawthorn; → (6) beech; → (7) alder, rhododendron, Sitka

Table 2: Current Herbivore Impacts

Epicormic & Lower Shoots

Very High	High	Medium	Low	Absent	Not Applicable
Very obvious and well maintained browseline on all trees. Young shoots almost entirely removed (browsed to trunk) from palatable tree species (eg groups 1 to 3). Even older woody shoots of less palatable species (eg groups 5 to 7) moderately (30-80% growth removed in last 12 months) to heavily browsed (>80% growth removed in last 12 months).	An obvious browseline on all trees with live lower branches. Young shoots of palatable species heavily browsed (>80% growth removed in last 12 months) Older woody growth removed from some shoots of palatable species. Unpalatable shoots (eg old woody birch) lightly (<30% growth removed in last 12 months) to moderately browsed (30-80% growth removed in last 12 months).	A maintained browseline on most or all tree species – some unbrowsed lower branches may interrupt the browseline. Young shoots of palatable species lightly (<30% growth removed in last 12 months) to moderately browsed (30-80% growth removed in last 12 months). Some shoots heavily browsed and older woody growth removed from some shoots.	Shoots of most palatable species (eg groups 1 to 3) lightly browsed (<30% growth removed in last 12 months). Shoots of less palatable species unbrowsed or very lightly browsed.	No sign of recent browsing on live epicormic/lower shoots.	No trees with epicormic/lower shoots – shoots on fallen trees or lower branches in reach of herbivores to be classed as epicormic/lower shoots.

Reducing palatability: (1) aspen, willow; → (2) ash, holly; → (3) hazel, rowan, oak, larch; → (4) Scots pine, juniper; → (5) birch, hawthorn; → (6) beech; → (7) alder, rhododendron, Sitka

Table 2: Current Herbivore Impacts

Bark Stripping & Stem Breakage

Very High	High	Medium	Low	Absent	Not Applicable
May be recent and severe bark stripping of >50% of live stems and recently fallen branches. One species (eg rowan) may have all live stems stripped (eg by deer). >20% live stems of young trees (saplings and/or thicket) may be snapped by cattle and/or red deer.	May be recent bark stripping damage of 20-50% of live stems and recently fallen branches. One species (eg rowan) may have all live stems stripped (eg by deer). May be frequent stem snapping by cattle and/or red deer.	A few trees show signs of bark stripping. Sometimes one individual tree badly damaged. One species (eg rowan) may be heavily targeted. have all live stems stripped (eg by deer). Occasional to frequent stem snapping by cattle and/or red deer.	Bark stripping generally hard to find. There may be one stripped or frayed tree. Occasional stem snapping by cattle and/or red deer.	No bark stripping or stems snapped by large herbivores.	No trees susceptible to bark stripping or stem damage.

Reducing palatability: (1) aspen, willow; → (2) ash, holly; → (3) hazel, rowan, oak, larch; → (4) Scots pine, juniper; →

(5) birch, hawthorn; → (6) beech; → (7) alder, rhododendron, Sitka

Table 2: Current Herbivore Impacts

Seedlings & Saplings

Very High	High	Medium	Low	Absent	Not Applicable
Young seedlings absent or only present as new germinants in their first growing season (to be browsed the following winter). Old 'seedlings' very heavily browsed into a topiaried form (ie 'bonsai'). Saplings battered by very heavy browsing; many woody side shoots browsed back or snapped. Leaders and branches of saplings undamaged only if they cannot be reached by herbivores.	Young seedlings of palatable and browse-sensitive species absent or only present as new germinants in their first growing season (to be browsed the following winter). Old 'seedlings' of palatable species heavily browsed (checked and (>80% growth removed in last 12 months). Young seedlings of unpalatable species heavily browsed (>80%). Saplings heavily browsed; leaders undamaged only if they cannot be reached by herbivores.	Seedlings of palatable species moderately (30-80% growth removed in last 12 months) or heavily browsed (>80% current year's growth and some older woody growth removed in last 12 months) – often to height of surrounding vegetation in summer where sheep and/or deer present. Seedlings of unpalatable species unbrowsed or lightly browsed (<30% growth removed in last 12 months). Saplings moderately browsed. Groups of willow, birch and alder saplings may have some unbrowsed leaders. Otherwise, leaders undamaged only if they cannot be reached by herbivores.	Seedlings of palatable species lightly browsed (<30% growth removed in last 12 months) – may be some moderately browsed. Seedlings of unpalatable species generally unbrowsed – may be some lightly browsed (<30% growth removed in last 12 months). Some saplings of palatable species unbrowsed. Most saplings of unpalatable species unbrowsed.	Frequent unbrowsed seedlings (providing adequate seed source and suitable ground and light conditions). If present, saplings of all species unbrowsed.	No seedlings (<50cm) or saplings (50cm to 2m) – see **Very High**.

Reducing palatability: (1) aspen, willow; → (2) ash, holly; → (3) hazel, rowan, oak, larch; → (4) Scots pine, juniper; → (5) birch, hawthorn; → (6) beech; → (7) alder, rhododendron, Sitka

Reducing resilience: (1) eared willow, birch, alder; → (2) holly, juniper; → (3) hazel, oak, rowan, ash; → (4) Scots pine, (non-native conifers)

Table 2: Current Herbivore Impacts

Preferentially Browsed or Grazed Plants

Very High	High	Medium	Low	Absent	Not Applicable
All accessible shoots are very heavily (>75%) or heavily (50-75%) browsed/grazed. Runners/climbers reduced to woody central stems and very short side shoots. Within the growing season, there may be some growth of current year's shoots. Where cattle present, great woodrush heavily grazed (all plants <10cm). Where deer are main herbivores, ferns (especially lemon-scented, lady and buckler, but also male and hard) will be heavily grazed (shoots <10cm on male fern) and great woodrush moderately grazed (most tips grazed but generally >10cm).	Accessible shoots of preferential species generally heavily browsed/grazed (>75%), but there may be higher (very high) impacts on some species than on others depending on relative preference. Honeysuckle may be present, but only as short shoots. Great woodrush moderately grazed, or heavily grazed where cattle present. Where deer are main herbivores, lemon-scented, lady and buckler ferns heavily grazed.	Accessible shoots of preferential species moderately (25-75%) to heavily browsed/grazed (>75%). Some preferentially browsed species may be heavily browsed (>75%) but others ignored eg bramble browsed but blaeberry or honeysuckle unbrowsed. Great woodrush moderately grazed with little leaf litter where cattle present; ungrazed where cattle not present. Where deer present, tips of ferns (other than bracken) may be grazed.	Accessible shoots of preferential species generally lightly browsed/ grazed (<25%). May be some shoots or individual species moderately browsed/grazed (25-75%) or unbrowsed/ ungrazed. Honeysuckle may be frequent as a climber. Great woodrush moderately grazed with leaf litter where cattle present; ungrazed and rank (>20cm) where cattle not present. Ferns ungrazed in the growing season even where deer present.	No large herbivore impacts on preferential species. May be long unbrowsed runners/ climbers or a dense tangled field layer (eg bramble, honeysuckle, ivy) obscuring views through the wood. Ivy may be appearing on trees below previous browseline. Honeysuckle may be abundant as a climber. Great woodrush rank and locally dominant – flower stalks present and dense leaf litter.	No preferentially browsed or grazed species (eg woodland structure class 6 and 8 where absent or confined to places not reached by herbivores). Only consider plants other than trees.

Reducing palatability (growing season): (very) bramble, honeysuckle, ivy, blaeberry, **great woodrush**, *buckler fern*, valerian, meadowsweet, angelica, raspberry, dog's mercury; → (moderately) **purple moor-grass, soft rush, sharp-flowered rush**, lemon-scented fern, lady fern; → (not) primrose, bluebell, wood sorrel

Reducing palatability (outwith growing season): (very) bramble, honeysuckle, ivy, blaeberry, **great woodrush**; → (mod) *great woodrush, hard fern*, bog myrtle, ling heather; → (not) tufted hair-grass, soft rush, sharp-flowered rush, cross-leaved heath

Species in bold are preferentially browsed/grazed by cattle; *species in italics are preferentially browsed/grazed by deer.*

Table 2: Current Herbivore Impacts

Sward

Very High	High	Medium	Low	Absent	Not Applicable
Palatable species very heavily grazed (<5cm and/or >75% grazed or nipped). Unpalatable species such as rushes and tussock-forming grasses (eg tufted hair-grass, purple moor-grass) heavily grazed (>75% grazed or nipped). In the growing season, spring flowering herbs may be ungrazed even where winter impacts were very high.	Palatable species heavily grazed (<5cm and/or >75% grazed or nipped). Unpalatable species moderately grazed, not tussock forming. NB: On fertile, sheltered sites with high light levels, where evidence of current grazing is not obvious but sward <5cm, safe to assume grazing impact is high.	Palatable species moderately grazed (25-75% grazed or nipped). In the absence of more palatable species, unpalatable species lightly grazed (<25% grazed or nipped), except where livestock have been put into the wood at start of spring, when unpalatable species may be heavily grazed (>75% grazed or nipped) may be heavily grazed.	Palatable species very lightly grazed (>10cm (where not shaded out by field layer – see below) with very little evidence of grazed/ nipped leaves). Unpalatable species ungrazed. May form a rank field layer >10 cm that shades ground layer vegetation beneath.	Ungrazed and probably rank and tussocky sward with abundant leaf litter. May be high proportion of woody (eg bramble) or heathy species, depending on site (soil, exposure and light).	No or little grass, (small herbs and rushes).

Reducing palatability (growing season): (very) bramble, honeysuckle, ivy, blaeberry, **great woodrush**, *buckler fern*, valerian, meadowsweet, angelica, raspberry, dog's mercury; → (moderately) **purple moor-grass**, **soft rush**, **sharp-flowered rush**, lemon-scented fern, lady fern; → (not) primrose, bluebell, wood sorrel

Reducing palatability (outwith growing season): (very) bramble, honeysuckle, ivy, blaeberry, **great woodrush**; → (mod) *great woodrush*, *hard fern*, bog myrtle, ling heather; → (not) tufted hair-grass, soft rush, sharp-flowered rush, cross-leaved heath

Species in bold are preferentially browsed/grazed by cattle; *species in italics are preferentially browsed/grazed by deer.*

Table 2: Current Herbivore Impacts

Ground Disturbance

Very High	High	Medium	Low	Absent	Not Applicable
Wet, shaded sites completely poached. On drier sites, ground heavily poached (>50%) if cattle present. Where deer the main herbivore, frequent and obvious heavily poached tracks/'motorways'. In wet open ground, kicked out clods of turf and Sphagnum and well-defined wallow holes.	On wet ground with cattle, more than 50% may be heavily poached. Without cattle, wet ground may be only moderately poached. Drier sites are lightly poached. There may be heavy poaching around feeding areas. Frequent obvious deer tracks.	On wet ground with cattle, up to 50% may be heavily poached. Without cattle, wet ground may be only moderately poached. Drier sites lightly poached or unpoached except around feeding areas where moderate or heavy poaching may occur. Occasional deer tracks.	Very limited signs of poaching or tracks.	No sign of poaching or tracks. Litter quickly mineralised in moist, rich woodlands and soil may be bare in spring – lack of vegetation in these cases not due to animal disturbance.	No ground susceptible to disturbance (eg scree).

Table 3: Browsing Rates				
Browsing	**Very Heavy**	**Heavy**	**Moderate**	**Light**
Browsing on tree basal shoots (impacts within the last 12 months). *Estimate % removed based on the ratio of shoot diameter to length.*	>90% of current year's growth removed. Short stubby stems, difficult to see on some species. Most woody shoots browsed.	>50% and <90% of current year's growth removed. Some woody shoots browsed.	>10% and <50% of current year's growth removed.	Only stem tips removed (<10% of current year's growth).
Browsing on other tree shoots (ie epicormics, seedlings/saplings)	All outer shoots removed (including many woody shoots) and remaining growth old and woody with short internodes.	>80% of current year's growth removed. Older, more woody growth removed from some shoots	30-80% of current year's growth removed. Older, more woody growth removed from some shoots.	<30% of current year's growth removed.
Browsing/grazing rates on preferential plants and sward	Runners and climbers reduced to woody central stems and very short side shoots.	>75% of leading shoots browsed.	25-75% of leading shoots browsed.	<25% of leading shoots browsed.

Table 4: Preferentially Browsed or Grazed Plants (excluding trees)			
Season	**Very Palatable**	**Moderately Palatable**	**Unpalatable**
Growing Season	Bramble, honeysuckle, ivy, blaeberry, **great woodrush**, *buckler ferns*, valerian, meadowsweet, angelica, raspberry, dog'smercury.	**Purple moor-grass, soft rush, sharp-flowered rush**, *lemon-scented fern, lady fern.*	Primrose, bluebell, wood sorrel.
Outwith Growing Season	Bramble, honeysuckle, ivy, blaeberry, **great woodrush.**	*Great woodrush, hard fern,* bog myrtle, ling heather.	Tufted hair-grass, soft rush, sharp-flowered rush, cross-leaved heath.
Species in bold above are preferentially browsed/grazed by cattle; *species in italics above are preferentially browsed/grazed by deer*			

Table 5: Relative Palatability & Resilience of Tree Species			
Palatability (innate attraction to browsing herbivores)		**Resilience** (ability to survive being browsed and continue to grow)	
1 – most palatable	Aspen, willow	1 – most resilient	Eared willow, birch, alder
2	Ash, holly*	2	Holly, juniper
3	Hazel, rowan, oak, Douglas fir, larch	3	Hazel, oak, rowan, ash
4	Scots pine*, juniper*, Western hemlock	4 – least resilient	Scots pine*, non-native conifers
5	Birch, hawthorn, lodgepole pine	* Scots Pine and other conifers less able to survive repeated browsing than broadleaves.	
6	Beech		
7 – least palatable	Alder, rhododendron, Sitka spruce		
* Holly, Scots pine and juniper more preferred in winter (as evergreen)			

Herbivore impact monitoring - field sheet

Date:	*Date of last survey*:	*Surveyor's name*: **Scott Nisbet**

Woodland name: **The Commonty**

Habitat type:

Box 1: Woodland Structure Class

Stop	1	2	3	4	5	6	7	8	9	10
Structure class										

Box 3: Most common structure class

This time	Last time	This time last year	Target

Box 2: Current Herbivore Impact

Browsing Indicator	Very high	High	Medium	Low	Absent	Not applicable
Basal shoots						
Epicormic/lower shoots						
Bark stripping						
Seedlings/Saplings						
Preferentially browsed species						
Sward						
Ground disturbance						
Total for each impact level						

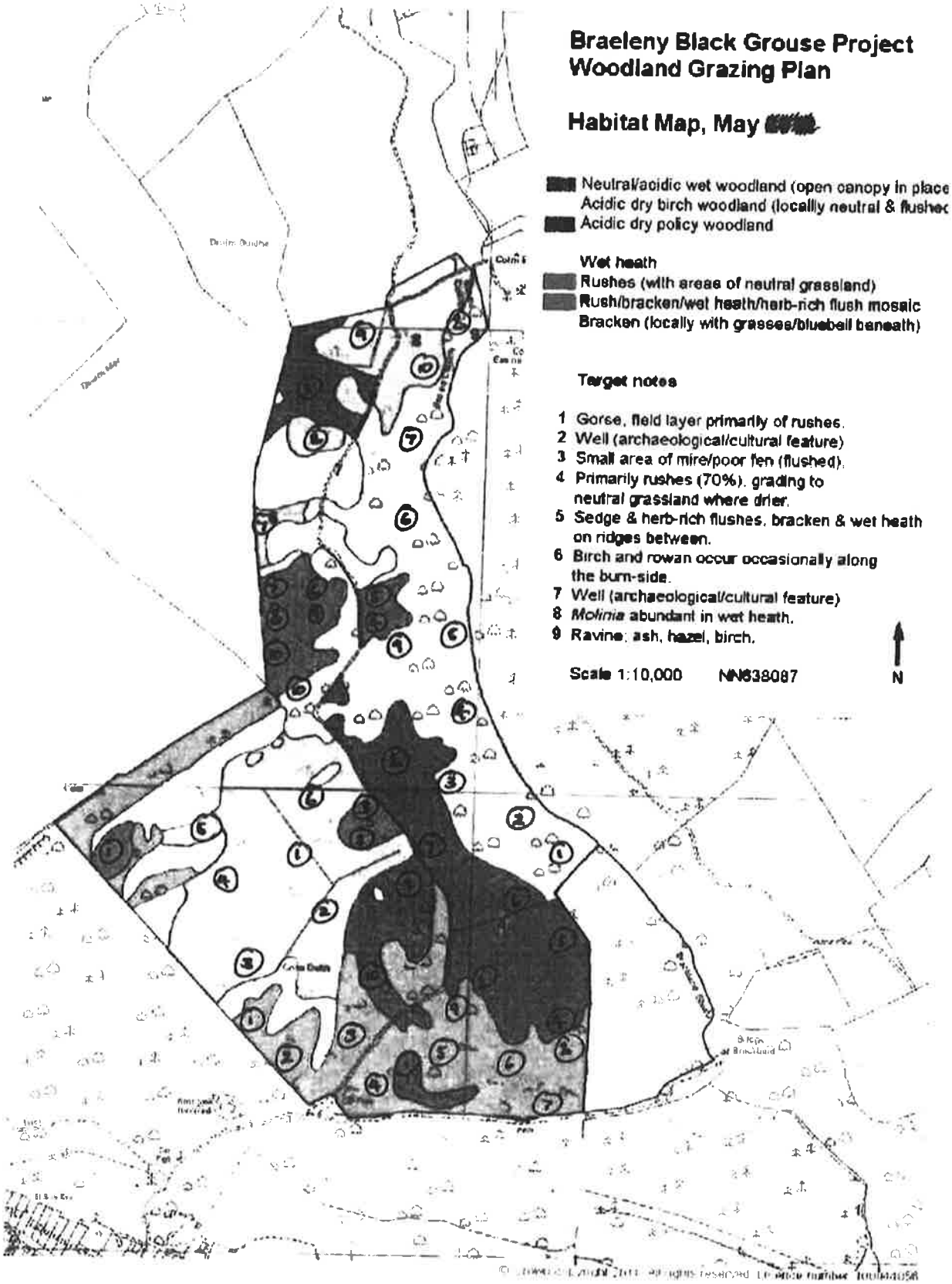
Notes:

Box 4: Most common impact

This time	Last time	This time last year	Target

Complete this field sheet for each key habitat type in your wood. At 10 stops within the habitat:

1. Estimate the structure class and enter its number (from 1 to 10) in **Box 1: Woodland structure class**. In the first of the four columns in Box 3, enter the most common structure class across the whole habitat type for this survey. Also enter the most common structure class for the last survey and for the survey at this time last year as well as the target structure class.
2. Rate the current herbivore impact in **Box 2: Current herbivore impact**, on a scale between absent and very high for each of the seven browsing indicators listed in the left hand column. Enter the number of the stop in the appropriate cell of the box. Add up the total number of records for each impact level and enter this in the bottom row of Box 2. Decide on the most common impact level and enter this in the first of the four columns of Box 4. Also enter the most common impact level from your last survey and the survey at this time last year as well as the target impact level.


Braeleny Black Grouse Project
Woodland Grazing Plan
Habitat Map, May [redacted]
Neutral/acidic wet woodland (open canopy in place
Acidic dry birch woodland (locally neutral & flushec
Acidic dry policy woodland
Wet heath
Rushes (with areas of neutral grassland)
Rush/bracken/wet heath/herb-rich flush mosaic
Bracken (locally with grasses/bluebell beneath)
Target notes
1 Gorse, field layer primarily of rushes.
2 Well (archaeological/cultural feature)
3 Small area of mire/poor fen (flushed).
4 Primarily rushes (70%), grading to neutral grassland where drier.
5 Sedge & herb-rich flushes, bracken & wet heath on ridges between.
6 Birch and rowan occur occasionally along the burn-side.
7 Well (archaeological/cultural feature)
8 Molinia abundant in wet heath.
9 Ravine; ash, hazel, birch.
Scale 1:10,000
NN638087
N

Completing the monitoring field sheet

These notes should be read in association with the Herbivore Impact Assessment field guide (MS Word 82k).

For every monitoring session you will need a copy of the Herbivore Impact Monitoring field sheet (MS Word 61k) for each of the **key** native woodland and open ground habitats identified in your management plan. This field sheet is very similar to the **Herbivore Impact Assessment field-sheet** but for the monitoring there is no need to survey all the habitats in **section 4a** of your management plan, only the **key habitats** that were identified in **section 4b**.

For each key habitat:

1. **Make 10 stops within the habitat.** You are making a qualitative assessment of structure and current impact and not a statistically rigorous survey so stops do not need to be a set distance from each other. However they should be spread out through the habitat so as to get a reasonably accurate impression of structure and current impact through the habitat. It may be helpful to mark the approximate location of each stop on your habitat map (see step 6).
2. At each stop, use the **Woodland Structure Class table** (Table 1 in the Toolbox field guide) to help you decide which structure class best describes the habitat and enter the results in **Box 1** of your field sheet. To assess structure, you may find it useful to visualise a circular plot with yourself at the centre. The plot radius could be up to **25m** for woodland, depending on the size of the habitat. A **10 m** radius plot might be sufficient for open ground habitats.
3. At each stop, use the **Current Herbivore Impacts table** (Table 2 in the Toolbox field guide) to help you decide on one current herbivore impact level (on a scale from absent to very high) for each of the seven browsing indicators. Record your assessment by writing the number of the stop in the appropriate cell in **Box 2** of the field sheet. If the indicator falls between two levels, write the number of the stop in both cells.
4. Measures of browsing intensity and relative palatability of different plant species are given on page 4 of the Toolbox field guide.
5. Use the "Not applicable" column in Box 2 where the feature is not recorded at the stop due to habitat structure. For example, there may be no basal shoots because the stand is composed only of tree species that do not produce basal shoots, e.g. Scots pine; there may be no bark stripping because all the trees are mature and rough barked and so are not susceptible to bark stripping; or there may be no ground disturbance because the site is composed of boulders, where ground disturbance would be unlikely to occur. 'Basal shoots', 'Epicormic /lower shoots' and 'Bark stripping' will all be recorded as 'Not applicable' for open ground habitats. Use the "Absent" column where the feature is present and could be impacted but where there is no sign of an impact, for example where seedlings /saplings are present but show no sign of browsing, where older rowan or ash are present but have not been bark stripped or frayed or where soil and vegetation could be disturbed by trampling but where there is no obvious ground disturbance.
6. Indicators of the presence of different species of grazing animal are not needed to monitor herbivore impact. However, if you are not sure which species are present at your site or if you think the species present may have changed since your last visit, you may find it useful to note any observed indicators of a particular grazing species at each stop. Use the "Notes" box on the assessment sheet. See Distinguishing between browsing by different mammal species (pdf 27k) and Indicators of the presence of different grazing species (doc 67k) for more information.

7. Once you have made your assessments at all 10 stops, calculate an average structure class for the habitat and note it in the **'This Time'** column in **Box 3.**
8. Add up the total number of records for each current impact level and enter the results in the bottom row of Box 2 on the field sheet. Decide which is the most common impact. Enter this in the right hand column on the scale of absent to very high.
9. Add up the total score for each impact level and enter the results in the bottom row of Box 3. Enter the most common impact, on a scale from absent to very high, in the 'This Time' column in **Box 4**. If the result of adding up is inconclusive, e.g. you have five 'Highs' and five 'Lows', you will need to judge which impact is most representative, in this case it may be 'Medium'.
10. Look to see how woodland structure class and /or current impact level differed between your 10 stops. Some woods will be very uniform, other varied and, in some cases one or two stops may differ from the rest. If there is a spatial pattern to the variation with, for example, stops in one part of the wood being different from those in another, then you may want to assess each part separately. Alternatively, one of your stops may be, for example, near a feeding site so be particularly heavily grazed. Where there is not much variation between stops, you should find that the impact levels of each of the seven browsing indicators are broadly similar. If one indicator is significantly different, you should make a note of this as it may affect how you re-assess your grazing regime.
11. If this is your first monitoring survey, compare the result with the **original impact assessment** and with the target structure class. For subsequent surveys compare with your last assessment, with the assessment at the same time last year and with the target. Changes to structure class are likely to be long-term processes, though for some classes, e.g. open ground or woodland regeneration, change should be apparent within the five-year lifetime of the plan.

Seasonal variations

There are likely to be seasonal variations in the level of most of the current browsing indicators. For this reason it is very useful to compare your assessment with that carried out at the same time in previous years as well as with the most recent assessment.

Fixed point photography

To pick up subtle changes in woodland structure over a number of years, consider **fixed point photography**.