Woodland and Scrub Project Proposal for Mungrisdale Common

Agreement Ref: AG00250343
Field Ref: NY32297712

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1. Introduction.

This document describes the objectives, justification, design and management implications for this project. It identifies the potential benefits of this project, both at the local and regional level. It identifies the ecological importance and identifies management requirements that the project is designed to deliver to achieve the SSSI conservation objectives. It demonstrates the meeting of joint objectives with partnership organisation in the Uplands.

Mungrisdale Common in the Lake District National Park is 3295.5ha of which 1.9ha is covered by remnant mature oak woodland representing 0.05% of the area. There is remnant woodland in the gill areas and a small degree of birch, rowan, gorse and juniper regeneration confined to the steep rocky/scree slopes where sheep find it difficult to access.

The common is managed by an association consisting of ten active graziers with eleven hefted flocks of both Swaledale and Herdwick sheep. For the last ten years the common has been under an Environmentally Sensitive Area Scheme (ESA) with some degree of stock number control. This agreement expired on the 30th April 2007. The Commons Association have joined the Higher Level Stewardship Scheme and Natural England are taking the opportunity to incorporate these woodland/scrub restoration and creation proposals into the negotiations for this new agreement with further stock reductions.

2. Project Proposal.

The project hopes to redress the woodland imbalance by establishing seven temporarily fenced enclosures totalling approximately 62 hectares, to add or consolidate native woodland and scrub. The sites are deemed to be of low agricultural value but crucial to satisfying both SSSI conservation objectives and wider catchment objectives (see Appendix 2). The proposed sites do not encroach on known archaeological features, (see Historic Environmental Record for the area, Appendix 4). Fencing is considered important to mitigate against the risk of failure and protect the investment in the tree planting. Tubes will offer a degree of protection but without the fencing, stock will be free to rub and damage the tubes increasing the requirement for maintenance and replacement. Stocking density on the common will be reduced to allow the grazing sensitive BAP habitats to recover in line with SSSI conservation objectives however the stock numbers are not sufficiently reduced to negate the need for fencing for the protection of the trees. The proposal does not wish to inflict a stocking density that will bring into question the sustainability of the agricultural enterprise.

The sites vary in size and are divided into two types of management:

Gill woodland/scrub creation group:

- Souther Fell (11.38ha.)
- Glenderamackin (14.16ha.)
- Roughton Gill (5.47ha.)
- Glenderaterra 1. (5.57ha.)
- Glenderaterra 2. (2.07ha.)

Woodland/scrub restoration group:

- Young Wood Oak (14.00ha.)
- Swinside Valley Juniper (9.00ha.)

Five of these enclosures include gill areas extending onto dense bracken beds connecting to existing remnant woodland where present and primarily relying on a replanting programme where it is anticipated regeneration is less likely to be prevalent. Two enclosures will rely on natural regeneration to consolidate the existing oak woodland and juniper scrub present in the areas and will benefit from stock exclusion and minimum management intervention. The locations of these enclosures are outlined on maps attached at Appendix 1.

Plate 1: Young Wood.

The design of the planting will be with random clusters of varying shape and size with feathering of density the further the planting goes away from the gill to simulate natural regeneration patterns for a mixed native woodland. It is anticipated that there will be between 50% - 60% open area. Bracken will only be cleared from around each tree plant to an area of two square meters. This is to allow the tree to establish without competition but also utilise a protective function that the bracken can provide at certain times of the year.

Although it is recognised as visually intrusive, fencing to exclude stock is considered vital in the short term to achieve the long term conservation objectives for the project, and must be viewed as an albeit unpleasant but necessary tool.

The Common as a whole is covered by the CROW Act and it is envisaged that open access to these tree enclosures will not be discouraged. The provision of self closing gates will be incorporated into the design of the fence lines at appropriate locations. The enclosure positions do not encroach on any public rights of way.

It is envisaged the visual intrusion of the temporary fencing can be minimised by locating it within the bracken where possible, so that it is hidden at certain times of the year. The fence lines will not be located near the skyline or immediately on top of a ridge. The

proposed duration of the fencing will be 15 years. If it is considered the project objectives will benefit from a longer duration with stock exclusion then a full Secretary of State Application will be pursued for a second time, requiring consent from all interested parties. If it is considered not necessary Natural England or its equivalent will be responsible for organising and paying for the removal of fencing at this stage.

3. Rationale.

3.1 Biodiversity.

Mungrisdale Common has been heavily grazed by sheep for many years. This has resulted in the general impoverishment of all of the upland habitats that are sensitive to grazing. Woodland and scrub habitats have been affected the most and are highly fragmented. The only remaining areas of woodland and scrub are the oak wood at Young Wood, Juniper Scrub in the Swinside Valley and on the end of The Tounge, some small areas of gorse, and a few scattered trees on crags and in gills.

Plate 2: Remnant Juniper Scrub in the Swinside Valley.

A summary of the draft Conservation Objectives for the Skiddaw Group SSSI is attached at Appendix 2.This shows all of the features for which the site is designated as SSSI and SAC. Oak Woodland and Juniper Scrub are both SSSI and SAC interest features.

The SSSI is also designated for its outstanding population of breeding birds, including (amongst other species) Ring Ousel, Merlin, Peregrine, Buzzard and Raven.

For the SSSI and SAC to be in recovering condition, management must be in place that is likely to result in the Conservation Objectives being achieved. The management must therefore be suitable to allow regeneration of juniper and oak woodland in and around the existing areas of these habitats, namely at Young Wood and the Juniper stand in the

Swinside Valley. Young Wood is of particular significance because at 450m altitude it is thought to be the highest altitude oak wood in the UK.

There is also a more general objective to consolidate and expand the areas of these habitats across the SSSI and SAC. Woodland, scrub and scattered trees contribute significantly to the overall diversity and health of the upland ecosystem. The aim is to achieve a better balance of habitats across the common.

Keith Kirby (Natural England Principal Specialist, Woodlands) advises that at least 10% expansion of oak woodlands is likely to be necessary under the Habitats Directive; such expansion will be necessary before the habitat can be considered to be in 'favourable conservation status'. The achievement of 'favourable conservation status' for all listed habitats and species is the main aim of the Directive (as set out in Article 1). The UK Biodiversity Action Plan target is also for c.10% expansion of oak woodlands. He also advises that Cumbria is probably the single most important area in England for this habitat, and therefore a priority area for habitat consolidation and expansion.

Plate 3: Area of soil slippage at Roughton Gill, Glenderaterra. 2007.

The proposals will be of particular benefit to the breeding bird population. Tree nest sites in the Skiddaw area are in such short supply that Merlin, Buzzard and Raven all regularly compete for the same sites. Increased tree cover will also increase populations of small birds that will be prey items for Peregrine.

Ring Ousel is one of the Priority Farmland Bird species targeted in the Higher Level Stewardship Scheme, because its UK population has declined by more than 50% over the last 25 years. Skiddaw Group is one of the key sites for this species in England. Ring Ousels are associated with areas of the uplands with rich mosaics of upland habitat, including tree and shrub cover. They are particularly likely to benefit from the increased availability of berries (primarily Rowan and Juniper) which are their main fuel for the autumn migration to Morocco.

3.2 Landscape.
Very large areas of the common are currently expanses of white fell (*Nardus* grassland) or bracken. Existing woodland and scrub areas and scattered trees in gills are important landscape features and regeneration needs to take place if these features are to survive in the long term.

By improving the diversity and vitality of the upland ecosystem, the proposals will improve the overall attractiveness of the area. In particular they will help to develop a more visually interesting mosaic of vegetation types across the common. Five of the proposals are tucked into valleys and gills, so the impact on the open wild character of the fells is limited. The two regeneration sites situated on North and South facing slopes with their proposed fencing works will be more visually intrusive. It is however vital to achieve the regeneration objectives of these existing woodland and scrub sites with stock exclusion. Gills on the common will be significantly enhanced by the addition or consolidation of areas containing native trees and shrubs. Significant attention will be paid to detailed scheme design to ensure that appropriate landscape features are created and the visual impact of fencing is mitigated against by sensitive siting as discussed previously.

This proposal satisfies one of the key targets for the landscape Joint Character Area, Cumbria High Fells in restoring or creating upland oak woodland, semi natural ghyll woodland, upland mixed ash woodland and scrub of high environmental value (juniper).

3.3 Resource protection / sediment control.
Under the Water Framework Directive**,** Member States are required to achieve good ecological and chemical quality status of surface waters by 2015. This has lead to the identification and drive to address the main causes of diffuse water pollution, one of which is the entry of excessive amounts of sediment into water courses.

It is acknowledged that soils under woodland are generally well protected and that new woodland offers an effective approach to reduce sediment losses and erosion control in problem areas. It is accepted that woodland has been shown to benefit sediment control in providing shelter from wind, reducing water run-off, increasing rainwater absorption into the soil and improving soil strength and stability. Thus woodland is a land use option that has the potential to reduce soil erosion at source, limit sediment delivery and allows for the deposition within the flood plain.

Within Cumbria, the **Bassenthwaite Lake Restoration Programme** has commissioned research to identify the main sources of potential sediment pollution in the catchment area of Bassenthwaite Lake of which Mungrisdale Common forms the north easterly high fell section. H. Orr & D. Brown, (2004), produced a sediment risk map (Figure 1) using three variables, bare ground as the sources of sediment, slope angle to dictate the control on sediment delivery and vegetation cover with its trapping capacity. These variables were converted to a risk rating based on hydrological sub-catchments.

The areas with a medium to high risk ranking in the Glenderamackin and the Glenderaterra sub-catchments on Mungrisdale Common have been specifically targeted as locations for the woodland / scrub project proposal.

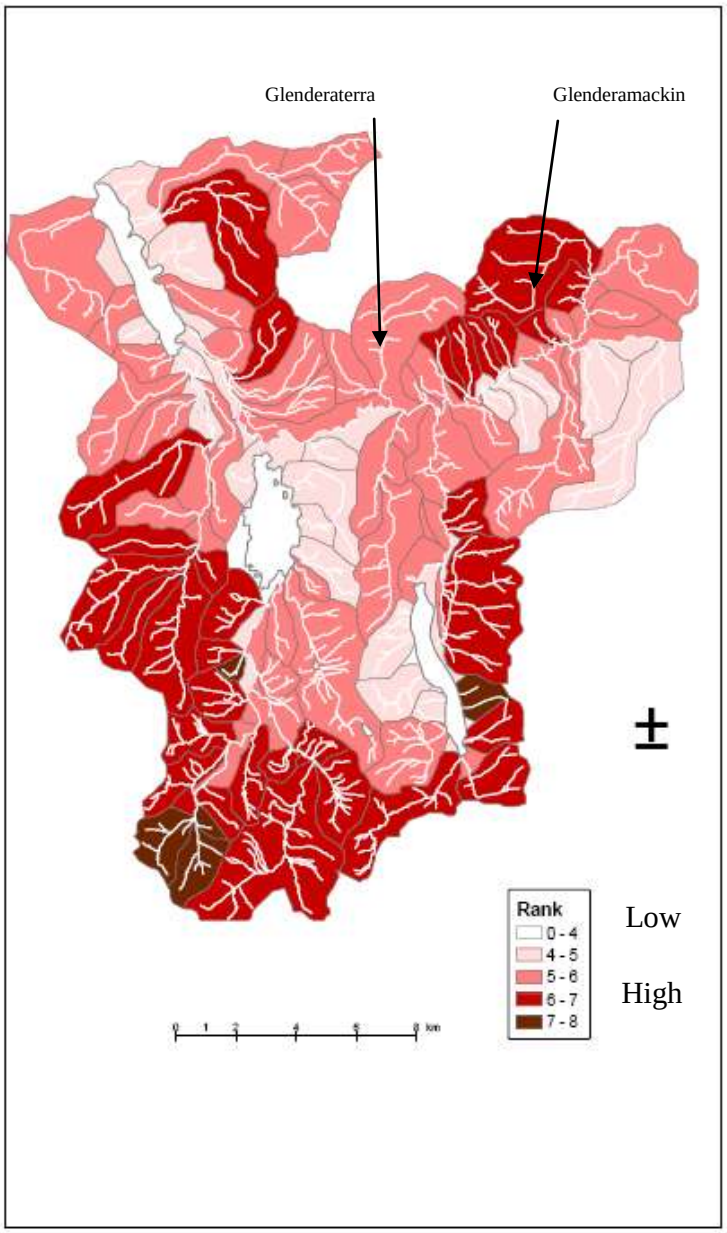

Figure 1. Sediment supply risk rating in sub-catchments of Bassenthwaite Lake Catchment. (H. Orr & D. Brown, 2004)

3.4 Historic.

The sites selected for woodland restoration / scrub planting are former woodland sites as indicated by the species found in these locations, such as bracken, gorse and the more obvious example of Young Wood or the isolated birch, rowan or willow that can be found in the gill areas. Historically the uplands were covered by woodland 7000 years ago, but this has declined over the many centuries, the shrinking only abating in periods when there has been a downturn in agricultural incomes, similar to today, or a thriving market for wood products. The project hopes to reverse this fragmentation of the woodland in part.

Plate 4: Indicator of historic woodland - Wood Sorrel under the bracken near Glenderamackin, 2006.

3.5 Carbon sequestration and climate change mitigation.
Woodland is important from the perspective of sediment control as mentioned earlier particularly in stabilising the soil structure and improving soil strength. It is also beneficial in allowing more absorption of rain water into the soil, and thus slowing water runoff. Woodland becomes important as a land use option with the increasing adverse effects of climate change to mitigate against flood risk.

There is consensus amongst many climatologists that in the UK the Summers will be getting hotter and the rains although may deliver an average quantity of water that we would expect if measured over the year, will in fact deliver it with more ferocity and in more copious amounts in shorter periods of time. Unless a holistic action is taken to mitigate against such events, such as woodland creation, not just in the flood plains, but throughout the catchment including the high fells, some would consider that events like the Carlisle and Keswick floods will become more common with unprecedented damage both to communities and to the environment.

With the increasing levels of carbon dioxide emissions into the atmosphere, many scientists over the last twenty years have suggested this is the precursor to global warming and consequential climate change. It is widely accepted that woodland is an important land use option for the purposes of carbon sequestration and the project objectives align with the **North West Climate Change Action Plan** that is currently being developed by Natural England, and the Cumbria High Fells JCA pilot project.

4. Site Description.

4.1 Souther Fell.
This proposed site borders the common on its most western point. It is the most visual of locations and care will be taken to minimise the landscape impact of the proposed

temporary fencing to this area. The west facing slope, that can be viewed from the A66 and the road to Mungrisdale Village, is dominated by dense bracken right across the fell to the start of the village. However at the southern end of this fell, is a hillock with a gill behind that is partially wooded on the non-common side of the boundary, - the gill being the boundary. It is proposed that the planting will link to the existing woodland providing a balance on both sides of the gill. It will extend up the gill, slope and northwards before coming down to the common boundary. It is anticipated the area will have between 50% and 60% open space with a decreasing density of tree cover going up the slope away from the gill. This woodland will partially be hidden behind the knoll but as it establishes itself, will greatly enhance and pleasantly contrast with the impoverished vision that the bracken currently provides.

Plate 5: Souther Fell proposed planting, the gill feeding Glenderamackin

The enclosure does not cross a public right of way, however a path used as a gathering route is present to the south of the proposed area. The design will ensure the fencing avoids this path. The provision of self closing gates, where helpful to all users of the common, will continue to allow access into the enclosure with strategic placement of the Open Access symbols.

4.2 Glenderamackin.

This site is hidden in the River Glenderamackin valley behind Souther Fell. The proposal is to plant along the river banks on both sides, stabilising these areas and linking to the isolated birch and willow scrub that is already present. The enclosure will extend westwards into the bracken and up the slope and gill of Bannerdale Crags. To minimise the intrusion of the fence line the same principles will be adopted as of Souther Fell to use the bracken as cover. Two river gates will be required at either end of the enclosure over the gill.

This enclosure will not cross a public right of way (PRoW) although a PRoW exists to the west side of the proposed enclosure. The fencing will be sited some 15m from this path and will be concealed in the dense bracken that presently encroaches to the footpath. Access will continue into the enclosure through the provision of self closing gates to all users of the common. Open Access symbols will be provided to ensure that walkers are aware that they may go into the planting if desired.

Plate 6: Glenderamackin planting site showing path, gill and bracken beds.

4.3 Roughton Gill.

Roughton Gill is situated on the south western side of the common feeding the Glenderaterra Beck. Land slippage is evident on the steeper sided slopes of the gill, (see plate 3) exacerbated by sheep grazing particularly on the flush areas. It is proposed that this gill will benefit from stock exclusion with tree planting although there is some isolated remnant woodland and natural regeneration may be possible. Bracken is not so prevalent to hide the fence. It is proposed the fence will run outside of the ridge. To put the fence below the line of the ridge may result in a breach by stock particularly in times of heavy snow where it can be retained, causing the fence to break. This will undermine the objectives of the planting.

The enclosure will go as far as the top of the water fall (eastern extremity), beyond this point, there is a gathering route where sheep can cross the stream. Graziers have asked that this be kept clear. The PRoW passes some distance from the western tip of the enclosure. The fencing will have gates on both sides of the gill to ensure that stock can be removed if present and river gates will be required at either end of the area over the gill. The lower river gate and proposed fence line will be up stream some distance from the ancient bridge and PRoW as this area is used as a picnic site. Self closing gates with Open Access symbols will also be present to ensure walkers are aware that they can enter the

enclosure. Visibility and access to geological features in this enclosure will be maintained.

4.4. Glenderaterra.

The proposed woodland site is in two parts below the old Blencathra mine, because of the presence of a bridal way and a gathering track for the graziers that runs along the common boundary. These proposed sites link to existing woodland both north and south of the enclosures, outside of the common, on the banks of the Glenderaterra. The southern existing broadleaved woodland has been fenced under the Bassenthwaite Restoration Project and its species composition shall be replicated in the new sites. The northern woodland comprises of conifers, which it is hoped at some point, will be felled and replaced with broad leaved native woodland. As it stands, the northern plantation is very conspicuous by its shape and colour and sits awkwardly in the landscape. The proposal will help to alleviate this intrusion.

Plate 7: Glenderaterra bracken beds.

These areas have dense bracken and it is anticipated there will be limited natural regeneration. The fence line can partially be concealed to minimise the visual intrusion.

As stated previously the project enclosures in this location are in two parts to ensure that no bridal way, Commoners gathering route or PRoW is obstructed by a fence, despite the anticipated extra cost that will be involved. They will have self closing gates with the appropriate Open Access symbols to ensure public access and removal of stock should the need arise. The northern most enclosure's eastern boundary follows some distance from the PRoW and walkers will be able to look into the open woodland from an elevated position.

4.5 Young Wood restoration.
To achieve the desired SSSI objectives (Appendix 2) for the hanging oak woodland it is necessary to erect a fence to enclose the area. It sits in a conspicuous manner on the side of a south facing slope and can be seen from the public right of way that runs along the base of the valley.

There is characteristically little evidence of regeneration within the wood itself. By providing stock exclusion through the provision of a fence, the wood can naturally regenerate itself at its fringes, and be allowed to 'walk'. Additional planting using acorns propagated from the oak woodland may occur after year five if there is little evidence of this regeneration. However, the site initially, will have minimum management intervention.


Plate 8: Young Wood

It will be difficult to hide the fence below the current wood line, as the vegetation is prostrate with the limited depth of soil in places and does not have dense bracken cover that other sites provide. The fence will, however, allow an area of expansion of the wood along the contour in both directions. It will allow for a 25m buffer above the northern edge for regeneration although it is anticipated the woodland is at its altitude limit. The majority of the fenced area will exist below the woodland where it is anticipated the majority of the regeneration is likely to take place.

The enclosure will have self closing gates with the appropriate Open Access symbols to ensure public access and removal of stock should the need arise. The southern boundary of the proposed enclosure follows some 30m from an existing tracks which is used as a gathering route. This track is not obstructed.

4.6 Swinside Valley juniper restoration.
Like Young Wood it is necessary to temporarily fence this area of an existing juniper stand to achieve the SSSI conservation objectives, (See plate 2, Appendix 2) and allow for natural regeneration. Again the fencing will be conspicuous and very difficult to hide but it is envisaged the fencing requirement will be for a 15 year period. The fence line will avoid ridge lines where possible to minimise the visual impact. There will be minimum management intervention for five years. If there is limited regeneration after this period a propagation programme will ensue.

The fence line will have self closing gates for access and stock removal, with the Open Access signage discussed previously. It will not obstruct a graziers gathering route at the base of the slope and bank of the River Caldew and will be sited 20m from the sheep fold that is present outside the north west corner.

5. Project Management and Design.

As stated it is necessary to erect a temporary fence in each case to ensure total livestock exclusion for at least ten years, after this period there may be a requirement for some controlled grazing. It is envisaged the fencing will be in place for fifteen years and if it is found necessary for a fencing requirement beyond this period, a new Secretary of State Application will be made. If the fencing is not deemed necessary after this point, it will be Natural England or its equivalent's responsibility to fund the removal of the fence line. The fence will be maintained as a condition of the HLS agreement.

Figure 2. Tree Guard Example.

The Common is CROW land so the proposed enclosures will have access furniture such as self closing gates at several locations along each fence line to ensure that the general public are not excluded from these sites. The locations of these sites do not cross any public rights of way or infringe on graziers gathering routes.

Once the fencing is erected, from November to March native tree species shall be planted at a average density of 250 plants per hectare. Native tree species are defined as species that have naturally reached Cumbria without the assistance of man and exclude sycamore and beech which generally support less insect and bird life than native species. Introduced species can also become dominant and thus reduce the diversity of plant and animal species over time.

Trees will be planted using both random and cluster spacing to simulate natural regeneration patterns. Within the clusters, plants will have approx. 2-3m random spacing with no linear planting patterns at the lower area of the slope or gill. As the clusters progress up the slope or away from the gills, this spacing can increase within the cluster. Throughout the entire area, clusters will vary in distance from each other and at random positions allowing for glades / clearings. At the edges of each cluster and the fenced area as a whole, planting spacing / density will feather out, (Figure 3). Within the cluster only

two or three well matched species can be used but it is preferable that clusters consist of single species and that these clusters vary in size from a single tree to larger stands of 50m. or more in width. Clusters of slower growing trees such as the oak will be large enough to prevent shading out by adjacent clusters consisting of taller trees. Gaps between clusters will range from 7m to 20m or more. At the site fringes will be small shrub species. It is anticipated that the open space within the area will range from between 50% and 60%.

The tree whips will at the very least have spiral guards to give protection against mechanical bracken control (strimming) and vole damage, but it is envisaged 1.2m aesthetically sensitive tubes (dark green, square mesh plastic netting guards) plus tanalised stakes lasting 5 years for protection against Roe Deer will be used, (figure 2). These will be maintained to reduce the appearance of neglect that is often apparent within planting sites.

Tree species will be Birch / Hazel / Rowan / Regenerated Oak Seedlings / Hawthorn / Juniper and in the wet areas virus free Alder / Willow. This will follow Forestry Commission guidelines for new native woodlands. Tree / scrub whips will be sourced from locally grown stock where possible. Such trees of local 'provenance' will grow much better than those bought from elsewhere in the UK or abroad and will be a better investment in the long term. Plants will be transplants 45-60cm high or whips 90-120cm high (BS 3936).

Bracken control will be performed twice in a year, late June and late September starting the year following the first tree / scrub planting on the areas around each planted whip covering two square metres.

Failure rate will be reviewed and a further 250 trees/ha will be planted in November to March season, two years after the first season. The process will repeat with bracken control of the previous planted areas plus the new planted areas in the following year. Bracken control will continue to occur around whips until three years after the last planting so in total it is anticipated there will be five years of targeted mechanical bracken control and two staggered planting periods with a review in the fifth year to monitor natural regeneration and assess failure rates for a further planting period.

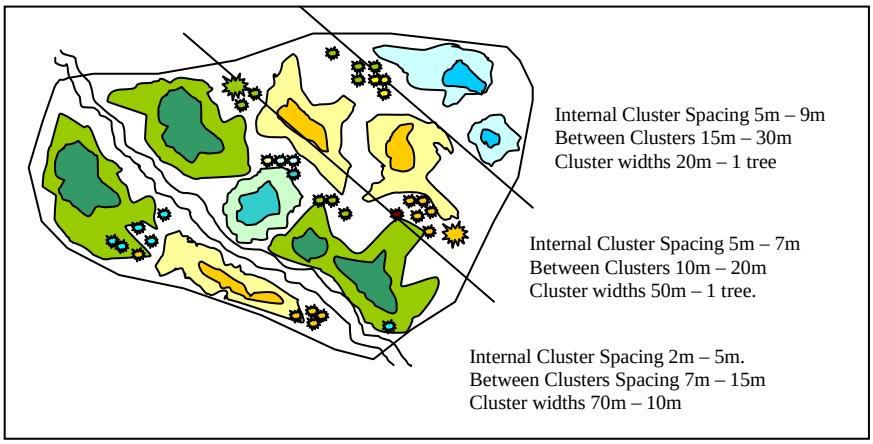

Figure 3: Example of fenced enclosure showing random clustering.

6. Recommendations.

The project proposals contribute towards:

- Management requirement to achieve SSSI in favourable / recovering condition (in accordance with SSSI Conservation Objectives)
- The UK and Cumbria BAP targets for Upland Oak Woodland expansion.
- Farmland Bird Targets, particularly favouring the Ring Ousel.
- The expansion of Upland Oak Woodland necessary for the habitat to be considered to be in Favourable Conservation Status under the Habitats Directive.
- The safeguarding of important existing landscape features
- Enhancement of the landscape
- Resource protection/sediment control in the Bassenthwaite Catchment

To achieved the desired project objectives it is considered necessary to provide temporary fencing to exclude stock and mitigate against the risk of failure, protecting the investment and reducing the maintenance requirement with the number of trees involved. Although fencing can be visually intrusive, the project design and implementation will ensure that this intrusion is minimised as much as is possible by using bracken cover and by strategic placement for example avoiding sky lines or ridges and utilising the contours. The impact of the planting sites on the open character of the fell will be minimised by predominantly using gill sites. The varied density planting will allow for open space and rides in the design. These sites will be significantly enhanced by the addition and consolidation of native trees and shrubs. It is considered inappropriate to reduce stock numbers to an extent that a fence would no longer be required for the proposed enclosures without undermining the sustainability of the agricultural enterprise on the common.

References:

Orr, H.G. & Brown, D. (2004) "Bassenthwaite Lake Geomorphological Study" Environment Agency (England), October 2004.

Nisbet, T., Orr, H.G. and Broadmeadow, S. (2004) "Evaluating the role of woodland in managing soil erosion and sedimentation within river catchments: Bassenthwaite Lake Study" Final report to the Forestry Commission (England), July 2004.

Appendices:

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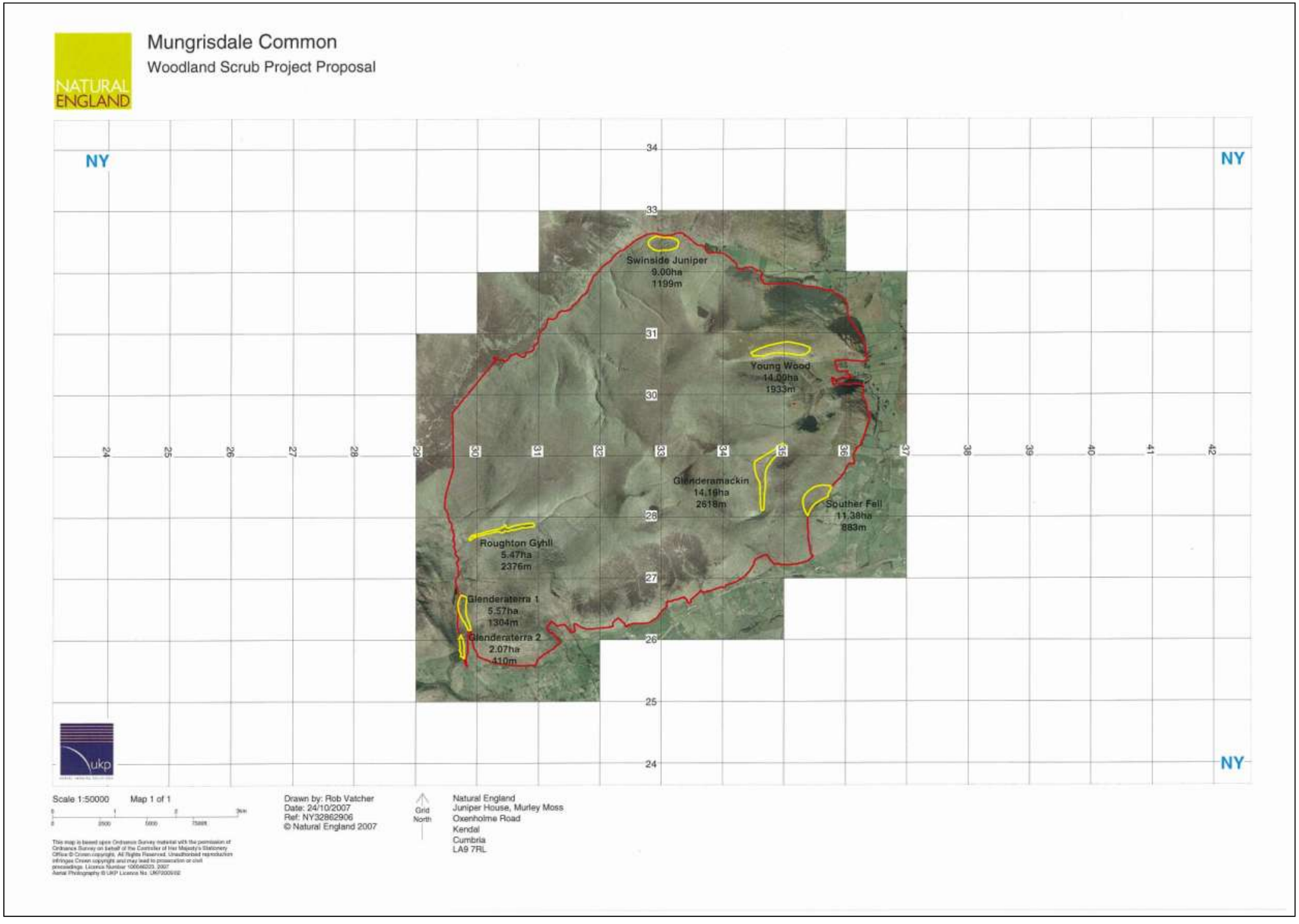
This symbol indicates the approximate direction of the camera shot for the overlays on the aerial map.

This indicates the position of a self closing access gate, stock gate or river gate.


Mungrisdale Common
Woodland Scrub Project Proposal
NATURAL ENGLAND
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Swinside Juniper
9.00ha
1199m
Young Wood
14.09ha
1933m
Glenderamackin
14.19ha
2618m
Souther Fell
11.38ha
883m
Roughton Gyhll
5.47ha
2376m
Glenderaterra 1
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1304m
Glenderaterra 2
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Map 1 of 1
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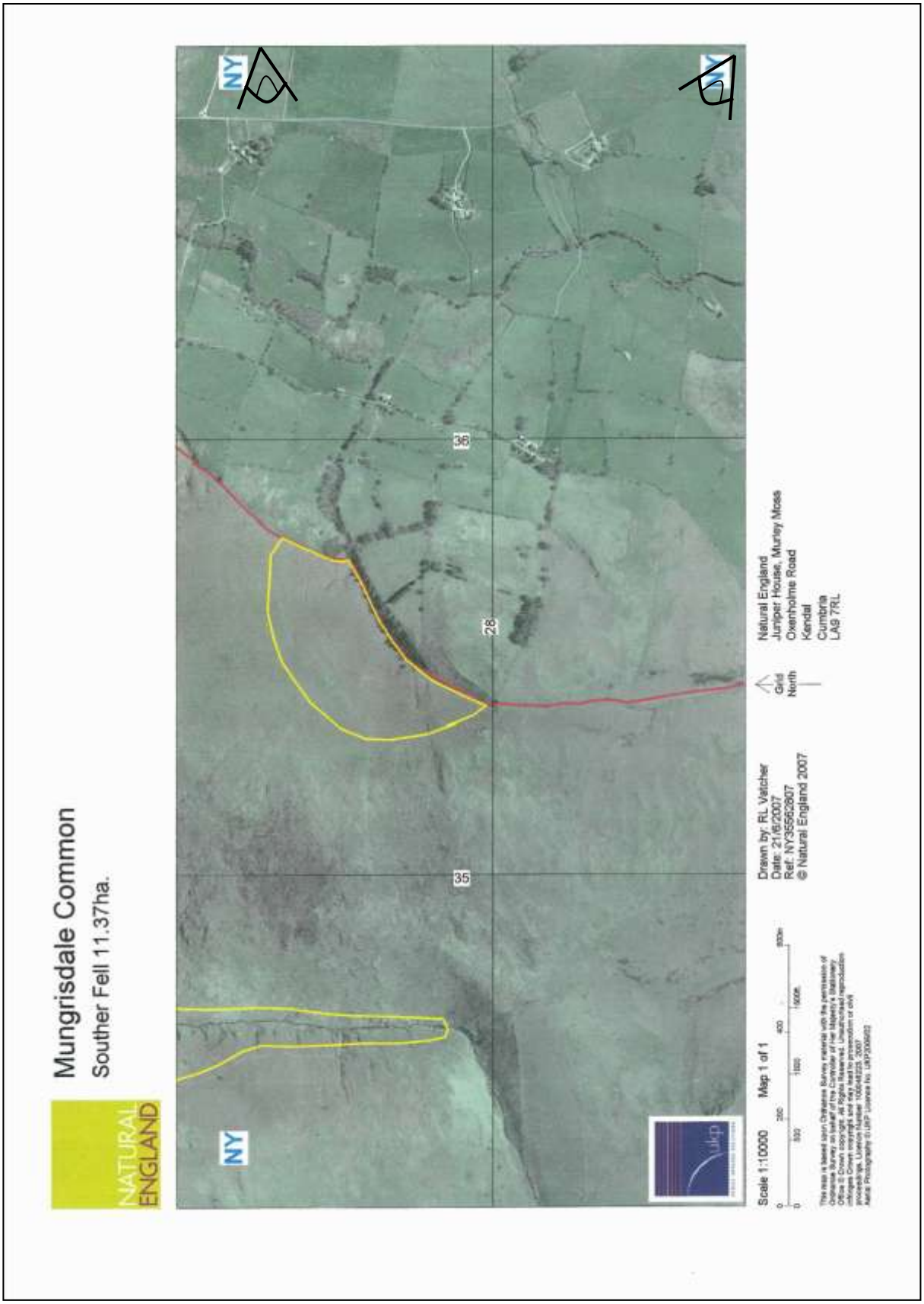
Kendal
Cumbria
LA9 7RL

Souther Fell 11.37ha.


Mungrisdale Common
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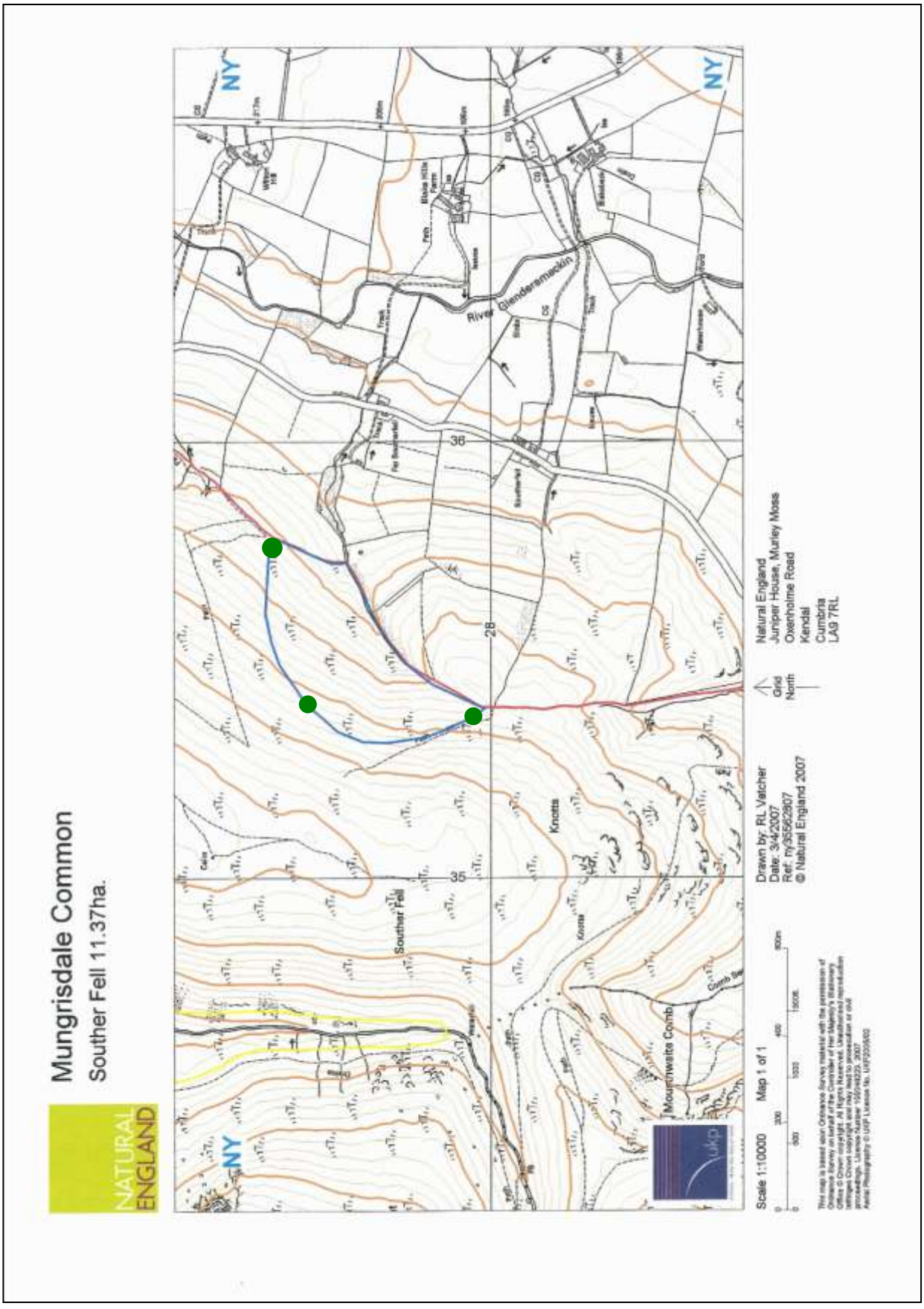
Mungrisdale Common
Souther Fell 11.37ha.
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River Glenderamackin
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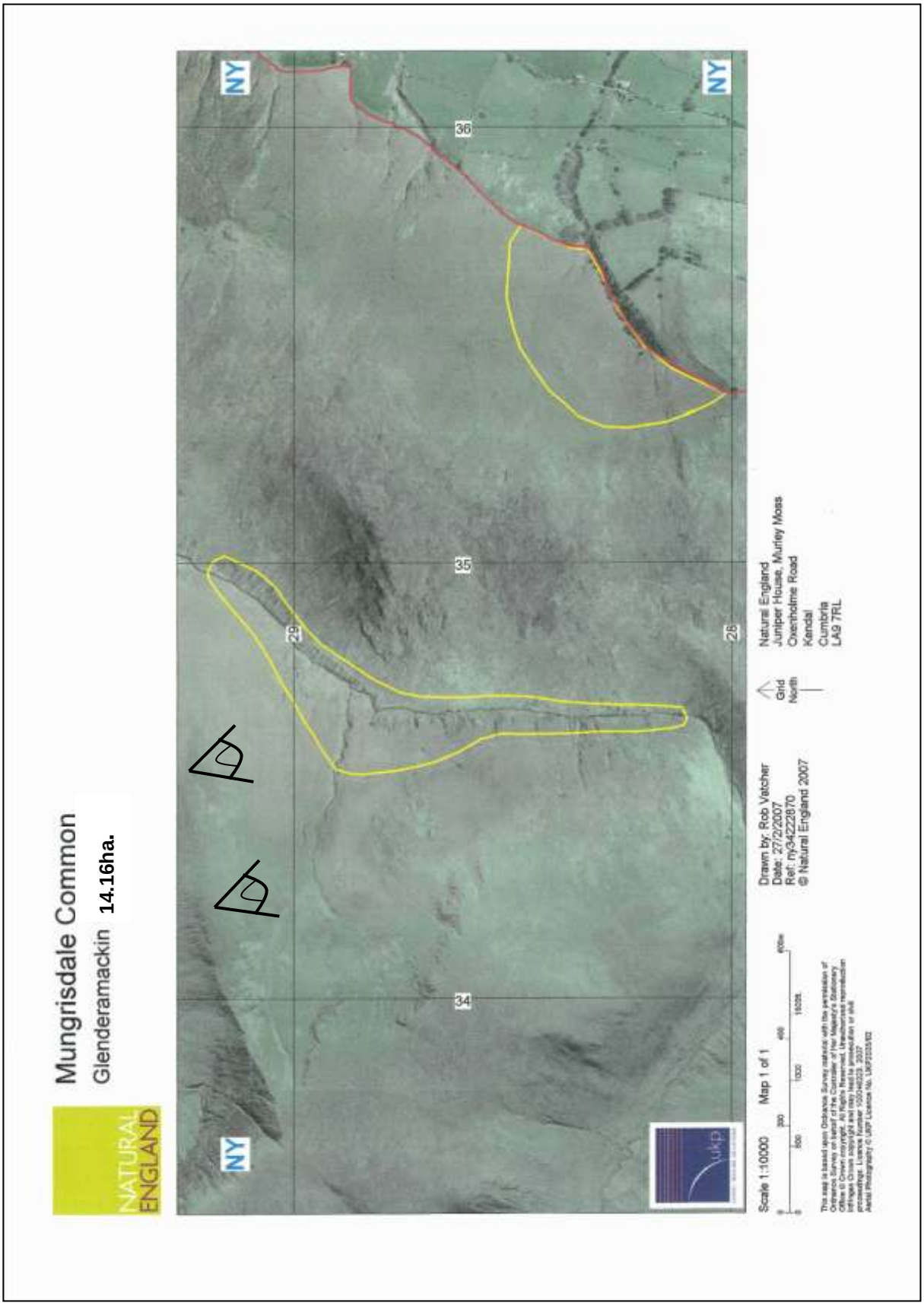
Map 1 of 1

Glenderamackin 14.16ha.


Mungrisdale Common
Glenderamackin **14.16ha.**
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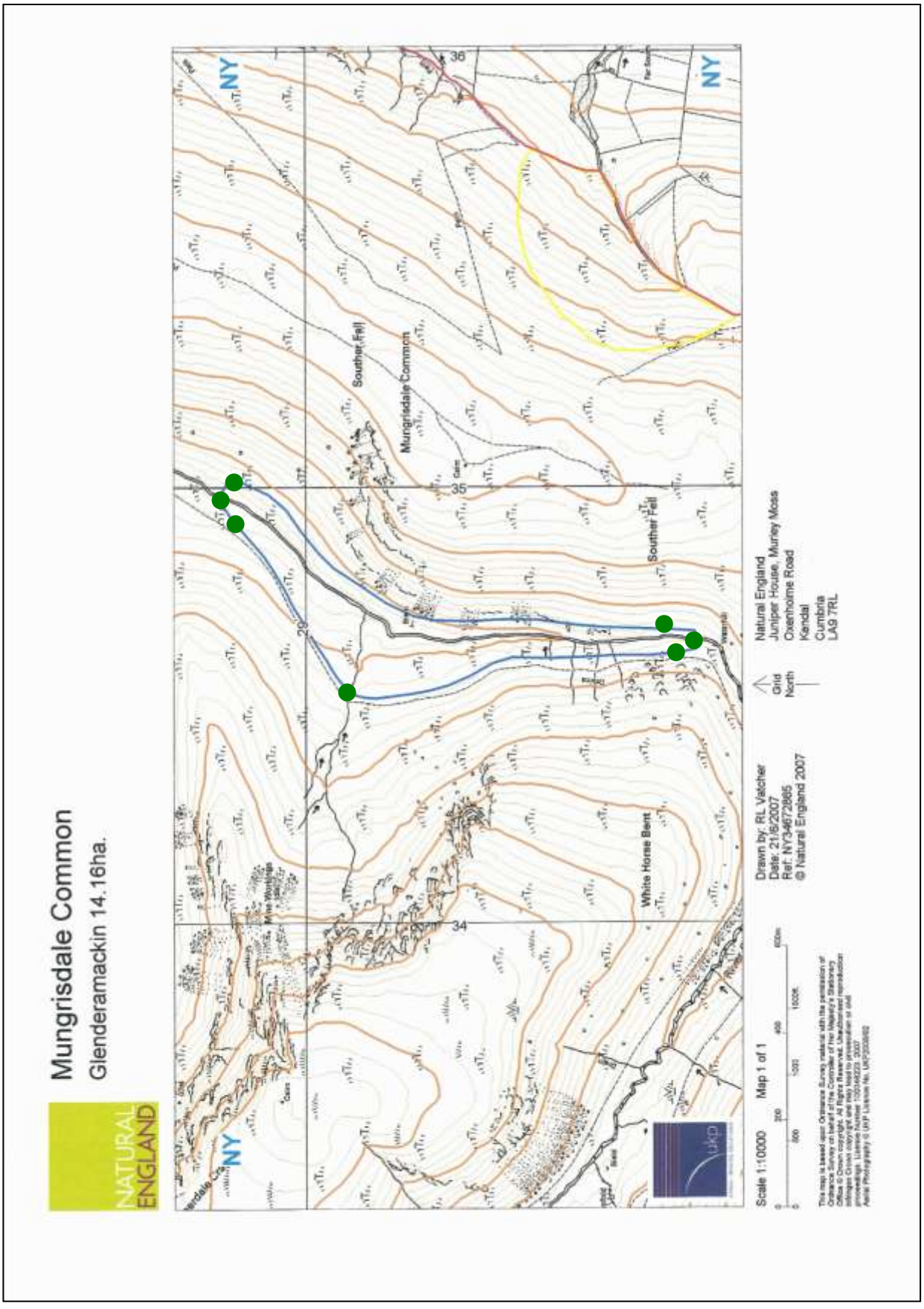
Mungrisdale Common
Glenderamackin 14.16ha.
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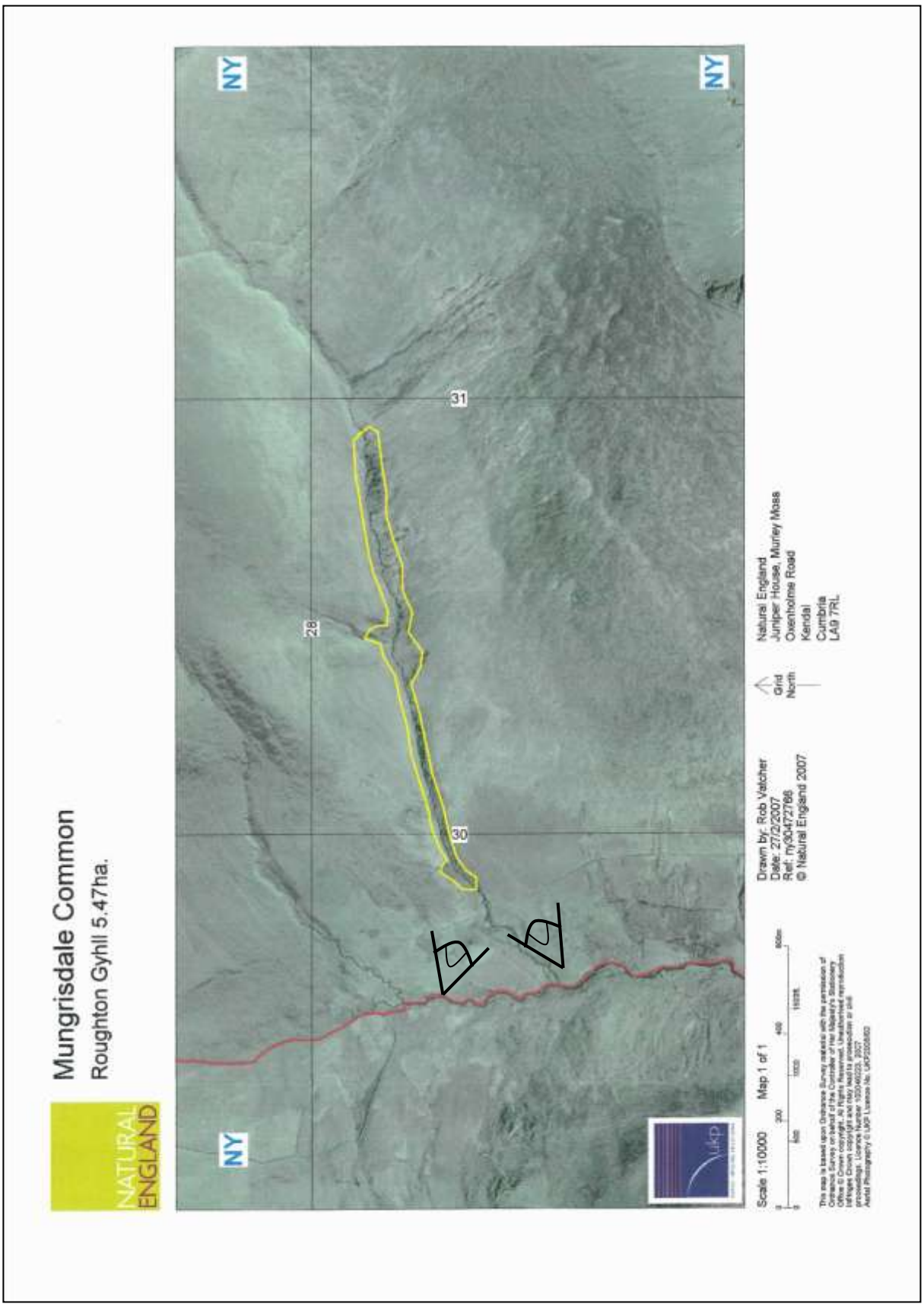
Souther Fell
Mungrisdale Common
White Horse Bent
Scale 1:10000
Map 1 of 1
Drawn by: RL Vetcher
Date: 21/6/2007
Ref: NY346728B5
© Natural England 2007
Grid North
Natural England
Juniper House, Murley Moss
Oxenholme Road
Kendal
Cumbria
LA9 7RL

Roughton Gill 5.47ha.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Roughton Gyhll 5.47ha.
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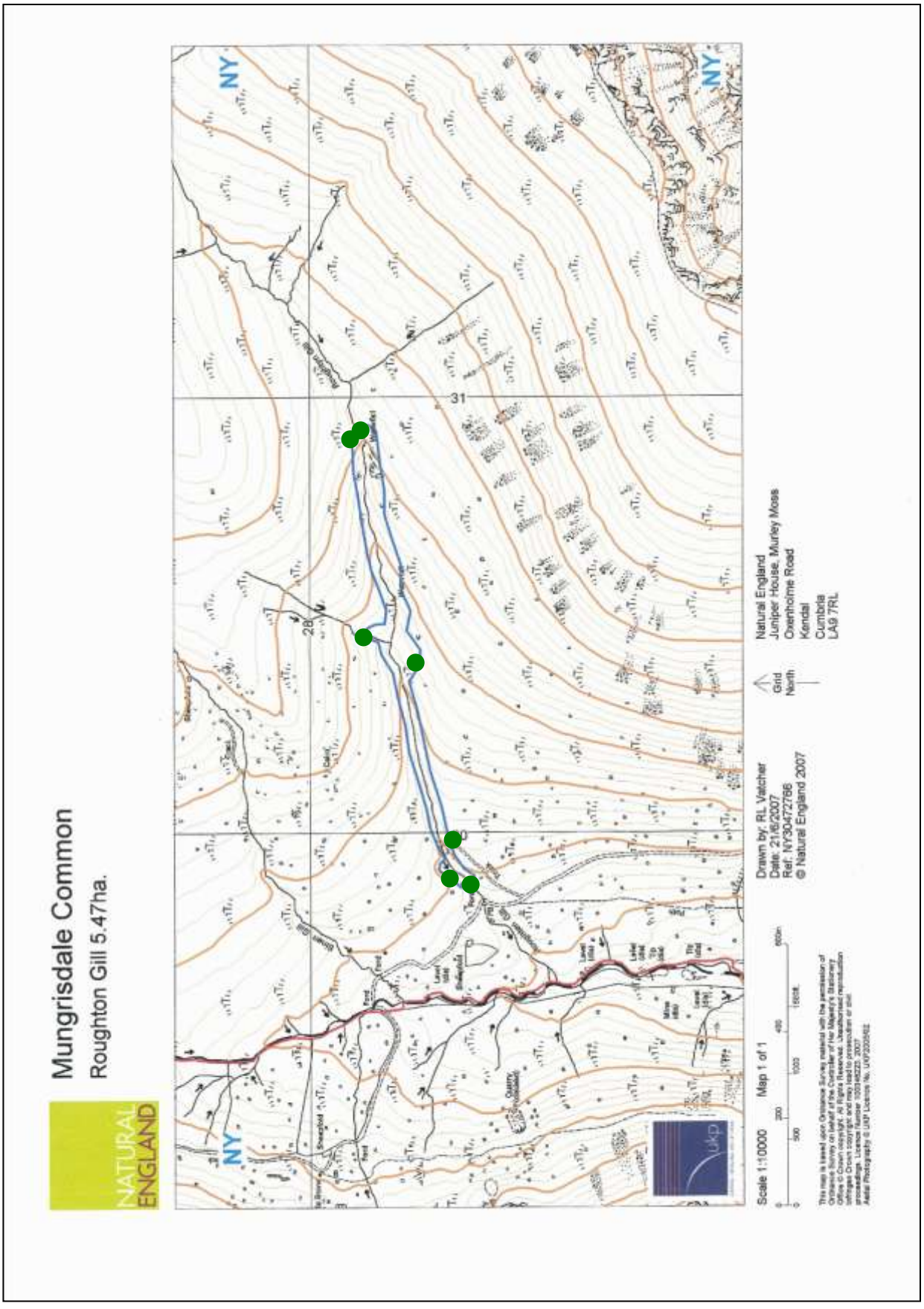
NY
NY
NY
31
28
30
Scale 1:10000
Map 1 of 1
Drawn by: Rob Vatcher
Date: 27/2/2007
Ref: ny304727f66
© Natural England 2007
Grid North
Natural England
Juniper House, Murley Moss
Oxenholme Road
Kendal
Cumbria
LA9 7RL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Mungrisdale Common
Roughton Gill 5.47ha.
NY
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28
Scale 1:10000
Map 1 of 1
Drawn by: RL Vatcher
Date: 21/6/2007
Ref: NY304727/86
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Natural England
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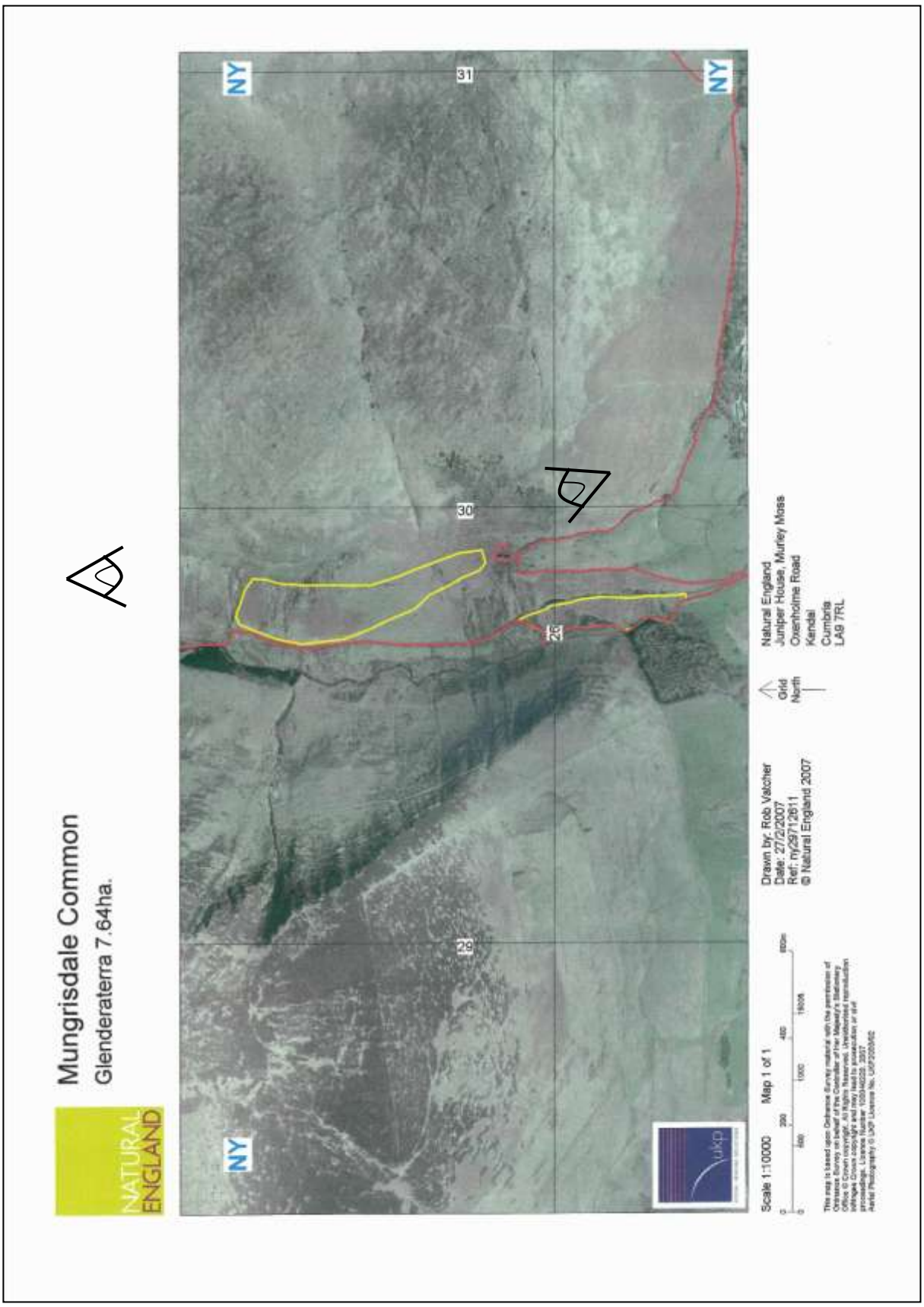
Oxenholme Road
Kendal
Cumbria
LA9 7RL

Glenderaterra 7.64ha.


Mungrisdale Common
Glenderaterra 7.64ha.
NATURAL ENGLAND
NY
31
30
29
28
Scale 1:10000 Map 1 of 1
Drawn by: Rob Vatcher
Date: 27/2/2007
Ref: ny297126l1
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Grid North
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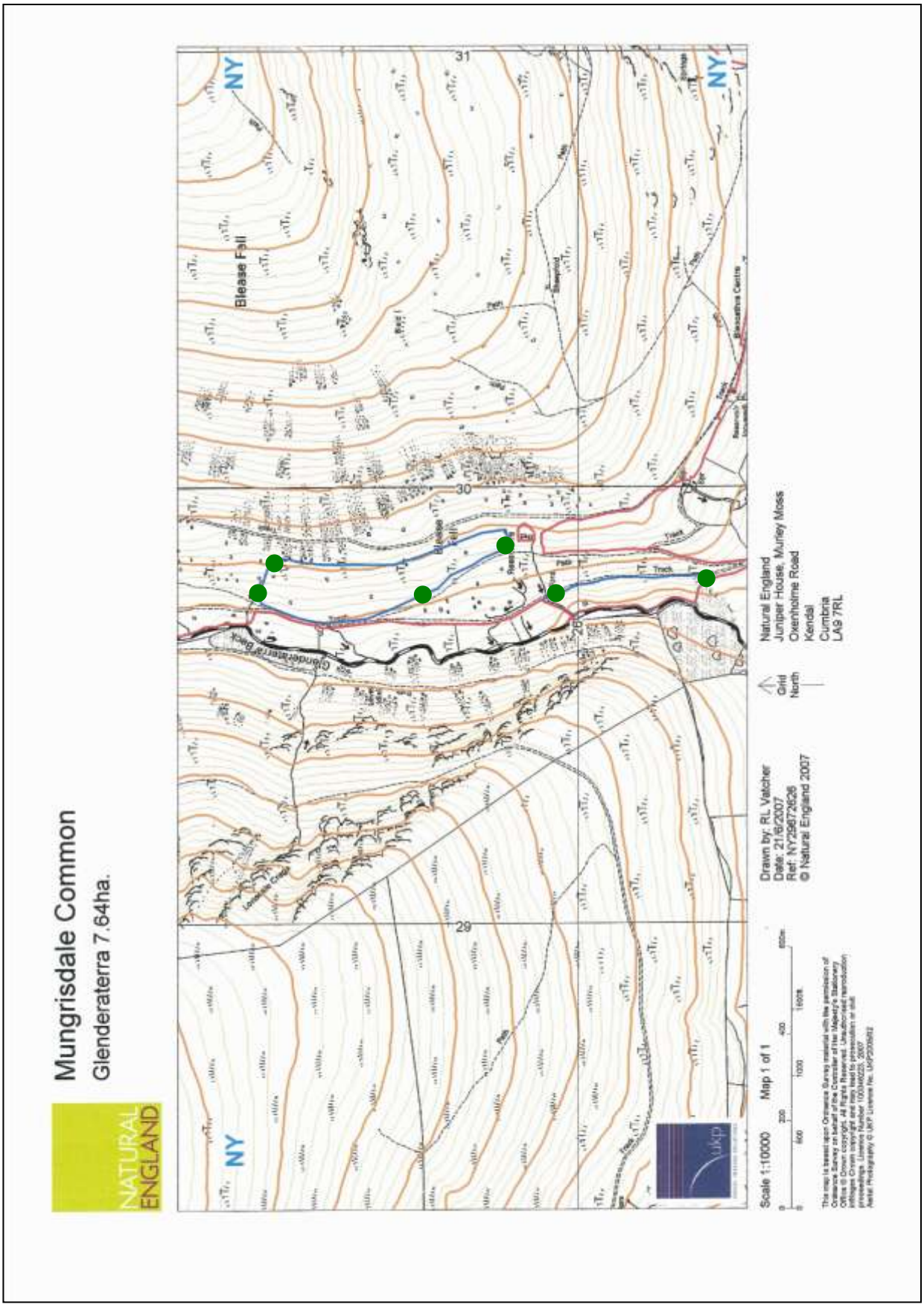
Juniper House, Murley Moss
Oxenholme Road
Kendal
Cumbria
LA9 7RL


Mungrisdale Common
Glenderaterra 7.64ha.
NATURAL ENGLAND
NY
31
30
29
28
Blease Fell
Glenderaterra Beck
Track
Scale 1:10000
Map 1 of 1
Drawn by: RL Vatcher
Date: 21/6/2007
Ref: NY29872626
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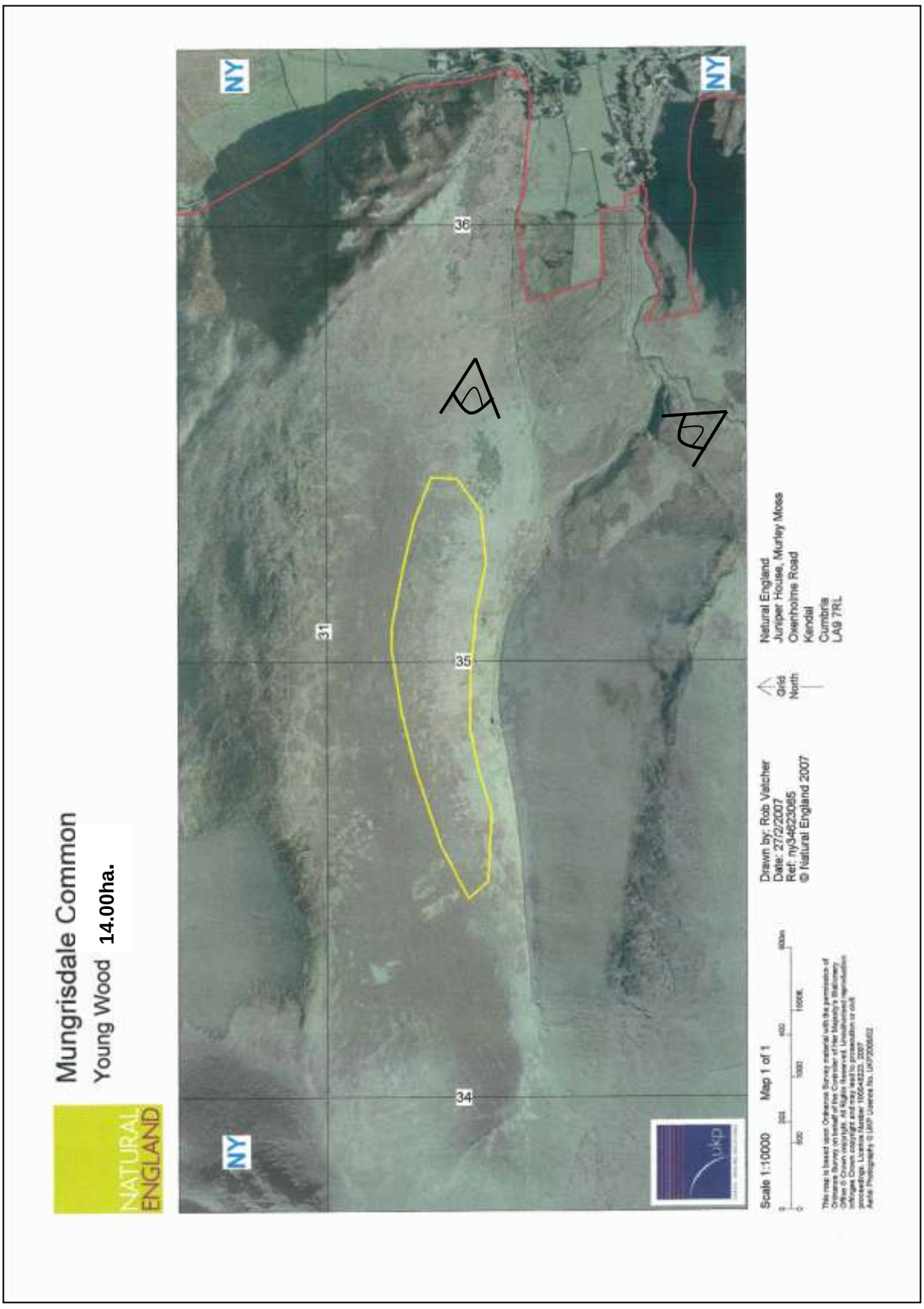
Grid North
Natural England
Juniper House, Murley Moss
Oxenholme Road
Kendal
Cumbria
LA9 7RL

Young Wood 14.00ha.


Mungrisdale Common
Young Wood 14.00ha.
NATURAL ENGLAND
NY
NY
NY
36
35
34
31
Scale 1:10000 Map 1 of 1
Drawn by: Rob Vaitcher
Date: 27/2/2007
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Grid North
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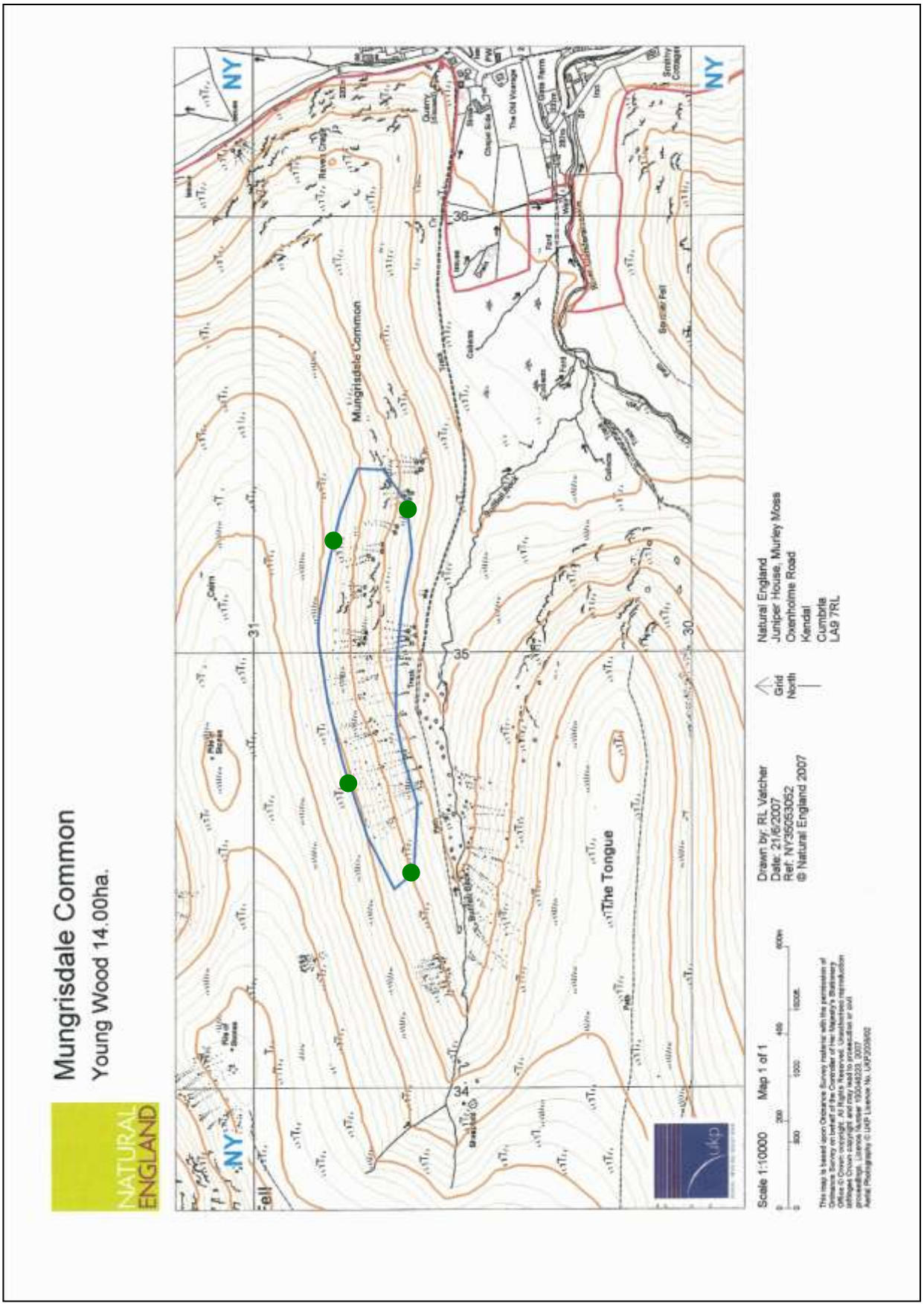
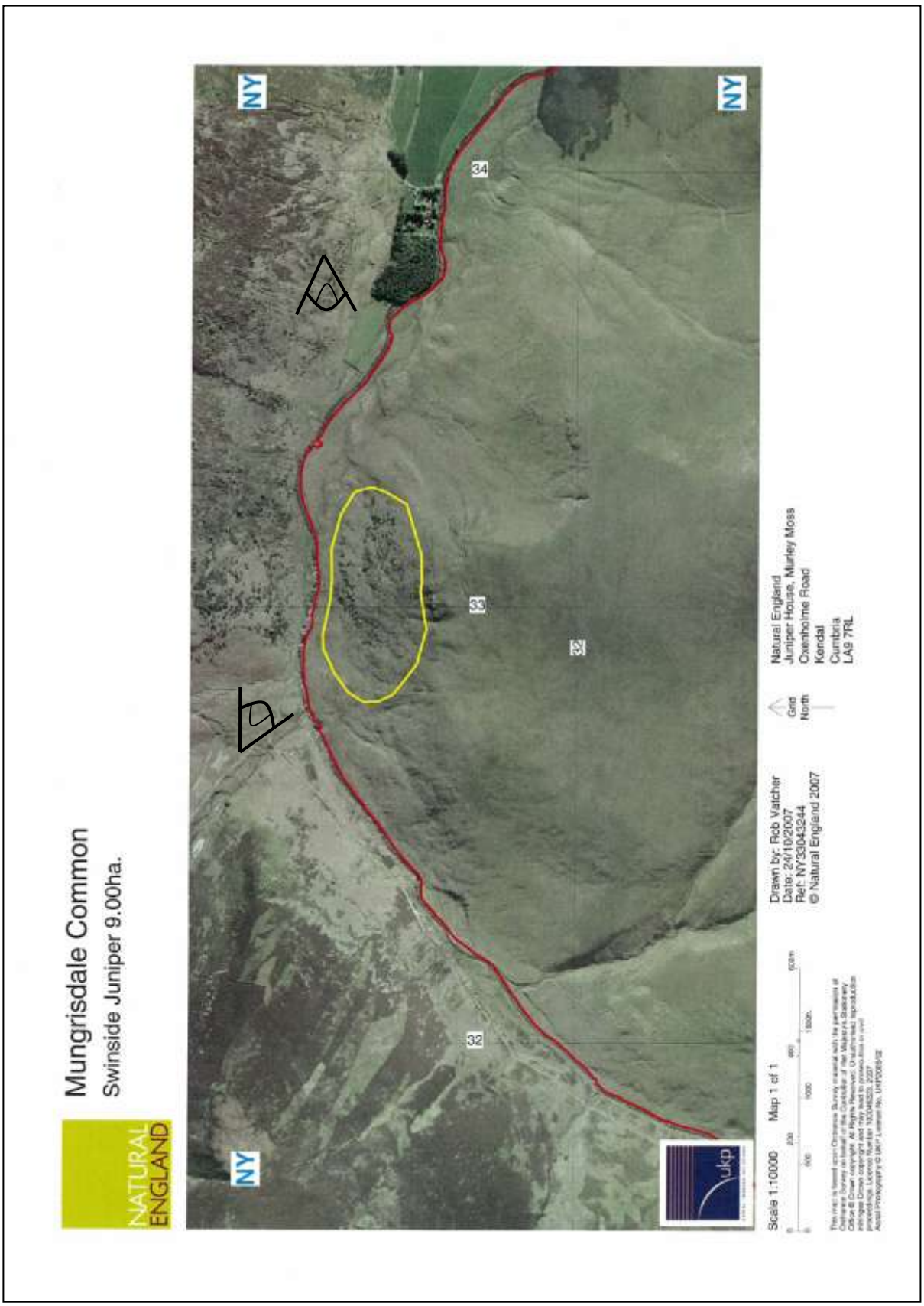
Juniper House, Murley Moss
Oxenholme Road
Kendal
Cumbria
LA9 7RL


Mungrisdale Common
Young Wood 14.00ha.
NATURAL ENGLAND
Mungrisdale Common
The Tongue
Natural England
Juniper House, Murley Moss
Oxenholme Road
Kendal
Cumbria
LA9 7RL
Drawn by: RL Vatcher
Date: 21/6/2007
Ref: NY35053062
© Natural England 2007
Grid North
Scale 1:10000
Map 1 of 1

Swinside Juniper 9.00ha.


Mungrisdale Common
Swinside Juniper 9.00ha.
NATURAL ENGLAND
NY
NY
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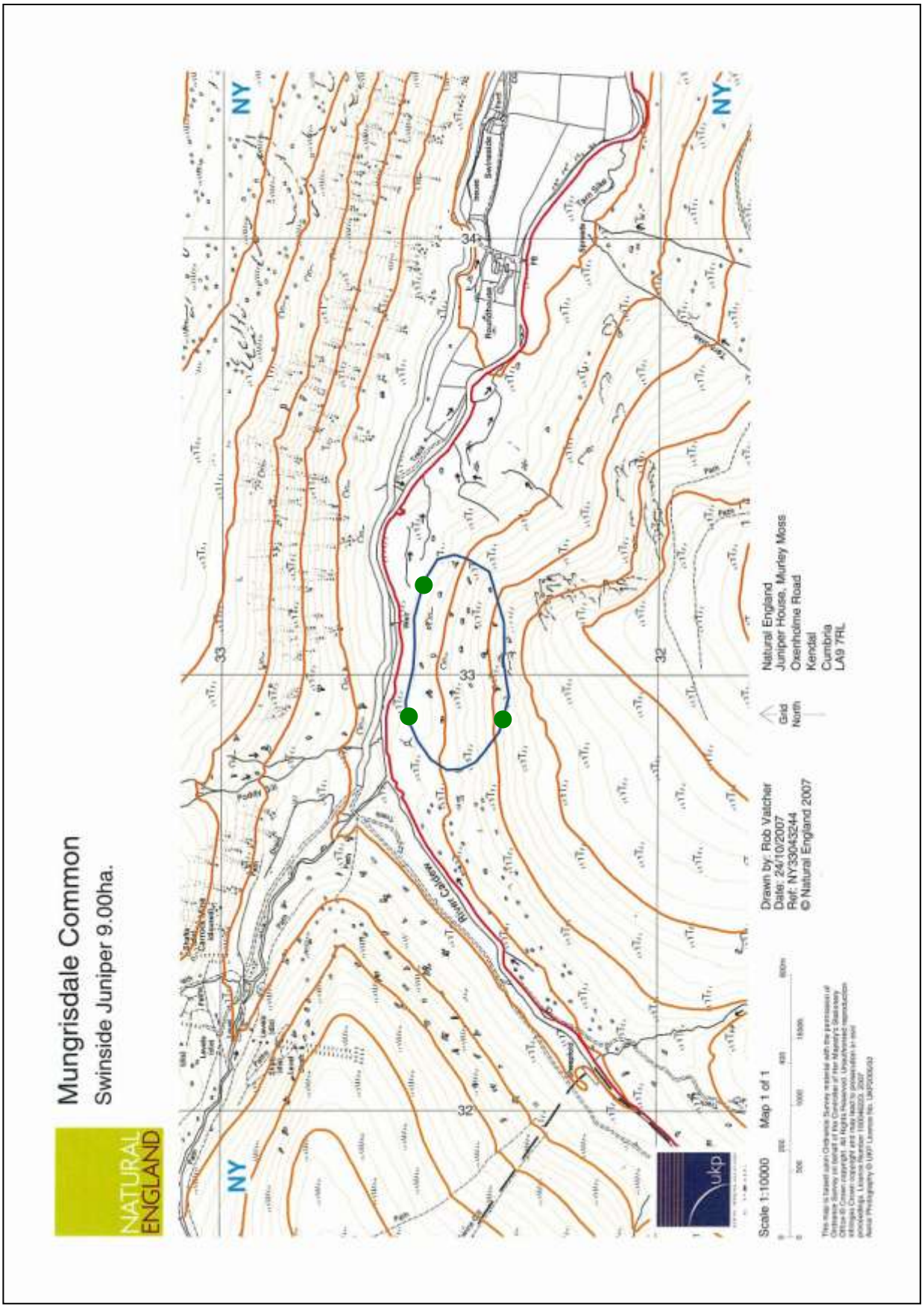
34
33
32
32
A
B
Scale 1:10000
Map 1 of 1
Drawn by: Rob Vaicher
Date: 24/10/2007
Ref: NY33043244
© Natural England 2007
Grid North
Natural England
Juniper House, Murley Moss
Oxenholme Road
Kendal
Cumbria
LA9 7RL


NATURAL ENGLAND
Mungrisdale Common
Swinside Juniper 9.00ha.
NY
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32
Drawn by: Rob Valcher
Date: 24/10/2007
Ref: NY339043244
© Natural England 2007
Grid North
Natural England
Juniper House, Murley Moss
Oxenholme Road
Kendal
Cumbria
LA9 7RL
Scale 1:10000
Map 1 of 1
ukp

Appendix 2: SSSI Summary of Conservation Objectives.

Skiddaw Group SSSI, part of the Lake District High Fells SAC
Summary of Conservation Objectives
(Draft)

Feature (as shown on objectives map)	National Vegetaion Classification Types found on site (or other details)	Where found	Objective	Summary of attributes used for condition monitoring (see site-tailored assessment forms for full details) i.e definition of 'good quality'
Blanket Bog**	M2, M17, M19	Primarily in Skiddaw Forest, the high plateaus of High Pike, Knott, Calva and Bowscale Fell to Blencathra, and valley mires around the edges of the massif	All areas of deep peat (over 0.5m in depth) to have an intact surface with no active drains and no burning regime. Good quality vegetation on all these areas of deep peat, including restoration of blanket bog where necessary.	Moss cover should be high, preferably continuous, with Sphagnum bog mosses varied, frequent and widespread in wetter bogs (valley mires), and feather mosses abundant in drier bog types. The vegetation should be made up from a mixture of at least six typical upland mire species (heathy dwarf shrubs, cotton grasses, deer grass, sun-dew, bog bean, bog asphodel and stiff sedge (Carex bigelowii)). No stand should be dominated overwhelmingly by Hare's-tail cotton grass, dwarf shrubs or deer grass.
Dry Heath*	H8, H10, H12	Widespread	Good quality heath in all places where there are free draining, nutrient poor acidic soils. This includes areas where there are currently remnant dwarf shrubs in the sward ie acid grassland with a dwarf shrub component. Restoring these will help reverse the fragmentation of heathland.	At least three species of dwarf shrub and at least three species of mosses, liverworts and lichens frequent and widespread. Three quarters of vegetation cover provided by dwarf shrubs. Juniper or other native trees and shrubs may be an acceptable heath component in some areas (to be mapped).
Wet Heath*	M15	Valleys and edges of the massif	Good quality wet heath on all areas of wet, shallow peat.	Cross-leaved heath should occur throughout, and at least 25% of the vegetation should consist of sedges, sundews, Sphagnum bog mosses, non custose lichens (e.g Reindeer Moss), White Beak-sedge and Deergrass. There should be 25%-75% cover of dwarf shrubs. Not dominated by trees and shrubs or grasses and sedges. Soft rush cover should be less than 10%.
Mineral-rich flushes*	M10	Small number of flushes on slopes of Carrock Fell and in Silver Gill	Good quality vegetation in small alkaline flushes over mineral soils and shallow peats.	Undisturbed flushes which support a rich variety of frequent and widespread small sedges and mosses. Intact tufa deposits.
Montane Heath (with dwarf shrubs)*	Montane habitat mosaic of U7, U10 and H19	Most important area is Skiddaw summit. More fragmented habitat exists on Blencathra, Knott and Calva.	Good quality montane heaths restored on snow -bound slopes at high altitudes.	Mats of dwarf shrubs, with characteristic species such as Reindeer Moss (Cladonia lichens) or Woolly hair-moss (Racomitrium) contributing a major part of the ground cover often forming mats of vegetation 5cm to 10cm deep.
Montane Heath (with mosses and sedges)*			Good quality montane grasslands restored on snow-bound slopes and windswept plateaux at higher altitudes.	Open or closed grasslands with stiff sedge (Carex bigelowii) and woolly hair-moss (Racomitrium lanuginosum) prominent with bilberry and lichens.

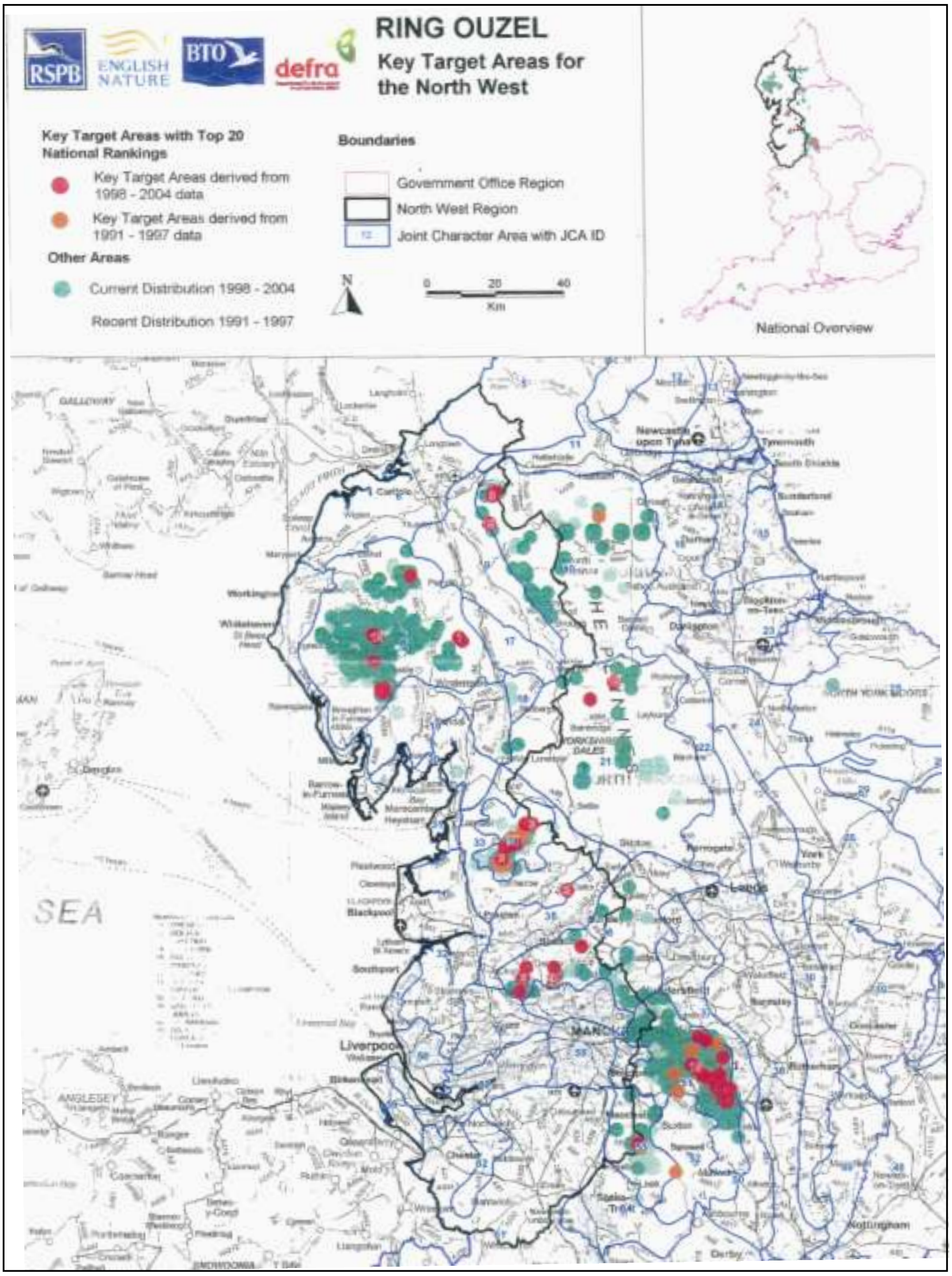
Acidic Rocky slopes*	U16, U21 +	Scattered throughout	Good quality vegetation in crevices and cracks within siliceous rocky slopes.	Lightly grazed, open vegetation with less than 25% bracken, trees and shrubs.
Scree*	U21	Largest areas are on Skiddaw, Blencathra and Carrock Fell but other areas scattered throughout	Good quality vegetation on screes.	Parsley fern and Woolly Hair-moss (Racomitrium) at least occasional on areas of undisturbed stable scree. 33% cover free from overgrowth by vascular plants
Juniper scrub*	W19	Main Juniper stands are in the Swineside Valley and on The Tounge (Bowscale Fell). Fragmented Juniper occurs throughout on crags.	Good quality juniper scrub at existing locations and overall area of juniper scrub increased	Juniper should be growing strongly - at least one third of the Juniper scrub should growing as dense patches (at least ....ha of dense Juniper in total). At least 10% of Juniper should be fruiting and the cover of young and pioneer bushes must exceed that of old, ailing and dead bushes.
Oak Woodland*	W11, W17	Young Wood, Mungrisdale is the only major woodland. A few scatterd trees in gills elsewhere represent remnant woodland cover.	Good quality woodland in exisiting location, fragmentary woodland consolidated and overall area of woodland cover increased	Woodland should have a diverse physical structure and age structure throughout. Native tree species should be able to renenerate in suitable locations (e.g clearings) and frequent deadwood should be present.
Clear Water Mountain Lakes*		Bowscale Tarn, Scales Tarn	Tarns with high water quality and characteristic vegetation	[Water quality indicators to be added]
Slender green feather-moss*		Black Moss (east of Carrock Fell) and Roughton Gill	Populations maintained (in size and extent) in existing locations	
Outstanding Assemblage of Plants	Includes Bog Rosemary, Bog Orchid, Pale Forget-me-not, Serrated Wintergreen, Lesser Twayblade, Cloudberry, Mountain Pansy	Numerous locations throughout the massif		
Outstanding Assemblage of Invertebrates	High altitude invertebrates, especially ground-living and tussock-dwelling beetles	Skiddaw summit likely to be key area		
Outstanding Breeding Bird Community	Includes Ring Ousel, Merlin, Peregrine, Buzzard, Raven, Snipe, Curlew, Wheatear, Whinchat	Throughout		

Geological Features				
Burdell Gill	None.	Unit 1	None. Likely to be deleted from Geological Conservation Review.	N/A
Wet Swine Gill	Exposed antimony-bearing vein in stream section.	Unit 2	To maintain mineral exposure at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation, engineering works or specimen collecting.
Roughtongill	Great variety of minerals (including lead, zinc and copper minerals, some of which are very rare types) in exposed viens, underground exposures and mine dumps	Unit 3	To maintain mineral exposures and mine dumps at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation, engineering works or specimen collecting. Mine spoil undisturbed.
Carrock Fell	Outcrops of gabbro; Ordovician Igneous rock	Unit 4	To maintain outcrops at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation or engineering works
Great Cockup	Outcrops of rocks (Tremadoc-Arenig) containing grapolite fossils	Unit 5	To maintain outcrops at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation or engineering works
River Caldew section	Exposures of intensely folded rocks of the Skiddaw Group, which provide insights into the formation of the Lake District Mountains	Unit 6	To maintain outcrops and stream sections at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation, engineering works or specimen collecting.
Skiddaw	Stone stripes formed by freeze-thaw processes	Unit 7	To maintain active stone stripe formation	Stone stipes not obscured or damaged by excavation or trampling. Active freeze/thaw processes which maintain the stone stripes able to continue.
Grainsgill Caldew Valley	Outcrops of greisen formed where igneous rocks intruded into the Skiddaw Slates	Unit 8	To maintain outcrops at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation or engineering works

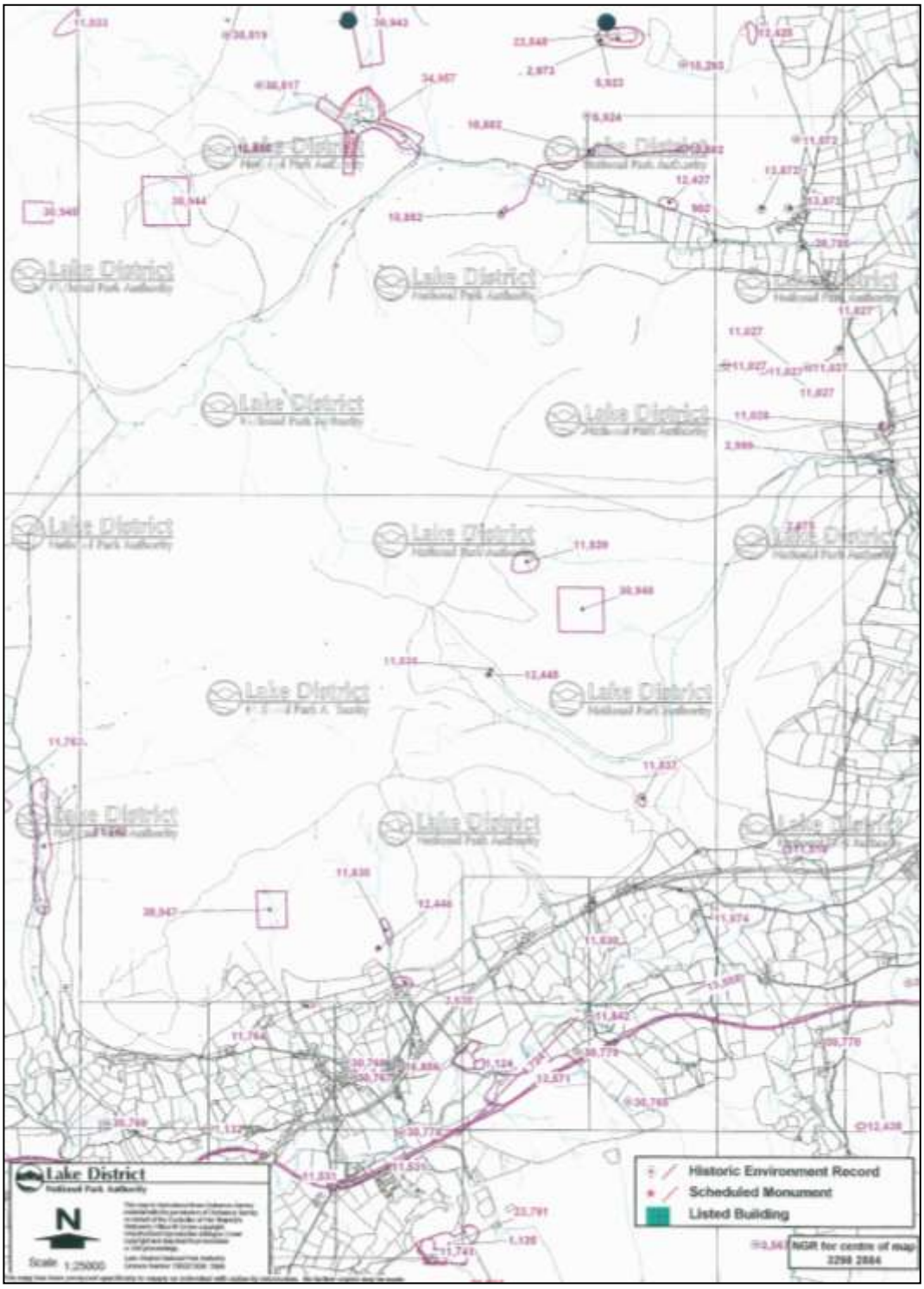
Raven Crags and Mungrisdale	Exposures of intensely folded rocks of the Skiddaw Group, which provide insights into the formation of the Lake District Mountains	Unit 9	To maintain outcrops and stream sections at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation, engineering works or specimen collecting.
Dry Gill Mine	Vein containing lead minerals, underground exposures and mine dumps.	Unit 10	To maintain mineral exposures and mine dumps at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation, engineering works or specimen collecting. Mine spoil undisturbed.
Red Gill Mine	Lead minerals now probably best seen in the mine dumps	Unit 11	To maintain mineral exposures and mine dumps at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation, engineering works or specimen collecting. Mine spoil undisturbed.
Carrock Mine to Brandy Gill	Three major tungsten-bearing mineral veins, visible on surface and in underground workings. Important minerals also in mine dumps.	Unit 12	To maintain mineral exposures and mine dumps at this site visible for study	Features of interest not obscured by excessive vegetation, tipping or landfill, tree planting, or damaged by excavation, engineering works or specimen collecting. Mine spoil undisturbed.

** European Priority Interest Features
* European Interest Features

Appendix 3: Ring Ouzel Key Target Areas for North West.


RSPB
ENGLISH NATURE
BTO
defra
RING OUZEL
Key Target Areas for the North West
Key Target Areas with Top 20 National Rankings
Key Target Areas derived from 1998 - 2004 data
Key Target Areas derived from 1991 - 1997 data
Other Areas
Current Distribution 1998 - 2004
Recent Distribution 1991 - 1997
Boundaries
Government Office Region
North West Region
Joint Character Area with JCA ID
N
0 20 40
Km
National Overview
SEA

Appendix 4: Historic Environment Record.


Lake District
National Park Authority
N
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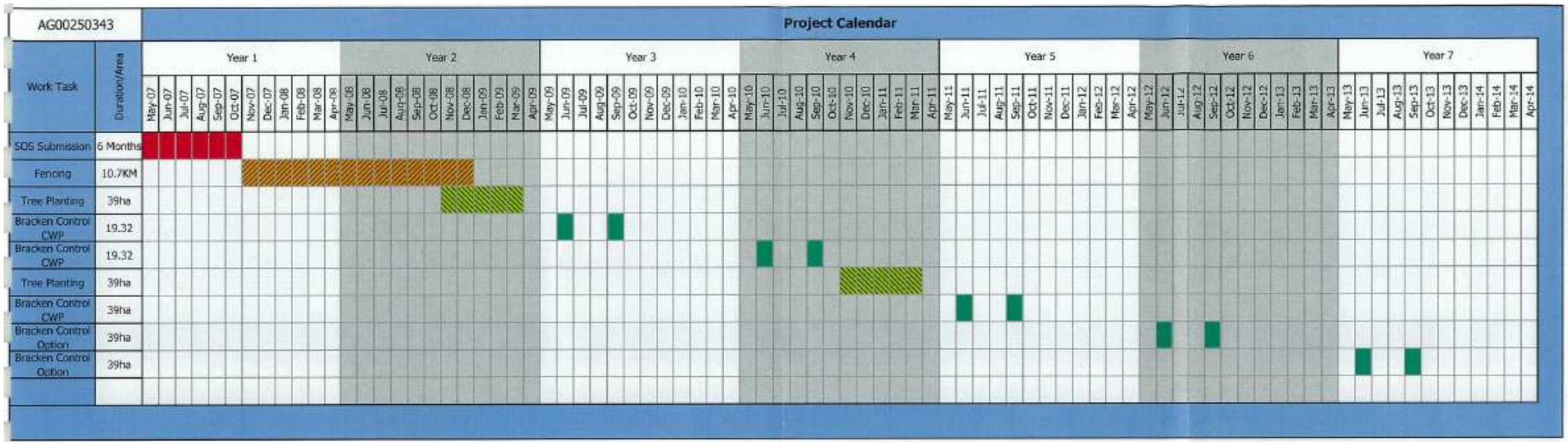
Historic Environment Record
Scheduled Monument
Listed Building
NGR for centre of map
3298 2884

Appendix 5: Woodland/Scrub Project Implementation Time Chart.


AG00250343
Project Calendar
Work Task
Duration/Area
Year 1
Year 2
Year 3
Year 4
Year 5
Year 6
Year 7
May-07 Jun-07 Jul-07 Aug-07 Sep-07 Oct-07 Nov-07 Dec-07 Jan-08 Feb-08 Mar-08 Apr-08
May-08 Jun-08 Jul-08 Aug-08 Sep-08 Oct-08 Nov-08 Dec-08 Jan-09 Feb-09 Mar-09 Apr-09
May-09 Jun-09 Jul-09 Aug-09 Sep-09 Oct-09 Nov-09 Dec-09 Jan-10 Feb-10 Mar-10 Apr-10
May-10 Jun-10 Jul-10 Aug-10 Sep-10 Oct-10 Nov-10 Dec-10 Jan-11 Feb-11 Mar-11 Apr-11
May-11 Jun-11 Jul-11 Aug-11 Sep-11 Oct-11 Nov-11 Dec-11 Jan-12 Feb-12 Mar-12 Apr-12
May-12 Jun-12 Jul-12 Aug-12 Sep-12 Oct-12 Nov-12 Dec-12 Jan-13 Feb-13 Mar-13 Apr-13
May-13 Jun-13 Jul-13 Aug-13 Sep-13 Oct-13 Nov-13 Dec-13 Jan-14 Feb-14 Mar-14 Apr-14
SOS Submission 6 Months
Fencing 10.7KM
Tree Planting 39ha
Bracken Control CWP 19.32
Bracken Control CWP 19.32
Tree Planting 39ha
Bracken Control CWP 39ha
Bracken Control Option 39ha
Bracken Control Option 39ha