



## Killeavy Castle Estate Landscape Restoration Plan

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**Location:** Killeavy Castle Estate, Ballintemple Road, Killeavy, Co. Armagh  
Townlands – Clonlum and Annahaia

**Project area:** c. 365 Acres

**Natural Heritage:** Slieve Gullion Special Area of Conservation (SAC)  
Slieve Gullion Area of Special Scientific Interest (ASSI)  
Ring of Gullion Area of Outstanding Natural Beauty (AONB)  
Local Wildlife Site – Hawthorn Hill Upper  
Landscape Character Area – Ring of Gullion  
Geology – Mourne Gullion Strangford UNESCO Global Geopark

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*The restored Killeavy Castle and Killeavy Castle Estate Hotel sit on the side of Slieve Gullion in South Armagh.*

## Background

Killeavy Castle Estate comprises 365 acres of farmland and mountain running from near the summit of Slieve Gullion through open heathland, forested land, semi-natural woodland, inbye grassland, to good farmland on level fields beside the Ballintemple Road.

The Estate is within County Armagh in the Province of Ulster and lies within the administrative district of Newry, Mourne and Down (NM&D) District Council. Killeavy Castle Estate is situated almost entirely within the Townland of Clonlum. The Estate begins at an elevation of 100m at the Estates serpentine driveway entrance on Ballintemple Road, its lowest point, climbing to 528m at the water's edge of Callaigh Berra's Lake near the summit of Slieve Gullion. Slieve Gullion at 573m is the highest mountain in County Armagh and has two ancient burial cairns one of which the highest surviving passage tomb in Ireland and the United Kingdom. There is a difference of almost 430m in altitude within the Estate giving a contrast of habitats and ecosystems and providing wonderful views of the unique ring dyke geological landscape of the Ring of Gullion and field patterns as the ladder farm boundaries run in straight lines to the east down the mountainside with regular cross-breaks delineating fields.

In 1963 the upper 202 acres of the Estate was leased on a 150-year term to the Northern Ireland Forest Service (NIFS). NIFS planted some of the site with Japanese larch, Sitka spruce, Lodgepole pine and semi-natural broadleaved species. The higher ground of grassland and heath remains unplanted.

In 1999 this higher land was declared an Area of Special Scientific Interest (ASSI) under the Nature Conservation and Amenity Lands Order (NI) 1985 for its heathland assemblages, breeding birds and geology. In 2000 this area was declared a Special Area of Conservation under the EU Habitats and Species Directive 92/43/EEC and forms part of the 'Natura 2000 Network' of important European sites. In 2023 Slieve Gullion and the Ring of Gullion became part of the Mourne Gullion Strangford UNESCO global geopark due to its geological, archaeological, cultural and biodiversity importance.

Husband and wife, Mick and Robin Boyle bought Killeavy Castle Estate in 2013. At the time of purchase the buildings and farmlands were derelict and neglected. They made a £13 million investment to create a 4-star world-class hotel, events centre and spa with woodland walks and a working farm on the slopes of Slieve Gullion.

The development of Killeavy Castle Estate has sensitively acknowledged and enhanced the local built and natural heritage assets of the Estate, focusing on sympathetically restoring the listed buildings and providing new structures while maintaining and rehabilitating the high nature and landscape value of the farmlands. The restoration work on the buildings and farmlands of the Estate was almost exclusively carried out by local South Armagh and South Down architects, engineers, contractors, suppliers and building workers.

The Hotel opened in April 2019 and currently employs over 120 staff, hosts over 150 weddings and events and caters for over 75 000 guests annually. Fresh produce farmed on site and the local area is championed in the cuisine offerings at the venue.

The farm is managed utilising nature friendly methods under a 'nature positive' ethos and strives to produce high quality food within a low carbon local food supply chain. The Estate grows its own herbs and vegetables and has an onsite butcher to prepare the Longhorn cattle and Cheviot sheep it produces for the hotel kitchens and for sale at the Farm Store.





*Michael and Pauline Boyle (parents of owner Mick Boyle) cut the ribbon to open Killeavy Castle July 2019. In her speech that day owner Robin Boyle spoke of their plans to remove the plantation timber and restore native broadleaf woodland to the upper part of the Estate.*

In parallel with building Killeavy Castle Estate Hotel and restoring Killeavy Castle and it's the farmlands owners Mick and Robin Boyle engaged with the Woodland Trust Northern Ireland and ecological consultant, Michael Meharg to map and understand the health and condition flora, fauna, and biodiversity of the broader Estate lands. The Environmental Report (*Dr Michael Meharg & Samuel Millar, 2017*), Woodland Assessment (*Woodland Trust NI 2018*), Killeavy Castle Estate and Woodland Restoration Plan (*Woodland Trust NI 2023*) are the foundation documents for this Landscape Restoration Plan.

In 2018 Killeavy Castle Estate began engaging with NIFS on its Estate restoration plans and over the next 4 years worked with the NIFS, Woodland Trust NI and ecologist Michael Meharg to develop and agree the high-level principles that underpin this Landscape Restoration Plan. In 2022 with the principles agreed, and once Killeavy Castle Estate provided NIFS a compensation payment for costs NIFS had incurred installing plantation timber on the estate that it would not harvest, the NIFS agreed to surrender the 1963 lease and allow Killeavy Castle Estate to begin the Estate landscape restoration works described in this plan.

The aim of this Landscape Restoration Plan is to increase recreation and tourism within the Ring of Gullion and South Armagh region, whilst also enhancing the existing High Nature Value (HNV) habitat of the area. The restoration works aims to create a suite of positive biodiversity and ecosystem impacts such as better provision for priority species, improved habitat and ecosystem connectivity, greater resilience to more frequently occurring extreme climatic or weather events (flooding, high winds and dry periods), greater resilience to tree diseases or pests (*Phytophthora ramorum*), higher levels of carbon sequestration and storage as well as providing a more natural visual amenity for the majestic Slieve Gullion.





*Michael and Pauline Boyle (parents of owner Mick Boyle) 4 October 2022 plant the first of 50,000 trees to be planted over 10 years. John Joe O'Boyle NIFS on their left and owners Mick and Robin Boyle are behind.*

For the purpose of the formatting and providing a visual overview of this plan, the c.365-acre estate has been sub-divided into 11 separate compartments as shown on the Figure 1. Estate land runs from the more actively managed farmland adjacent to the Ballintemple Road in the east (Compartment 1), succeeding into long-established mixed woodland (Compartment 2) rich grassland/wood pasture (Compartments 3) and broadleaf woodland regeneration (Compartment 8) on the slopes behind Killeavy Castle, before furthermore succeeding into an area of commercial forestry (Compartments 4,5,6 and 7) with parcels of upland acidic grassland and heather moorland (Compartment 11) on the higher slopes of Slieve Gullion above that again. There is also an outlying strip of land that includes ladder fields that run to Wood Road, situated between the main estate and Slieve Gullion Forest Park to the south (Compartment 10).



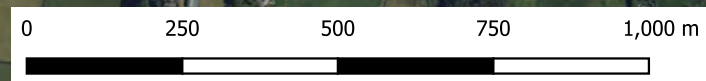
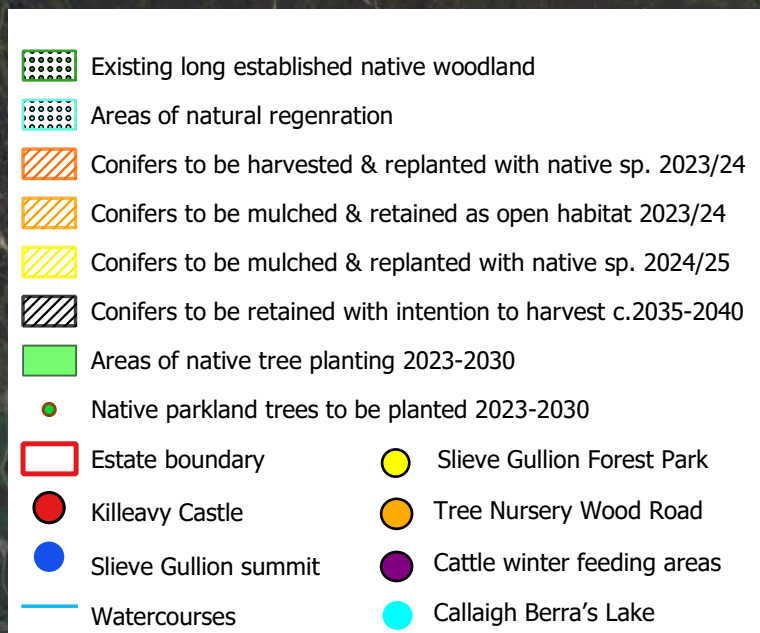
*Killeavy Castle Estate 2010 before restoration.*



*Killeavy Castle Estate 2040 after restoration.*



# KILLEAVY CASTLE ESTATE - WOODLAND PLAN





**Compartment 1 - approx. 102 acres (Unshaded area from Ballintemple Road extending above Killeavy Castle)**

The group of fields between the woods behind Killeavy Castle and Ballintemple Road will continue to be retained as actively managed farmland for the foreseeable future. The plan for these lands, post 2030 after the major restoration works on the upper woodlands is complete, is to widen and add new hedgerows on these fields to incorporate more tree cover with the aim to increase habitat for biodiversity, increase carbon sequestration and to produce opportunities for saleable timber as well as opportunities for fruit or nut harvests.

Widening of existing hedgerows will include planting an additional row of native tree species behind or alongside some of the existing hedges or ditches in this part of the estate, allowing for these trees to simply grow up and not be managed via trimming – this is sometimes referred to as a ‘Pontbren’ type hedge or shelterbelt. That type of hedge greatly enhances the shelter with shade reaching further out into the adjoining fields, help act as a buffer against prevailing winds reducing soil erosion, improve sward growth further into the field as well as create valuable wildlife corridors and habitats.

It is intended at the same time as widening and increasing the hedgerows in this compartment to incorporate parkland trees on the upper half of these fields (those fields adjacent and above Killeavy Castle) as shown in Figure 1. Please note that we do not intend to incorporate parkland trees on the lower fields of Compartment 1 (those fields below Killeavy Castle) because these are the most fertile fields on the Estate and the intent is to retain the option to return these fields to grain and vegetable production.



*Wooden tree cages for parkland trees in fields.*



*Native trees hedged protected with fencing.*

### **Compartment 2 - approx. 35 acres (dotted green area)**

When comparing the historical Ordnance Survey 1830 map (see Figure 4) with current orthophotography and satellite imagery, it is apparent that the percentage of woodland cover on the parcel of land directly behind the castle is quite similar to what it was almost 200 years ago. The woodland survey conducted by the Woodland Trust NI in 2018 identified a total woodland area of approx. 40 acres, with the higher approx. 10 acres of that classified as long-established mixed woodland. Some of the main ancient woodland features identified included:

- veteran or mature trees including Beech, Oak and Scots pine species
- old tree stumps and fallen/standing deadwood
- positive indicator species of woodland flora such as Bluebell, Greater Woodrush and Wood Sorrel
- some archaeological evidence of old stone ditches and wood banks suggesting previous woodland grazing.



*Figure 2 - OS 1830 map with Killeavy Castle noted with a red star.*

The woodland in Compartment 2 will be minimally managed focussing on weed reduction and supplementing the woods with individual trees planted as required to increase biodiversity. Post 2030 after the major restoration works on the upper woodlands is complete, selective harvesting methods will be introduced into areas within this compartment which are single species dominant (generally mature Beech) to progressively thin out the Beech and introduce a wider range of native broadleaf species and native Scots pine.

A tree nursery will be established on Wood Road to gather and propagate seeds from native broadleaf species and native Scots pine that are thriving on the estate. The trees from the nursery will be used to improve species diversity in the woodlands throughout the Estate.





Figure 3 - Planned work for Compartment 1, 2 and 3.

**Compartment 3 - approx. 20 acres (unshaded area above dotted green area)**

Compartment 3 will be retained as grazing land for the foreseeable future. To connect the two long-established mixed woodland blocks that make up Compartment 2 between 2023 and 2030, Compartment 9 and the steeper slopes along the western fence line of Compartment 3 will be fenced off and removed from the Compartment 3 grazing land and progressively planted out with native broadleaf species and native Scots pine.

The two watercourses coming down off the mountain intersecting the compartment present the other main opportunity for additional riparian woodland creation within this compartment. This tree planting will also be carried out between 2023 and 2030. The riparian woodland will create additional woodland linkage, protect water quality and improve the overall habitat connectivity.



The plan for these farmlands, post 2030 is similar to Compartment 1, that is to widen the hedgerows and add new hedgerows on the fields to provide more tree cover with the aim to increase habitat for biodiversity, increase carbon sequestration and also produce opportunities for saleable timber as well as opportunities for fruit or nut harvests.

Similar to Compartment 1 an additional row of native tree species will be added behind or alongside some of the existing hedges or ditches in this part of the estate, allowing for these trees to simply grow up and not be managed via trimming to enhance the shelter and shade reaching further out into the adjoining fields, help act as a buffer against prevailing winds reducing soil erosion, improve sward growth further into the field as well as create valuable wildlife corridors and habitats.

It is intended at the same time as widening and increasing the hedgerows and planting the riparian woodland in this compartment to incorporate parkland trees on these fields as shown in Figure 1.

#### ***Compartment 4 - approx. 25 acres (hatched red area)***

As detailed in the introduction of this report, this whole compartment (and Compartments 5,6 and 7) of the estate were leased to NIFS in 1963 under previous ownership. Almost half of these Compartments 4,5,6 and 7, an area of approx. 85 acres, was planted in stands of non-native conifer species including Japanese larch and North American species Sitka spruce and Lodgepole pine. This commercial tree planting by NIFS around the mid 1960's was carried out with the purpose of providing an economic return once the trees reached a certain age/height that they could be viably harvested and extracted. However, these non-native conifer plantations support minimal levels of biodiversity.

As part of the lease surrender agreement reached with NIFS in 2022, the remaining stand of mature Sitka spruce (approx. 25 acres) that comprise Compartment 4 will be felled and extracted by NIFS in late 2023. With the support of the Woodland Trust NI that 25 acres will then be restocked with a mix of native broadleaf species and native Scots pine in early 2024.

#### ***Compartment 5 - approx. 15 acres (hatched yellow areas)***

In 2015, 35 acres (Compartments 5 and 6) of the conifer plantations (specifically Japanese larch), were infected by the fungal tree disease *Phytophthora ramorum* and had to be clear-felled. This work was carried out under contract by NIFS during 2015/16 in accordance with UK Forestry Standard (UKFS). The clear-felled areas were restocked in 2016 with Sitka spruce (areas 5 yellow hatched and areas 6 black hatched) as a commercial forest.

Compartment 5, as can be clearly seen on Figure 2, was an area of long-established mixed woodland in 1830 and should have been restocked with a mix of broadleaved species instead of Sitka spruce. Since the clear felling of Japanese larch in 2015/2016 some remnant native species have regenerated. During 2023 the regenerating native species will be noted and protected.

Through 2023 and 2024 the 15 acres of immature conifers growing in Compartment 5, Sitka spruce and Japanese larch that have self-seeded, will be manually felled, and extracted. That 15 acres will then be replanted with the help of the Woodland Trust NI with a mix of native broadleaf species and native Scots pine in early 2025.

**Compartment 6 - approx. 15 acres (hatched black areas)**

As noted above the 15 acres of the conifer plantations (specifically Japanese larch) in Compartment 6 were replanted with Sitka spruce in 2016 as a commercial forest. As shown in Figure 2, Compartment 6 was never an area of ancient woodland, in fact in 1830 it is shown to be cleared grazing land. The Sitka spruce planted in this area are thriving and growing rapidly. There is no evidence remnant native species being regenerated.

The plan, for carbon capture and storage reasons, is to retain this portion of commercial forest and harvest it in 10-15 years. Once the Sitka spruce is harvested Compartment 6 will be replanted with a mix of native broadleaf species and native Scots pine in around 2035.

**Compartment 7 - approx. 25 acres (hatched orange areas)**

Compartment 7 (approx. 25 acres) is the area of Sitka spruce and Lodgepole pine above the mature Sitka spruce in Compartment 4. It is an extensive upland area of scattered conifer planting, probably carried out in the early-mid 1990s and at an altitude around 350 – 400 metres above sea level. It appears very exposed, of low growth potential, and the stocking is very irregular with open space areas throughout. Compartment 7 is unlikely to have any significant commercial timber value given its location, exposure and the low growth achieved by the planted trees over the last 30 years.

Compartment 4 will be harvested by NIFS in November 2023. While Compartment 4 is being harvested it is intended that Killeavy Castle Estate will engage the NIFS forestry contractor to remove to waste this area of younger scattered conifers above Compartment 4 (approx. 25 acres). That 25 acres will not be replanted with woods but instead be managed with Compartment 11 as grazed upland species rich grassland, succeeding into heather moorland closer to the summit of Slieve Gullion.



*Upper moorland areas of Killeavy Castle Estate with views over the Ring of Gullion landscape.*



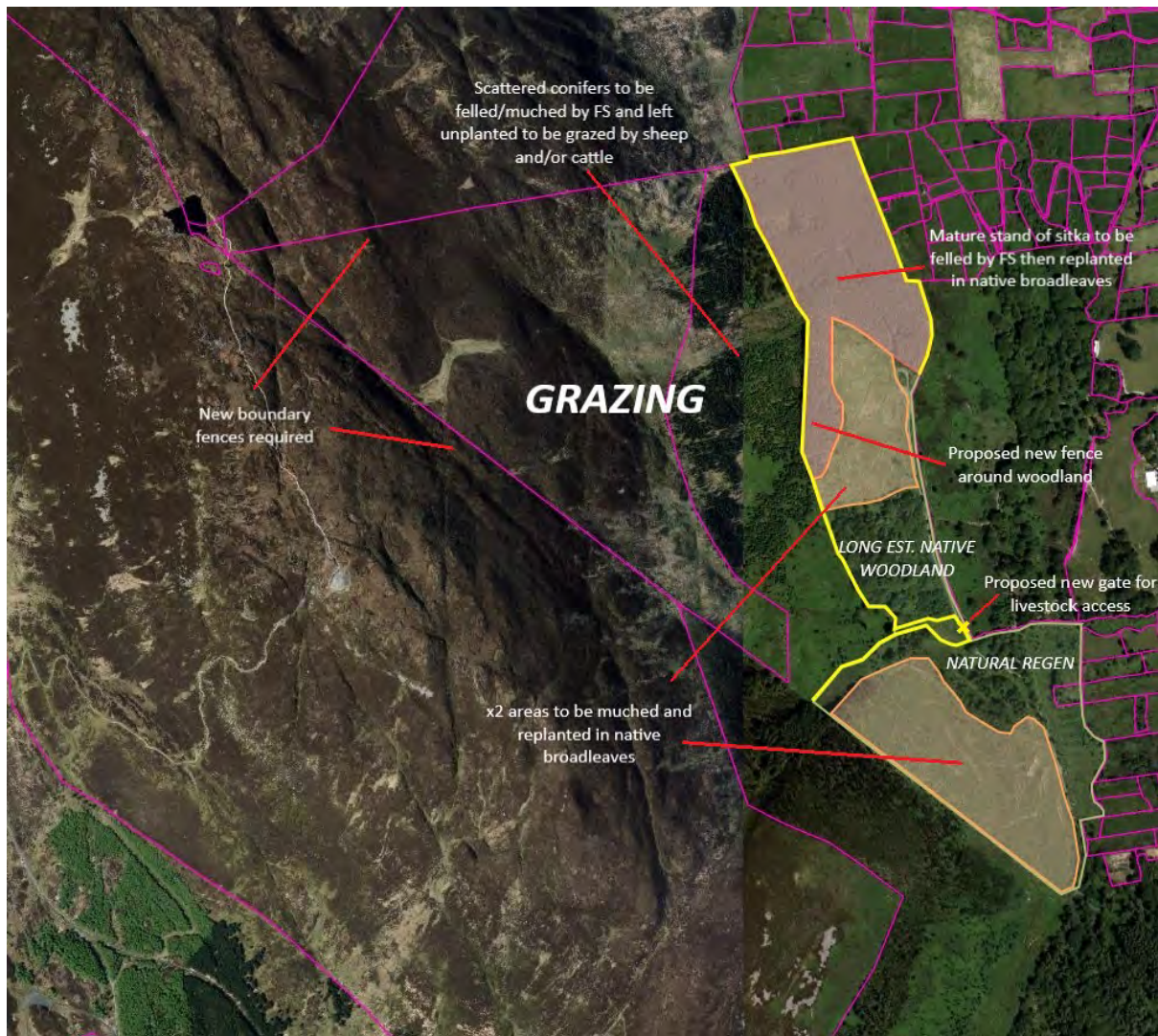


Figure 4 - Planned work for Compartments 4,5,6,7,8 and 11.

### **Compartment 8 - approx. 20 acres (light blue dotted areas)**

Evidence of good natural regeneration of native broadleaved species has been recorded in the four areas that comprise Compartment 8. The larger and most southerly part of Compartment 8 which is either side of the laneway running into Slieve Gullion Forest Park has no stock interference and is responding very well to natural regeneration, with species such as Birch, Oak, Beech, and Hazel noted (see photo below). It is intended to simply leave this area as it is and continue to let the trees establish over the coming years.

There are some non-native conifers scattered amongst the native species. These will be removed in the next 5 years but are not currently posing a threat. Greater attention will be focussed on the removal of invasive plant species such as *Rhododendron Ponticum*, *Buddleia* and *Fuchsia* that must be controlled to prevent further spreading into adjacent established woodlands or onto other adjacent habitat types. These invasive species are highly detrimental to the condition of the local ecology and biodiversity.



The more central part of Compartment 8 is adjacent to a large stand of Scots pine. This area needs monitoring with protection provided to seedlings and stock movements in the area during winter closely managed to allow natural regeneration to take place. It is intended to simply leave this area as it is and let the trees establish over the coming years.

The second most northerly area of Compartment 8 is encircled by the mature woodlands of Compartment 2. The bracken in this area will take a few more years of concerted trampling by livestock to assist natural regeneration. Before grazing this compartment any young trees that have self-seeded will be protected with wooden tree cages similar to those shown on page 6.

The most northerly parts of Compartment 8 are free from any grazing, and it is intended to simply leave this area as it is and continue to let the trees establish over the coming years. There are some non-native weeds scattered amongst the native species. These will be removed in the next 5-10 years but are not currently posing a threat.

What regenerates naturally in Compartment 8 will be logged and supplemented, if necessary, with a mix of native broadleaf species and native Scots pine propagated at a tree nursery that will be established on Wood Road using seeds gathered from the Estate.



*Good natural regeneration evidence in Compartment 8*



*Invasive species rhododendron ponticum.*

### **Compartment 9 - approx. 5 acres (green area)**

The area that comprises Compartment 9 is former grazing land currently within Compartment 3. The area will be heavily grazed through 2024 with the aim to trample the bracken in order to kill it without having to use chemicals before the area is planted with a mix of native broadleaf species and native Scots pine progressively between 2024 and 2030.



The aim of this planting is to connect the two long-established mixed woodland blocks that make up Compartment 2 and create additional woodland linkage and biodiversity corridors. Planting will include widening of the riparian zones as well as steeply sloped areas along adjacent to the Compartment 3 fence lines.

### **Compartment 10 - approx. 3 acres**

This long, narrow strip of land includes four fields situated between the main Estate and Slieve Gullion Forest Park to the south. It is characteristic of an 18<sup>th</sup> century 'ladder' farm. This a slightly outlying area is isolated from the main estate grounds. It is intended that these fields be retained as a traditional ladder farm grazing land. Hedges will be thickened and widened, and this compartment post 2030 after the major restoration works on the upper woodlands is complete.

This field will be connected by a trail to the long-established mixed woodland so that a tree nursery to be established along Wood Road has easy access to the woodlands for seed gathering, propagation and planting.



Figure 5 - Compartment 10 a traditional 'ladder farm' that runs to Wood Road with tree nursery location shown.

### ***Compartment 11 - approx. 100 acres (unshaded area above the orange hatched area)***

Conservation grazing will be undertaken on the upper parcel of land, Compartment 11 (approx. 100 acres). Once the scattered conifer planting on Compartment 7 has been harvested and mulched the total area to be managed by conservation grazing will be approx. 125 acres.

Additional fencing is required around the entire boundary to manage the livestock within the compartment. The existing fencing is either in bad condition or completely non-existent and cannot facilitate any managed grazing in its current condition. As Slieve Gullion Special Area of Conservation (SAC) and Area of Special Scientific Interest (ASSI) land is eligible for the higher level of DAERA's Environmental Farming Scheme (EFS), this will partially fund the fencing needed. The fencing required will be installed starting in 2025.

A new fence line is required on the upper side of the earmarked replanting area as indicated in yellow on Figure 4. No new fence is necessary along the top side of the laneway below the replanting area. Approx. 2,000m of new fencing is required with a rough estimation for this item at £20,000 based on using standard stock proof fence with wooden posts, sheep wire and 3 rows of barbed wire. The intent for this fencing is to invest in the less visually intrusive metal Clipex fencing (see photo below). This is a more expensive option with a rough estimation of £40,000.

It is intended that 'virtual fencing' or GPS collars will also be used to control livestock movement within the large 125 acre fenced area to simplify overall stock management in this compartment.

The existing fence that separates the grassland and upper heath will be removed to allow a more natural heather and grassland interface to develop rather than the unnatural straight line the existing fence has created.



*Clipex fencing in an upland setting similar to what will be used on Compartment 11.*



Compartments 11 and 7 will be managed for conservation grazing with longhorn cattle and cheviot sheep. Details on these breeds and their suitability for conservation grazing are detailed below. Being mainly dry heath habitat on the steeper slopes with minimal amounts of wet heath or blanket bog habitat, both sheep and cattle will graze here under the EFS Higher prescriptions. Stocking calculator tools calculate that:

- sheep could be grazed here from 1 March until 31 October at an average stocking rate of 0.25 LU/ha which would permit a maximum of 48 head of sheep for that full period.
- 1 to 2-year-old cattle could be grazed here from 1 June until 31 August at an average stocking rate of 0.20 LU/ha which would permit a maximum of 34 head of cattle for that full period.



*Landscape view upper lands showing the scattered conifer planting on Compartment 7 and the grassland and heather of Compartment 11 with visible SAC/ASSI boundary where an existing fence is to be removed.*

### **Conservation grazing with Longhorn Cattle**

Longhorn is a traditional breed that thrives in difficult conditions of rough and unimproved land. It has larger feet than continental breeds which prevents trampling and poaching of ground and is an ideal species to range and browse through the steep slopes and heath habitat at Killeavy Castle Estate.

While Longhorn cattle have been used for conservation grazing and heathland/native grassland restoration in English situations, no trials for Ireland exist. Longhorn cattle have also been used for woodland and grassland conservation grazing. Their breed profile, where they will browse on rough grasses and scrub, makes them suitable for grazing back grasslands tending to scrub

up. Their physical presence will trample bracken and help reduce re-growth. This attribute will be a very useful management tool in re-establishing the native grasslands on the Estate.

The following attributes mean they can outwinter at Killeavy in all but the harshest of conditions:

**Hardiness** – a hardy breed, adaptable to a variety of harsh environmental circumstances. *Robust* – thick hide and dense silky coat allows the breed to withstand wet weather. Able to outwinter on dry ground with some supplementary feeding. Too heavy to winter on wet ground. *Thrifty* – maintain condition well on rough pasture. *Agile and adaptable* – reputedly happy on a range of habitats including steep cliffs and wetland fringes. Young animals will learn to wade through water from older individuals.

**Physical Attributes & Husbandry** – a large, docile breed, but with special handling requirements in horned animals.

- *Size* – one of the largest and heaviest of Britain and Ireland's native breeds. Average weight of a cow around 750kgs. *Appearance* – light roan to dark brindle in colour; the tail and stripe along the back are white, with white also on the underside and legs.

- *Confined areas* – care needed to provide plenty of space if kept in yards; a shortage will lead to disputes and possibly injury from horns.

- *Horns* – long and sweeping, usually downwards. If horns start growing into the face, they will need cutting back. Disbudding of the young animal makes it easier to transport and yard and may improve marketability of steers.



*Longhorn Cattle grazing extensively on Killeavy Farm.*

- *Breeding* – long lived and will calve until 13/14 years old or longer. Good mothering ability and abundant good quality milk. One of the quietest breeds of bull. Bulls usually work until around 10 years old, after which they become very heavy, and fertility seems to decrease.

- *Hooves* – as with other breeds, may need occasional foot trimming.

- *Handling* – docile with people and responds well to gentle handling. Easy to halter train.

- *Fencing* – respects electric fencing, though horns can tangle badly.

- *Flies and ticks* – no problems reported.

- *Longevity* – generally long-lived.

- *Background* – rare, but increasing in numbers, the Longhorn was formerly the dominant breed within 18<sup>th</sup> century Britain, as a draught animal and to produce meat and milk.



**Grazing Characteristics** – a breed with good grazing and browsing characteristics.

- *Impact of social behaviour* – ranges widely, grazing methodically. Due to horns, individuals generally graze further apart than some breeds.
- *Grazing preferences* – variable reports as to impact on rank grasses, particularly Purple Moor-grass. Some good grazing results on bracken and bramble infested ground where grazing and trampling can bring about reduction in target invasive. *Thistles and nettles* – will eat if pushed hard. *Rushes and sedges* – grazes rushes if wilted after being cut or if pushed hard; grazes young shoots of Tussock Sedge and Reedmace.
- *Browsing* – occurs year-round. Good control of Alder, Birch, Buckthorn and Hawthorn. Browsing of Creeping Willow has encouraged regrowth in a prostrate form, helping the plants to compete in the same way as Heather. Tramples and has been observed grazing Bramble. Significant role in pushing through and opening up dense mature scrub; particularly in hot weather and to escape flies.
- *Bracken* – may browse young Bracken fronds, good at trampling down rank Bracken litter.

**Interaction with the Public** – suitable for use on public access sites if fears about its appearance can be allayed. *Public perception* – although docile, graceful, and photogenic, can appear intimidating due to large size and horns. *Reaction to dogs* – generally unconcerned. *Reaction to people* – unhandled animals easily spooked, although if used to people, very calm. Not particularly curious. Marketability – a breed with good commercial opportunities, particularly within niche markets.

**Fattening** – a slow maturing breed which finishes off grass at 4 years. Additional feed 6-8 weeks prior to slaughter can allow steers to be finished between 24-30 months. Some livestock markets will not be able to handle the breed if horned. May need to seek specialist niche markets.

### **Conservation grazing with Cheviot Sheep**

Sheep have a reputation for overgrazing, due to their ability to graze very close to the ground and producing 'tight' swards with densely tillered grasses. However, the 'lawn effect' produced by sheep grazing is primarily a factor of stocking density. In free-ranging, extensive situations a considerable variation in structure is likely to develop, with some areas or elements of the sward becoming very closely grazed, and others seldom visited and effectively under grazed). A small body size allows sheep to move readily into scrubby vegetation where they can see a way through. However, short leg length also means that sheep are less suitable for grazing tall vegetation than larger herbivores, as they will tend to flatten much as they pass through often only grazing the lower leaves of tall herbs and grasses. This results in much wastage, as they will not eat soiled herbage. Although their small sharp feet can create bare ground, poaching by sheep tends to be minimal and unless kept in high densities or where being fed supplements are unlikely to cause any damage.



*Cheviot Sheep*

Sheep are highly selective grazers, they preferentially take flowering heads and buds of a range of herbaceous plants, which can be problematic to the long-term management of species-rich swards. However, they do not appear to graze aromatic herbs and atypical plants (e.g., Butterwort or Sundews), and may be responsible for considerable increases in numbers of these plants where they already occur. Sedges are readily grazed by sheep, particularly the finer species. However, sheep grazing can also be useful in reducing the size and dominance of large sedges to the benefit of other species. Both rushes and sedges may become an increasingly important aspect of diet as the summer progresses and form a major proportion of the diet on winter-grazed sites. In hill situations, species such as Soft Rush and Heath Rush become an important dietary component during the springtime. Careful monitoring of condition is necessary under these circumstances.

Cheviots are excellent in controlling the regrowth of scrub and preventing the establishment of new saplings through browsing. The effectiveness of sheep at browsing will often be dependent on the relative palatability of browse and graze; care is necessary to ensure that sensitive herb-rich plant communities are not damaged through using high stock densities to control scrub in the summer. Browse of summer growth, when it is softer, will be more effective than browsing which takes place during winter. Browsing ability may also be more effective if provided with a varied diet or supplements. However, unlike goats, sheep need to graze and cannot satisfy their nutritional requirements on browse alone. Sheep within extensive systems form widely dispersed social groups which establish and maintain home ranges (hefts or 'heats'), which may then be handed down from generation-to-generation. Dunging follows a similar dispersed pattern except on 'loafing' and sleeping areas.

Cheviots have been increasingly utilised on conservation grazing sites, although breed alone does not assure their suitability for conservation grazing. Much depends on the animal's background, especially the terrain and vegetation on which it has been reared. However, this must be balanced against the fact that lambs reared in easier situations will be bigger and fitter than if they had to cope with the hill or other inhospitable environment initially. It may be that if the original genes are present and there are experienced adults to learn from, individuals from different backgrounds may have no problem coping with the tough stuff when they go out to new areas as shearlings (one-two year olds). The critical development factor is probably the reliance on forage rather than concentrates during rearing.



*Western Gorse Ulex gallii found on lower slopes.*



*Heather blooming in the Ring of Gullion.*



## Results of Habitat Survey and Assessment

A series of maps follow, Figures 6,7,8 and 9, which shows habitats on Killeavy Castle Estate using JNCC Phase 1 Habitat Survey codes, which are explained in the legend.

Plants and animals recorded on the site visit by Michael Meharg on 15 November 2017 are pinpointed in green and red respectively. Dominant plants are shown for each habitat block (see table below) – for boundaries, ordinary symbols indicate hedge species and underlined symbols indicate trees.

Feature Points		Dominant plants	
Type	Name	Symbol	Plant
Activity	Gorse cleared	A	Ash
Activity	Riparian strip fenced	B	Beech
Animal	Woodcock	Bk	Bracken
Habitat	Dead wood	Bl	Blackthorn
Historic	Clonlum South Cairn	Bm	Broom
Historic	Derelict chapel	Br	Bramble
Historic	Gate pillars and walls	C	Cypress
Historic	Killeavy Castle	D	Wavy Hair-grass
Historic	Killeavy Churches	G	Common Gorse
Historic	Millrace	H	Hawthorn
Historic	Old driveway	He	Heather
Historic	Walkways	Ho	Holly
Historic	Weeping trees	Hx	Hazel
Historic	Weir	I	Ivy
Landscape	Glade	L	Small-leaved Lime
Plant	Angelica	La	European Larch
Plant	Devils-bit scabious	Lo	Lodgepole Pine
Plant	Herb-robert, Primrose	O	Oak
Plant	Honeysuckle	P	Scots Pine
Plant	Laurel, Bilberry	R	Rowan
Plant	Primrose	Rh	Rhododendron
Plant	Wood-rush	Ru	Rush
		S	Sitka Spruce
		Sp	Bog-moss
		V	Bilberry
		W	Willow/Sallow
		Y	Yew

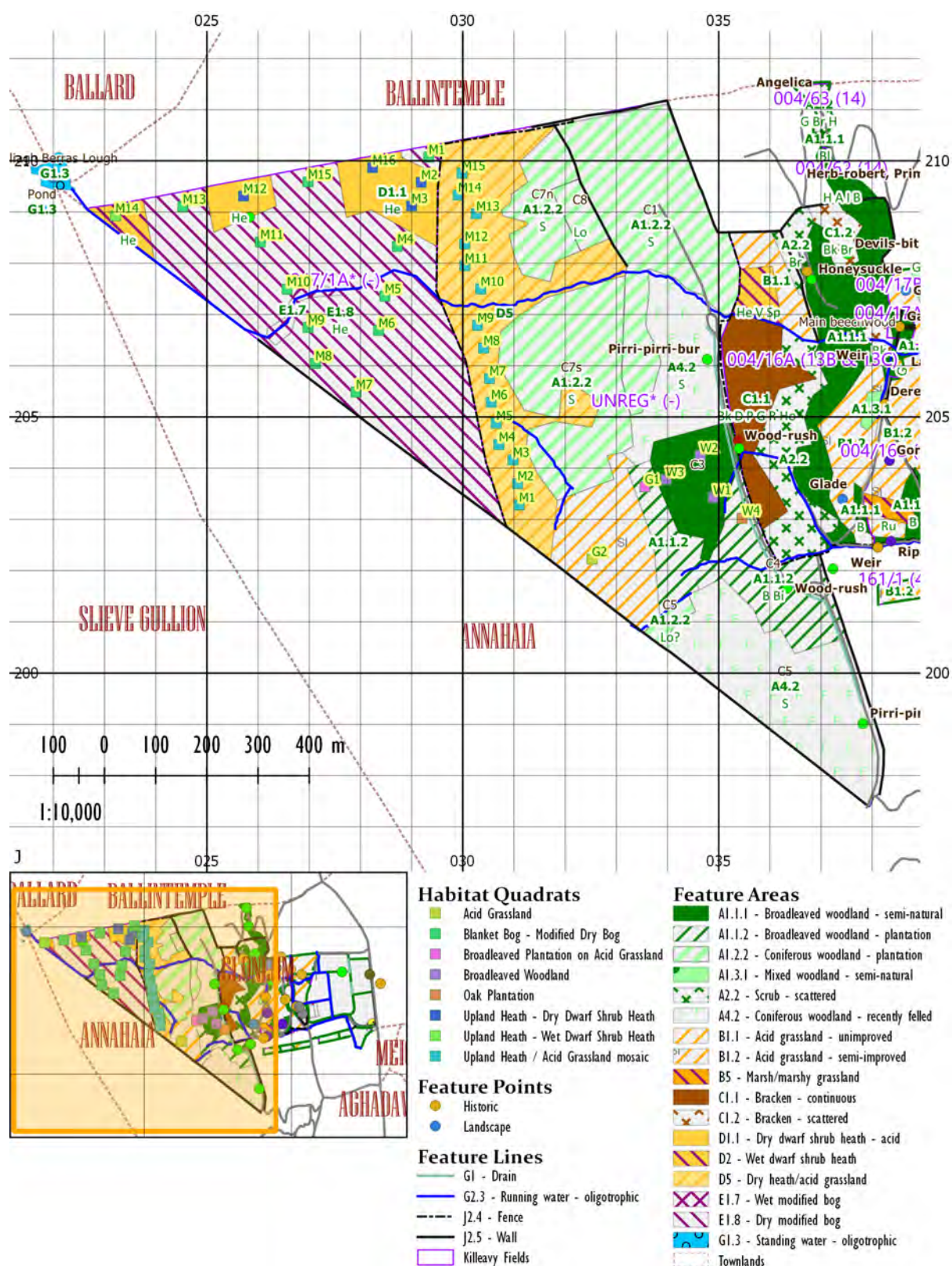


Figure 6 - Habitats on the upper portion of Killeavy Castle Estate.



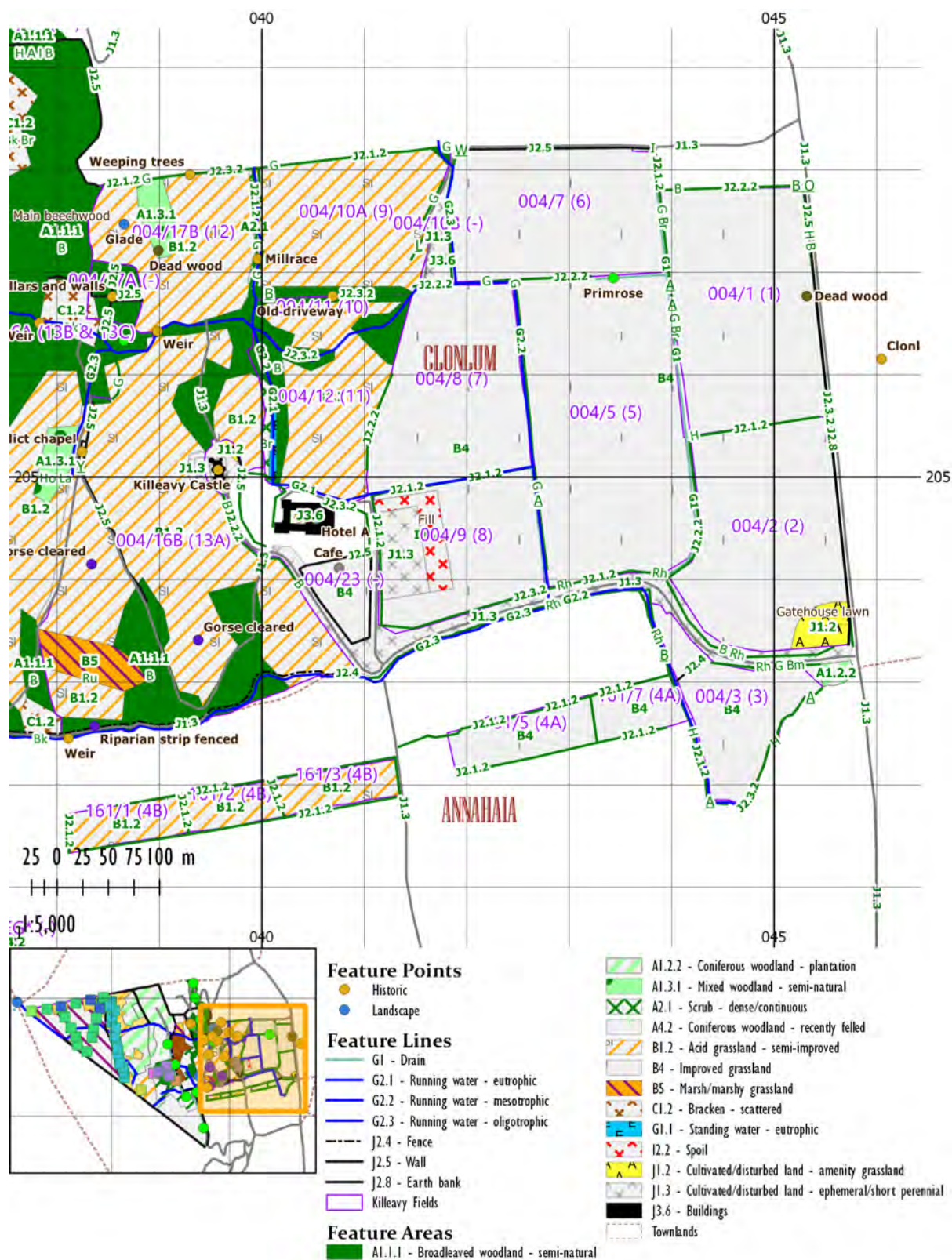


Figure 7 - Habitats on the lower portion of Killeavy Castle Estate.

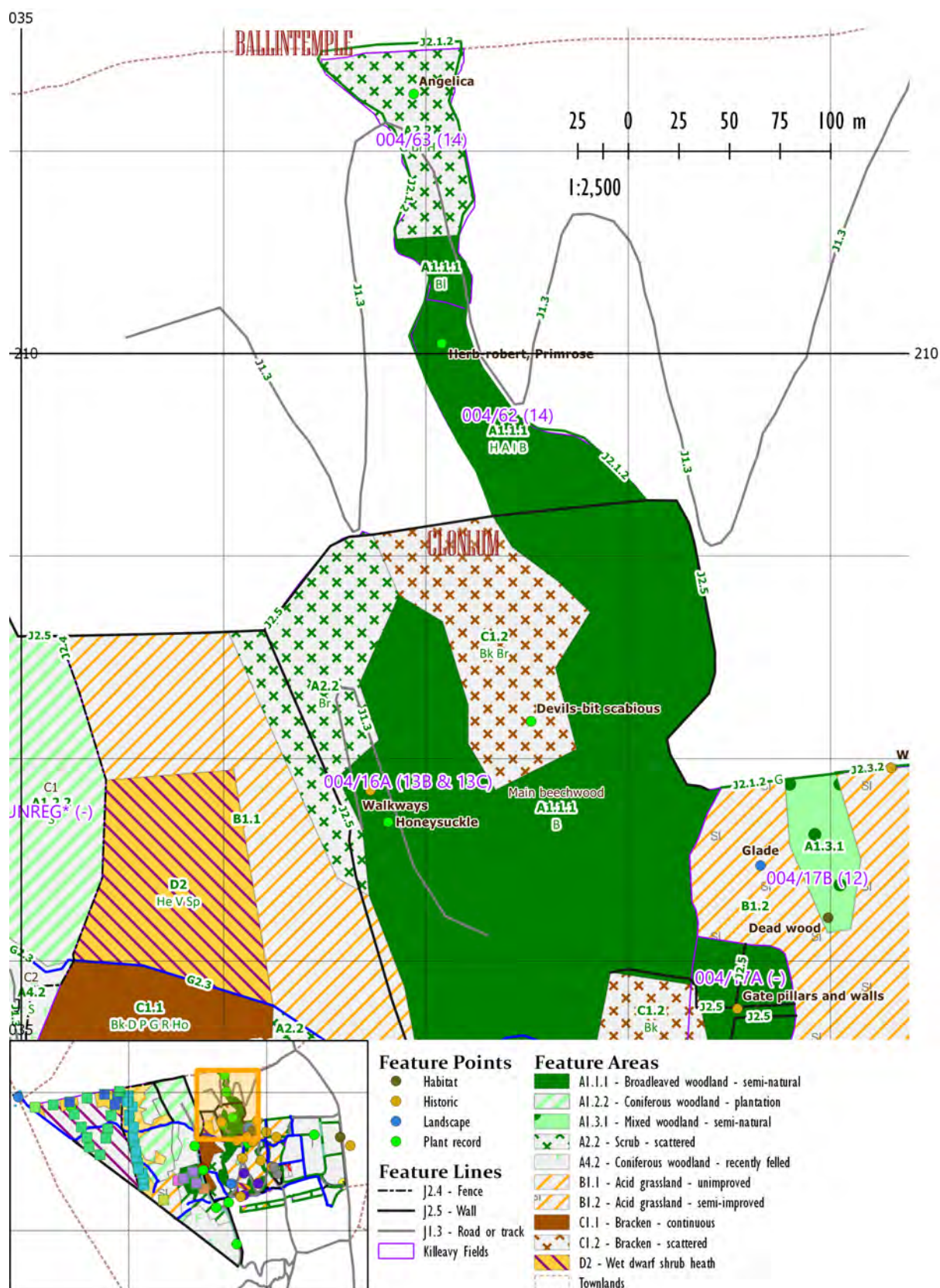


Figure 8 - A more detailed view of habitats on the northern woodlands of Killeavy Castle Estate.



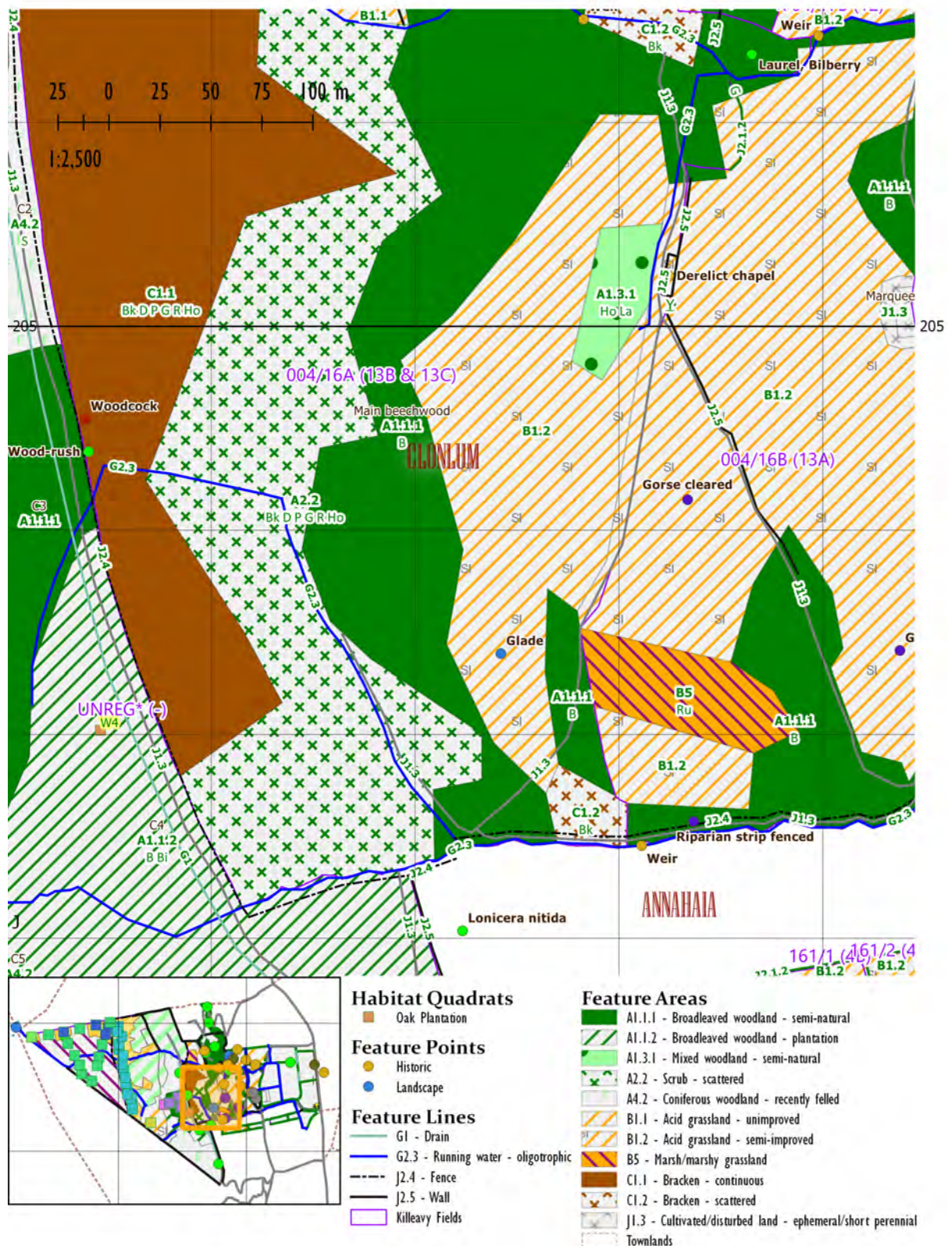


Figure 9 – A more detailed view of the habitats of Killeavy Castle Estate immediately above Killeavy Castle.



## Acknowledgements

Killeavy Castle Estate would like to acknowledge the assistance received from the Woodland Trust Northern Ireland, the Northern Ireland Forest Service and ecologist Michael Meharg in the development of this Landscape Restoration Plan. Killeavy Castle Estate would also like to acknowledge that parts of the following documents have been incorporated or adapted into sections of this plan; Environmental Report (*Dr Michael Meharg & Samuel Millar, 2017*), Woodland Assessment (*Woodland Trust NI, 2018*), Killeavy Castle Estate Woodland Restoration Plan (*Woodland Trust NI, 2023*).



Killeavy Castle Estate  
Mick and Robin Boyle  
August 2023



*John Joe O'Boyle NIFS and Killeavy Castle Estate owners Mick and Robin Boyle at the signing of the 1963 lease surrender in Killeavy Castle dining room on 4 October 2022.*