



# **Boheadlag Woodland Creation Scheme**

Historic Environment Desk-Based Assessment and Walkover Survey

19 August 2022



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# Executive summary

Mott MacDonald were commissioned by Tilhill Forestry to complete an historic environment desk-based assessment (DBA), in advance of a Woodland Creation Scheme at Boheadlag, South of Grandtully to the east of Aberfeldy in Perth and Kinross (centred on NN 92000 51100). Preliminary proposals involve planting a mixture of sitka spruce and mixed broadleaves over an area covering 17.67 hectares (hereafter the 'study area').

The DBA was designed to create an historic environment baseline for the Scheme, identifying heritage assets with potential to be impacted by proposed planting within the study area. This baseline information is used to provide recommendations designed to offset any impacts on the historic environment, where appropriate.

The Perth and Kinross Historic Environment Record identified the presence of two known heritage assets within the study area. As one of these assets was covered by two geographically separate parcels, this was separated, creating three heritage assets recorded by existing databases. These three records were recorded as wider polygons across much of the study area, encompassing a range of features therein. The walkover survey identified these specific features, mapped them in detail and recorded the presence of a further 26 heritage assets. It is clear that the study area contains extensive elements of a pre-improvement farming landscape, likely dated from the late 18<sup>th</sup> century, and never modified by the placement of rectilinear field boundaries and extensive deep ploughing. This landscape includes evidence for both pre-improvement (eg MM03a and MM04) and post-improvement (MM01h) buildings, kilns (MM01e and MM02), field systems, and clearance cairns. The study area is clearly defined, predominantly following what are likely the land boundaries for the Boheadlag farm holding from the 18<sup>th</sup> century. The eastern side of the study area in particular follows the line of the 'head dyke' (MM19), a large earthen bank which marks the edge of the infield/outfield.

The DBA and walkover survey were extensive and recorded those heritage assets visible above ground. Within the wider landscape there is evidence for occupation from prehistory through to the early medieval period, primarily from the presence of the Castle Dow fort scheduled monument nearby, and a number of recorded hut circles and settlements considered broadly contemporary. However, there is no evidence for such occupation within the study area itself, with heritage assets recorded considered of late 18<sup>th</sup> century or later date. The lack of modern deep ploughing in the study area means that evidence of heritage assets should survive had these previously existed. As such, the archaeological potential for previously undiscovered archaeological deposits dated for all periods is considered low, with the exception of Roman remains, where the potential is considered negligible.

The DBA recommends that the planting design is modified to ensure that most visible heritage assets are avoided and left in situ with appropriate buffer zones maintained. For most of the assets, these will be maintained within a wider, contiguous buffer, maintaining relationships between them and preserving links between them. Recommended buffer zones will be suitably delineated prior to planting work commencing. All staff operating on site will also be comprehensively briefed on the likelihood and nature of surviving archaeological deposits through a detailed toolbox talk.

A record of the archaeological assessment has been deposited with the Online Access to the Index of Archaeological Investigations (OASIS) website hosted by the Archaeological Data Service (OASIS ID mottmacd2-437615).

# 1 Introduction

## 1.1 Background

Mott MacDonald were commissioned by Tilhill Forestry to complete an historic environment desk-based assessment (DBA) in advance of a Woodland Creation Scheme (hereafter referred to as the 'Scheme') at Boheadlag, to the south of Grandtully and east of Aberfeldy in Perth and Kinross (centred on NN 92000 51100).

## 1.2 The Development

Tilhill Forestry are overseeing proposals to plant a mixture of sitka spruce and mixed broadleaves across an area covering c.17.67 hectares (ha).

Extensive works on this scale have the potential to physically impact upon buried archaeological remains and upstanding heritage assets through the ground preparation and planting process, the growth of the trees themselves, and the eventual felling and removal. Access roads, quad tracks and other infrastructure will also be created, all of which also have the potential to physically impact upon heritage assets.

## 1.3 Scope

The aim of the DBA is to identify the presence, or otherwise, of potential heritage assets which may be impacted by the Scheme, through compilation of a detailed historic environment baseline. This baseline is used to establish the archaeological potential of the study area and provide appropriate recommendations to offset or avoid impact upon the historic environment, where appropriate.

While a preliminary design for the Scheme has been compiled, it is anticipated that the recommendations provided by the DBA will be used to guide the design and allow detailed consideration of the heritage assets identified.

## 1.4 Site – the Study Area

### 1.4.1 Location

The Scheme is located at Boheadlag, a degraded hill farm overlooking the River Tay to the north. The nearest town is Grandtully to the north, with the larger Aberfeldy a short distance to the west. Located within Perth and Kinross, the area proposed for planting is hereafter referred to as the 'study area' as shown in Appendix B, Figure 1.

### 1.4.2 Landscape and topography

The study area is the term used to define the area assessed for planting (Figure 1). The study area is encompassed on three sides by existing forestry plantations, creating the impression of a pocket of unplanted land surrounded by forestry, partially felled along the southern boundary. The northern boundary is created by an ENE-WSW aligned rectilinear field boundary.

The Allt Mor (watercourse) enters the study area from the south-west, running north before curving around to exit the study area to the north-east. The Allt Mor runs from the Loch of Grandtully, ultimately joining the River Tay to the north (Photo 1.1). This watercourse

dominates much of the topography of the study area, with the ground running towards the Allt Mor, and interrupting the general drop of the contours towards the north.

The study area is semi-improved, with areas of rough pasture and grazing around lower lying areas of unimproved low-lying grass. These lower lying areas are wet underfoot.



**Photo 1.1: Looking SE across the study area. Note the Allt Mor on the right of the image**

## 2 Policy and guidance

### 2.1 General

This assessment was prepared with reference to all relevant statutory and planning frameworks for the historic environment as well as the 'United Kingdom Forestry Standard' (UKFS) and other relevant guidance.

### 2.2 United Kingdom Forestry Standard

The UKFS<sup>1</sup> defines a series of established standards and guidelines to ensure that forests and woodlands in the United Kingdom are properly and sustainably planned and managed. Written and developed by the Forestry Commission (from 2019 re-branded as Scottish Forestry), the UKFS addresses potential historic environment impacts by providing a series of requirements which must be adhered to when planning or maintaining woodland. These are complemented by a set of guidelines which set out how the requirements can be met and provide sources of practical guidance.

The UKFS identifies the requirements and legislation which must legally be covered and adhered to by any forestry or woodland scheme, as outlined in Table 2.1:

**Table 2.1: UKFS Requirements as covered by existing legislation**

UKFS Reference	Level of Requirement	Relevant Legislation	Standard
1	Legal Requirement	The Ancient Monuments and Archaeological Areas Act 1979	Scheduled Monuments must not be damaged and consent must be obtained from the relevant historic environment authority for any works that have the potential to damage the monument.
2	Legal Requirement	Treasure Trove system. All treasure trove - which comprises any portable antiquity and not just those incorporating precious metals - are the property of the Crown at Scots common law.	The historic environment authority must be informed if objects are found that come within the scope of the law covering archaeological finds. Metal detectors must not be used where legally restricted or on a Scheduled Monument site.
3	Legal requirement	Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997	Listed building consent must be obtained from the local authority or relevant historic environment authority to demolish a listed building or structure or any part of it, or to alter it in any way which would affect its character, inside or out.

Source: United Kingdom Forestry Standard

In addition to those legal requirements covered by legislation outlined in Table 2.1, the UKFS also provides a list of required standards as justified by 'good forestry practice'. These include those outlined in Table 2.2:

<sup>1</sup> The Forestry Commission 2017, The UK Forestry Standard: The government's approach to sustainable forestry – [www.forestry.gov.uk/ukfs](http://www.forestry.gov.uk/ukfs)

**Table 2.2: Relevant UKFS requirements as defined by good forestry practice**

UKFS Reference	Level of Requirement	Standard
1	Good forestry practice requirement	Forests should be designed and managed to take account of the historical character and cultural values of the landscape.
2	Good forestry practice requirement	Forests should be designed and managed to take account of policies associated with historic landscapes, battlefield sites, historic parks and gardens, and designed landscapes of historic interest.
3	Good forestry practice requirement	Steps should be taken to ensure that historic features, which may be adversely affected by forestry, are known and evaluated on an individual site basis, taking advice from the local historic environment services.

Source: United Kingdom Forestry Standard

The requirements outlined in Table 2.2 are accompanied by explanatory text which states that in relation to Requirement 3, individual heritage assets will be evaluated, whether scheduled or otherwise and mitigation measures can ‘extend to a reasonable area of their setting.’<sup>2</sup>

The UKFS also provides a series of guidelines for the historic environment on how best to comply with the UKFS Requirements. Guideline number 11 of the UKFS in relation to the historic environment states:

*‘Plan an appropriate area of open space around features of historical significance; for Scheduled Monuments this will normally be a minimum of 20m. Consider the setting as well as the individual features.’<sup>3</sup>*

The client has adhered to the UKFS in preparing the Boheadlag Woodland Creation Scheme, while this DBA and walkover survey incorporates all the relevant UKFS guidelines and is prepared in cognisance of UKFS. The archaeological survey (DBA) is partly a response to UKFS Guideline 5, which states the developer will ‘commission specialist surveys where evidence is significant.’<sup>4</sup>

### 2.3 Guidance

In addition to the UKFS, Scottish Forestry have produced guidance documents to assist Forest Managers where a Woodland Creation Scheme has the potential to impact upon the historic environment. These include;

- Forests & historic environment: information and advice<sup>5</sup>; and
- The provision of archaeological information and advice in Scotland to meet the UKFS – Guidance Note.<sup>6</sup>

The walkover survey and DBA has been commissioned in accordance with the guidance in these documents.

<sup>2</sup> *Ibid.* 84

<sup>3</sup> *Ibid.* 89 – Guideline 11

<sup>4</sup> *Ibid.* 88 – Guideline 5

<sup>5</sup> Forestry Commission Scotland, available at - <https://forestry.gov.scot/publications/forests-and-the-environment/historic-environment/68-forests-and-historic-environment-information-and-advice>

<sup>6</sup> Forestry Commission Scotland, available at - <https://forestry.gov.scot/publications/135-guidance-note-the-provision-of-archaeological-information-and-advice-in-scotland-to-meet-the-ukfs/viewdocument>

The DBA is prepared in accordance with the Chartered Institute for Archaeologists (CIfA) 'Standard and guidance for historic environment desk-based assessment' by a qualified heritage professional adhering to the CIfA 'Code of Conduct – professional ethics in archaeology'.

Cognisance is taken of relevant Historic Environment Scotland (HES) guidance, including:

- Managing Change in the Historic Environment: Setting, 2020.

## 3 Methodology

### 3.1 Aims and objectives

The objective of the DBA is to identify the historic environment baseline for the Scheme. The DBA highlights known heritage assets in the study area, and aims to identify previously undiscovered features should these be present.

The DBA provides evidence for any historic occupation or exploitation of the study area, while forming a balanced judgement as to the likelihood of unrecorded archaeological deposits surviving within. Recommendations are made to mitigate the impact of the Scheme on the historic environment. It is anticipated that these recommendations will be used by the client when designing and planning the Scheme.

### 3.2 Consultation

As advisers to Perth and Kinross Council in all matters pertaining to archaeology, Perth and Kinross Heritage Trust (PKHT) were consulted upon commission of the project.

PKHT highlighted the presence of non-designated heritage assets within the study area, as well as within the wider landscape beyond the study area, stating that these indicated a multi-period landscape. PKHT recommended the completion of an historic environment DBA to provide a more detailed baseline for which mitigation measures could be recommended. PKHT clarified they would expect buffers of 5m for linear features and a minimum of 10m for other features and that consideration should be given to maintaining open spaces near heritage assets (including within enclosures) and a preference for native broadleaves in these areas. PKHT also outlined an expectation for heritage assets to be suitably delineated in advance of planting works.

The Historic Environment Officer at PKHT provided a download from the Perth and Kinross Historic Environment Record (HER) for use during compilation of the baseline.

### 3.3 Desk-based assessment

The DBA is informed by accessing readily available historical and archaeological records. Sources consulted include:

- Details of designated heritage assets as maintained by HES, datasets downloaded June 2022;
- The National Record of the Historic Environment (NRHE) as maintained by HES, datasets downloaded June 2022;
- The Perth and Kinross HER as maintained by PKHT, dataset purchased June 2022;
- Historic mapping available from the National Library of Scotland (NLS);
- Aerial imagery available from online platforms including the National Collection of Aerial Photography (NCAP) as held by HES;
- Lidar<sup>7</sup> data as held by NLS;
- The British Geological Survey (BGS);

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<sup>7</sup> A remote sensing method using lasers to measure high resolution elevation of the earth's surface

- The Historic Land-use Assessment map (HLAMap) as maintained by HES;
- Online sources including the ADS and other web-based resources; and
- Relevant published and unpublished documentary sources.

### 3.4 Walkover Survey

The DBA is complemented by a detailed and comprehensive walkover survey (Photo 3.1) of the study area (Section 4.9). This survey was designed to systematically assess for previously unrecorded heritage assets visible above ground and to fact check where possible any anomalies recorded in the DBA.



**Photo 3.1: View SW over study area, with MM08 visible in the foreground and MM01h in the distance**

In advance of the walkover survey, features identified as anomalies or areas of interest during the DBA were transcribed into GIS. In addition to these, the data from HES, the NRHE<sup>8</sup> and the HER were uploaded to ArcGIS Online, allowing the use of the ArcGIS Collector App on site. This app was then used by the survey team to track progress during the walkover through GPS and to visit the assets identified, while surveying the wider study areas for unrecorded assets. Details of heritage assets recorded during the walkover survey were captured through the ArcGIS Collector app with an accuracy of <5m as polygons or points, and relevant data inputted to create or update the records.

### 3.5 Potential Impacts

Assets identified in the historic environment baseline were compared to the Scheme design, and recommendations made to reflect the presence of these assets in the design and avoid

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<sup>8</sup> Both the NRHE point dataset and the incomplete NRHE polygon dataset were downloaded, but the polygons dataset does not cover the study area.

direct impacts through the provision of suitable buffers where the significance of the assets indicates avoidance is necessary.

In addition, the historic environment baseline was used to determine the archaeological potential of the landscape, allowing mitigation measures to be recommended where necessary.

### **3.6 Assumptions and Limitations**

The HER and the NRHE plot the location of known or suspected archaeological assets, monuments and events. Where nothing of historic interest is shown in a particular area, this can be the result of a lack of research, investigation or visible remains rather than an actual absence of assets. Conversely, heritage assets recorded on the HER or NRHE may be inaccurate, or relate to outdated records or assets which are no longer extant.

Cartographic evidence can provide important, detailed information pertaining to the development of a study area, but the accuracy and time lapse between the production of certain maps can lead to a false assumption that no development has occurred in an area.

Every effort was made to provide comprehensive cover of the study areas during the walkover survey. However, it is accepted that no walkover survey can provide complete coverage of a landscape and it is possible heritage assets visible at the surface may have gone unrecorded. For a survey undertaken in the Summer months, vegetation levels were not high, but the study area is no longer grazed, and in some areas fern cover in particular made the survey difficult.

The methodology employed was robust and the results are considered accurate.

## 4 Baseline

### 4.1 Overview

The historic environment baseline is established using the sources and methodology outlined in Section 3.

Where dates and periods are referred to in the baseline, these are based on those outlined in Table 4.1. It is accepted that these date ranges are subjective, but are supplied to ease discussion based on the Scottish Archaeological Research Framework<sup>9</sup> (ScARF) in conjunction with professional judgement.

**Table 4.1: Indicative archaeological and historical periods**

Prehistoric Period Dates		Historic Period Dates	
Palaeolithic	14,000 to 11,000 BC	(Roman	AD 77 to c.211) <sup>10</sup>
Mesolithic	11,000 to 4,100 BC	Early Medieval	AD 401 to 1100
Neolithic	4,100 to 2,500 BC	Medieval	AD 1101 to 1500
Chalcolithic and Bronze Age	2,500 to 800 BC	Post-medieval	AD 1501 to 1800
Iron Age	800 BC to AD 400	Early Modern	AD 1801 - 1900
		Modern	AD 1901 to present

Source: Mott MacDonald after ScARF

A full gazetteer of all heritage assets within the study areas is located in Appendix A, with figures showing their locations included as Appendix B. Each heritage asset is attributed a corresponding unique reference number prefixed by an abbreviation of Mott MacDonald (MM). Where grouped assets were recorded by existing databases and assigned one MM number (eg the complex of buildings and field systems at Boheadlag (MM01)), individual aspects recorded during the DBA are assigned that MM number followed by a letter (eg MM01a, MM01b etc.) to show they belong within the wider record.

### 4.2 Heritage Assets

#### 4.2.1 Designated heritage assets

There are no heritage assets protected by statutory legislation<sup>11</sup> within the study area.

#### 4.2.2 Non-designated heritage assets

There are two non-designated heritage assets recorded by the Perth and Kinross HER within the study area, one of which is split across two geographically separate parcels. Given this

<sup>9</sup> <https://www.scarf.scot> - 07/06/22

<sup>10</sup> The period of Roman influence in Scotland runs concurrently with the Iron Age. While Roman involvement in Southern Scotland was extensive, this was primarily a military occupation which ebbed and flowed, leaving no evidence for independent domestic occupation.

<sup>11</sup> UNESCO World Heritage Sites, Scheduled Monuments, Listed Buildings, Conservation Areas, Gardens and Designed Landscapes included on the HES inventory, or Historic Battlefields.

geographical separation, this HER asset has been divided into two separate assets for inclusion in the Gazetteer:

- MM01: Boheadlag farmstead (HER: MPK9026);
- MM02: Boheadlag lime kiln (HER: MPK9026); and
- MM03: Boheadlag building, field boundary and rig and furrow (HER: MPK16656)

Boheadlag farmstead (MM01) and Boheadlag building, field boundary and rig and furrow (MM03) are also recorded as points by the NRHE, which makes no reference to lime kiln MM02.

### 4.3 Toponymy

The name Boheadlag is an English rendering of the Gaelic form 'Both Fheadlaig' and, along with the 'Allt Mor' (big burn) indicates a historic gaelic speaking presence in the study area. Boheadlag is therefore Scots Gaelic for 'blow-vale-hut', so named for its exposed location.<sup>12</sup>

### 4.4 Previous archaeological assessment

There is no record of archaeological investigations within the study area.

### 4.5 Geology, soils and ground conditions

The British Geological Survey was consulted to record the underlying bedrock and superficial geology of the study area.<sup>13</sup> The National Soil Map of Scotland was consulted to better understand the nature of the topsoil and overlying superficial geology.<sup>14</sup>

The bedrock geology of the study area is formed by the Southern Highland Group, Psammite and Semipelite, a metamorphic bedrock formed approximately 499 to 1000 million years ago in the Cambrian period.

The overlying superficial geology predominantly comprises till, Devensian – Diamicton. However, there are also deposits of alluvium along the route of the Allt Mor, both in the south-west corner of the study area, and in the centre. Both these deposit formed up to two million years ago in the Quaternary period in an environment dominated by Ice Age conditions.

The National Soil Map of Scotland records the study area as containing humus-iron podzols.

The recorded geological makeup of the study area provides little information for the survival or potential presence of archaeological deposits. For the DBA, the key deposits to identify for an indication of archaeological potential are peat and alluvium. Alluvium is generally recorded along watercourses and has potential to cover and preserve deep archaeological deposits. The presence of podzols indicates the soil is generally infertile and limiting for productive use, perhaps indicating limited agrarian farming.

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<sup>12</sup> <https://www.ainmean-aite.scot/placename/boheadlag/> - 08/06/22

<sup>13</sup> [www.bgs.ac.uk](http://www.bgs.ac.uk) - 07/06/22

<sup>14</sup> [http://map.environment.gov.scot/Soil\\_maps/?layer=1#](http://map.environment.gov.scot/Soil_maps/?layer=1#) - 07/06/22

## 4.6 Map regression

### 4.6.1 General

All relevant cartographic resources held by the NLS were consulted to identify the recorded development of the site as well as any additional features that may previously have gone unrecorded within the limits of the proposed development. A summary of consulted maps is listed in the Bibliography, Section 8.

### 4.6.2 Pre-Ordnance Survey maps

A number of early maps that cover the Scheme were consulted for any indication of historical occupation within the study area. Maps which pre-date the Ordnance Survey (OS) were assessed for relevant information relating to occupation of the study area. Due to the generally imprecise nature and lack of accuracy often apparent in these early maps, many of those which pre-date the first OS editions are of limited use in showing any detailed occupation of the study area and only those that are relevant are discussed below.

#### 4.6.2.1 William Roy c.1747-55

William Roy's Military Survey of Scotland was conducted from 1747-55 and is the first map of the study area which can be considered to have any real degree of accuracy. The map was described by Roy himself as rather 'a magnificent military sketch than a very accurate map of the country',<sup>15</sup> but the scale and detail of the map is such that it allows the study area to be pinpointed.

The Loch of Grandtully is clearly visible, as is a settlement or fermtoun at Balnaguard, to the north-east of the study area. The study area itself is shown as hillside devoid of any occupation, planting or field systems. This landscape is fairly extensive and clearly indicates that the study area was unoccupied and undeveloped c.1750.

#### 4.6.2.2 Later maps

James Stobie's 'Counties of Perth and Clackmannan' from 1783 shows the study area as undeveloped, a view supported by Thomson and Johnson's 1827 map of 'Perthshire with Clackmannan'.

### 4.6.3 Ordnance Survey maps

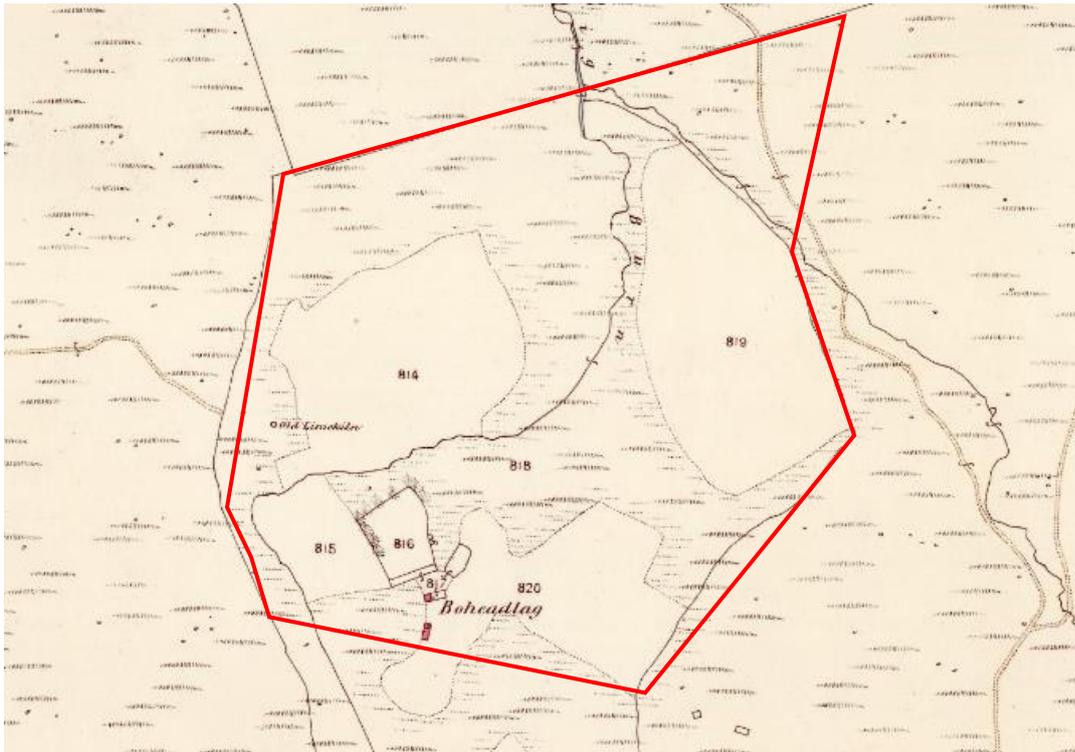
#### 4.6.3.1 1<sup>st</sup> edition maps series

The OS began surveying the study area in 1863, publishing the first detailed mapping of the landscape at a scale of 25 inches to one mile in 1867.

The 25 inch to 1 mile Perth and Clackmannanshire L.1 (Dull) map (Map 4.1), clearly shows the study area, defined along its northern side by the rectilinear field wall which forms the boundary today, while the eastern and western edges of the study area, today defined by mature conifers, are broadly defined by curvilinear land boundaries (including MM19). These land boundaries continue to the south, located now beneath the conifer plantation.

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<sup>15</sup> Fleet et al 2011 'Scotland; Mapping the Nation', 89



**Map 4.1: Extract from the 25 inch to 1 mile Perth and Clackmannanshire L.1 (Dull) map with indicative study area**

The farm of Boheadlag is clearly visible, with two roofed buildings (MM01a and MM01d) apparent, as well as walled enclosures MM01i and MM01j. There is also an 'old limekiln' (MM02) located to the north-east. While the farm sits within a wider curvilinear walled area, within this, there are irregular field systems marked by dotted lines, likely indicating earthen banks as opposed to the drystone walls surrounding the study area, or the enclosures close to the farm MM01i and MM01j. Each of these four curvilinear areas (including MM06, MM09, MM24 and MM25), or fields, is assigned a reference number, which in the Ordnance Survey Book of Reference describes these as 'arable'.<sup>16</sup> The remainder of the study area is recorded as 'rough pasture and stream', with the area immediately around the farm described as 'house, garden, ruin and waste'.<sup>17</sup>

In contrast to the study area, the land immediately north is a farm called Upper Eastbrae of Grandtully, and the fields and land boundaries around this farm are clearly organised and defined by rectilinear walls.

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<sup>16</sup> Ordnance Survey Books of Reference 1863, Parish of Dull, 11. Available at <https://digital.nls.uk/ordnance-survey-books-of-reference-1855-1882/archive/99258327#?c=0&m=0&s=0&cv=141&xywh=2291%2C1634%2C3531%2C2617>

<sup>17</sup> *Ibid.*

#### 4.6.3.2 2<sup>nd</sup> edition map series

The 2<sup>nd</sup> edition map series was surveyed at 25 inches to 1 mile in 1899 and published in 1900. This map shows the same landscape as the 1<sup>st</sup> edition, with few noticeable changes. The main change is the construction of the farm building that remains roofed on the site today (MM01h). Both buildings MM01a and MM01d remain roofed in 1900.

#### 4.6.3.3 Later maps

The 1948 27/95 A 1:25,000 shows a series of three buildings, likely to be MM01a, MM01d and MM01h, with the enclosure MM01j to the north. Surrounding field systems also appear visible as faint dotted lines. By the production of the 1959 NN95 – C 1:25,000, only MM01a and MM01h with associated enclosure MM01j are shown.

The modern OS available online shows the unroofed Boheadlag complex of buildings, including MM01a, MM01d, MM01h, with enclosures MM01i, MM01j and MM01k. A small square is also marked for lime kiln MM02 and a 'foot bridge' (MM12) marked over the Allt Mor.

#### 4.6.4 Conclusions

William Roy's military survey of Scotland clearly shows the study area as unoccupied c.1750, a view supported by first Stobie in 1783, then Thomson and Johnson in 1827. However, the 1<sup>st</sup> edition of 1867 shows the study area as clearly defined, containing irregular pre-improvement field systems as well as roofed buildings at Boheadlag. This indicates occupation developing perhaps in the late 18<sup>th</sup> century, but certainly in the second half of the 19<sup>th</sup> century

### 4.7 Remote sensing

Remote sensing covers analysis of lidar data and aerial imagery in order to identify previously unrecorded heritage assets. There is no lidar coverage available for the study area. The assessment of aerial images forms a pragmatic level of analysis suitable to be incorporated within a DBA, but does not comprise a detailed remote sensing survey.

Any clear anomalies and features are identified and discussed below, but this is not considered exhaustive and professional judgement has been used as to whether to include features within the baseline.

The earliest aerial images of the study area were taken in 1946, yet these images are very under-exposed, showing a very dark landscape from which it is difficult to assess details. The complex of buildings at Boheadlag are visible, with the enclosures MM01i and MM01j adjacent. The limits of the study area are clearly defined as dark against the lighter, presumably farmed study area around Boheadlag, but there do not appear to be significant trees present. Possible buildings and cultivation are visible in the landscape south of the study area, within the area of now felled trees.

A series of oblique aerial images available in the NRHE from 2010 and 2021<sup>18</sup> show the study area with a covering of snow. These images provide an excellent level of detail which shows the curvilinear field systems (including MM03b, MM03c, MM03g and MM05), but also areas of rig and furrow contained therein. A large area of ploughing (MM07) visible in the centre of the site is defined by a large curvilinear field boundary (MM06), but the nature of the clear, tightly defined striations indicates that this may be early modern or modern in date. The other areas of

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<sup>18</sup> <https://canmore.org.uk/site/279768/boheadlag> - 03/08/22

rig and furrow visible (MM03e and MM08) appear different, much wider and less regular in alignment. These are interpreted as older, potentially medieval or post-medieval. It is notable that buildings are visible within the area immediately north of the study area, likely associated with the field systems in the study area itself.

Images available from online platforms show the study area in good detail, emphasising the network of small, curvilinear field boundaries in the north-western part of the study area.

## 4.8 Historic landscape usage

### 4.8.1 HLAmap

Analysis of historic land-use was undertaken through HLAmap maintained by HES.<sup>19</sup> HLAmap provides additional information as to earlier use of the study area or exploitation of the landscape. The results of this analysis can be viewed in Table 4.2.

**Table 4.2: Summary of historic landscape usage as recorded by HLAmap**

Period	Comments
Prehistoric	There is no prehistoric landscape usage recorded within the study area.
Roman	There is no Roman landscape usage recorded within the study area.
Medieval	The bulk of the study area is recorded as the remains of settlements and field systems that predate agricultural improvements of the 18 <sup>th</sup> and 19 <sup>th</sup> centuries and of potential medieval date. Ruinous buildings, kilns, curvilinear boundaries and rig cultivation are all common.
Post Medieval	There is no post medieval landscape usage recorded within the study area.
Early Modern – Modern	The study area is recorded as rough grazing, lower lying land with no evidence for agricultural improvement.

Source: HLAmap

## 4.9 Archaeological and Historical Development

The historic baseline in the following narrative is based on indicative archaeological and historical periods and compiled using information primarily collated from the HER, NRHE and the DBA. These historical periods are outlined in Table 4.1.

Only the periods for which there is evidence for human occupation, involvement in the study area or in the immediate landscape are discussed below. Where assets are recorded within the study area, they are recognised by their unique identifier (MM number) as defined in the Gazetteer. Where assets from the wider landscape outwith the study area are discussed, these are referenced by their designation (SM number), their HER number (prefixed by MPK) or their NRHE number (prefixed by ID) should there not be an equivalent HER number.

### 4.9.1 Prehistoric

There is no evidence of prehistoric occupation within the study area.

Within the wider landscape there is evidence of prehistoric occupation. A standing stone and three barrows (SM1576) have been recorded at Haugh of Grandtully to the north. These assets are characteristic of late Neolithic or Bronze Age activity. A non-designated round cairn

<sup>19</sup> [www.hlamap.org.uk](http://www.hlamap.org.uk) – 07/06/22

(MPK1695) around 400m east of the study area is recorded by the HER as of Neolithic or Bronze Age date.

The primary evidence for later prehistoric occupation within the wider landscape is the Castle Dow fort (SM4432) located just over 500m east of the study area. This defensive structure likely had origins in the Iron Age and is situated at the mouth of a side valley of the Tay 'controlling access to the heavily settled upper parts of the valley'.<sup>20</sup> A series of hut circles and settlements (SM5910, SM5320 and SM5321) are located to the south of Castle Dow, with additional examples (SM5859) further south. A series of non-designated hut circles and associated field systems (MPK5319) are recorded c.190m north-east of the study area, further demonstrating the previous intensive occupation of the wider landscape in prehistory. A second fort (SM9533) is recorded as a cropmark at Haugh of Grandtully on the banks of the River Tay to the north.

## 4.9.2 Historic

### 4.9.2.1 Roman

There is no evidence of Roman occupation of the study area or within the wider landscape. The record for the Castle Dow fort (SM4432) notes the presence of the Roman legionary fortress (SM1606) at Inchtuthill around 22km to the south-east and states the likelihood of a link between the two. It is likely that Castle Dow fort (SM4432) was occupied during the Roman period, as well as many of the hut circles and settlements around it recorded in Section 4.9.1.

The Statistical Account of 1793 (OSA) records that a coin of Trajan was recovered in the Parish of Logierait.<sup>21</sup>

### 4.9.2.2 Early medieval

There is no evidence for early medieval occupation within the study area, with occupation for the wider landscape limited to the Castle Dow fort (SM4432), which is recorded by the designation as 'likely to have been occupied during the early medieval period.'<sup>22</sup>

### 4.9.2.3 Medieval

There is no clear evidence for medieval occupation within the study area or the wider landscape, but it is possible that the field systems and structures (MM01 and MM03) recorded in the study area may have origins in the medieval period.

### 4.9.2.4 Post-medieval

The post-medieval period in Scotland saw a series of changes to rural and agricultural life. The landowning elites both introduced and enforced these agricultural 'improvements' aimed at increasing production, modernising and stream-lining processes with the aim of achieving increased rents and yields. This was the period known as the 'Scottish Enlightenment', where agriculture was also caught in the modernisation of technology and ideas. Farming practices previously had involved small, subsistence family units known as 'fermtouns' cultivating small plots of land. These fields were often unenclosed and irregular in shape, designed to fit the

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<sup>20</sup> <http://portal.historicenvironment.scot/designation/SM4432>

<sup>21</sup> Bisset, T 1793 'Parish of Logierait, County of Perth' in Statistical Account of Scotland (OSA) Volume V, 1793, 85

<sup>22</sup> *Ibid.*

nature of the landform within which they had evolved. Agricultural improvements included the enclosing of fields, the draining and fertilising of land, introduction of new crops and rotations as well as the abandonment of the traditional infield-outfield system, where crops were farmed around the dwelling and beast kept beyond the head dyke and further away. Fermtouns and clusters of simple dwellings were removed and replaced by single, larger farms, more substantial buildings with squared corners and chimneys in the gable.

The research undertaken into the study area in the DBA indicates a farming landscape which retains large elements of pre-improvement farming practices, field systems and evidence of agriculture. Within the study area the HER records MM01 and MM03 as elements of this pre-improvement landscape including field systems, plough rig and the presence of a head dyke. Detail for the buildings recorded is not sufficient to record their likely age. Within the wider landscape, an HER record to the north at Coire-n-eassan (MPK9025) records further remains of buildings, field systems and a head dyke.

The OSA states that the agriculture undertaken across the Parish of Logierait is varied, covering the planting of oats, barley, potatoes, flax to name a few.<sup>23</sup> However, it is notable that the parish of Logierait is large and very fragmented and no specific mention is made of the study area. The account states 'the fields, whether in crop or in pasture, are in general open', clearly showing that improvement farming practices have yet to reach the area and that formal, rectilinear fields bounded by walls and fences have not yet been established. The OSA goes on to state that agricultural improvements including enclosure of fields, and new methods of ploughing would be beneficial to the parish.<sup>24</sup>

#### 4.9.2.5 Early modern

By the production of the Statistical Account of 1845 (NSA) it is clear that agricultural improvements have begun within the parish. Land is being reclaimed and drained 'within almost every district of the parish'.<sup>25</sup> However, the NSA goes on to state that improvement is being hindered by the prevalence of smallholdings, where the land is let in small areas which are not adopting improved methods.<sup>26</sup> This description would cover the defined study area around Boheadlag, shown by the defined field boundary or head dyke (MM19) on the 1<sup>st</sup> edition.

However, it is notable, that from the DBA there is little evidence of these improvements extending to the study area, where elements of a pre-improvement farming landscape appears to remain.

#### 4.9.2.6 Modern

The woodland which surrounds Boheadlag was planted in the 20<sup>th</sup> century yet left the defined parcel of land free of trees, perhaps indicating different ownership and continued use as farmland. The farmhouse MM01h remains roofed and would have been used in the modern period.

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<sup>23</sup> *Ibid.* 77

<sup>24</sup> *Ibid.* 87

<sup>25</sup> Cameron, S 1842 'Parish of Logierait, County of Perth' in Statistical Account of Scotland (NSA) Volume X 1845, 695

<sup>26</sup> *Ibid.* 696

#### 4.10 Walkover survey

The walkover survey was designed to investigate the assets identified during the documentary and cartographic analysis, while systematically assessing the study area for previously unrecorded heritage assets.

The walkover survey was completed on 21<sup>st</sup> June 2022. Weather conditions were bright and sunny and given the time of year, vegetation levels were moderately high but were not felt to effect the survey, although in some areas fern cover was high and made surveying difficult.

The HER had revealed the presence of three individual heritage assets recorded across two HER records, with further potential heritage assets recorded during the DBA. The locations of all of these were visited during the walkover. Anomalies or potential assets noted in the remote sensing were also targeted. The walkover recorded or confirmed the presence of a further 25 heritage assets, giving a record of 28 heritage assets recorded in the Gazetteer, although a number of additional features and structures were also included within those initially recorded by the HER.

Selected individual heritage assets are discussed in Section 5 (below).

## 5 Discussion

### 5.1 Overview

Notable heritage assets identified during the DBA are discussed below, focussing on both their physical remains, condition and setting where appropriate. This section is not exhaustive. Details of all sites and records made during the walkover are recorded in the Gazetteer (Appendix A).

### 5.2 Selected heritage assets

#### 5.2.1 MM01 Boheadlag farmstead, head dyke

The HER and NRHE record for MM01 Boheadlag farmstead covered three buildings, two enclosures and a head dyke, with an irregular HER polygon encompassing these assets. During the walkover, four buildings were recorded (MM01a, the conjoined MM01b and MM01c, MM01d and the roofed MM01h - Photo 5.1).



**Photo 5.1: View north-east across MM01, with the footings of MM01b in the foreground, ruinous MM01d in the middle distance, and roofed MM01h behind enclosure MM01i in the background**

The cluster of buildings and features within the area of MM01 conforms to a pre-improvement farmstead, although building MM01h is later, with dressed stones, slate roof and chimneys in both gables. Enclosures MM01i and MM01j are also likely contemporary with MM01h. A previously unrecorded feature located directly east of building MM01h, is possibly a lime kiln, recorded as a low sub-circular structure (MM01e).

There are fragmentary field systems to the northeast (MM13 and MM14), east (MM24 and MM25) and west (MM15) of MM01.

The value of this asset is considered low, or of local significance.

### 5.2.2 MM02 Boheadlag Lime Kiln

The lime kiln MM02 was recorded by the HER as part of the same asset as MM01, but given the geographical separation, was considered as a separate asset by the DBA. This asset is a large drystone kiln built from coursed rubble into an east facing slope above the Allt Mor, with an opening on the east side (Photo 5.2).



**Photo 5.2: View north towards lime kiln MM02**

The value of this asset is considered low, or of local significance.

### 5.2.3 MM03 Boheadlag, building, field boundary and rig and furrow

The HER record for MM03 Boheadlag is a large rectilinear polygon which covers a series of field systems (Photo 5.3) but also a clearly defined structure set within an irregular field boundary enclosing an area of wide spread rig and furrow (Photo 5.4).

The building MM03a is a large north-east to south-west aligned building with clear overgrown stone foundations and dipped interior. It appears to have rounded terminals and measures 4m by 9.5m. A small annex (MM03f) abuts the east end.

The earth banks that comprise the field systems are varied in survival and visibility, but average a width of 1m spread, and a height of c.0.2-0.4m with no stones readily apparent.



**Photo 5.3: View north-east across building MM03a**



**Photo 5.4: View of field system MM03g looking south**

The field systems covered by MM03 clearly continue to the south-west, falling outwith the HER record and recorded as MM05 and MM09.

The value of this asset is considered low, or of local significance.

### 5.2.4 MM04 Building

Along the western boundary of the study area, within an area of field systems MM05, which run on from MM03g, a north-east to south-west aligned building (MM04) was recorded, visible as low earth footings with dipped interior.



**Photo 5.5: View west across building MM04**

The value of this asset is considered low, or of local significance.

### 5.3 Conclusion

All heritage assets recorded by the DBA were assigned a low value, equating with a local significance. However, considered together, the heritage assets which make up the western side of the study area, notably MM01, MM02, MM03, MM04 and MM05, are one conjoined archaeological landscape and a relatively rare survival of an agricultural landscape which predates the 18<sup>th</sup> and 19<sup>th</sup> century agricultural improvements. As such, taken as a group these could be considered moderate value, equating with regional significance.

## 6 Archaeological and historical potential

### 6.1 Overview

Collation of the historic environment baseline allows the archaeological and historical potential to be summarised, using the timescales outlined in Table 4.1, the indicative archaeological and historical periods.

The DBA has shown that the study area has not undergone extensive agricultural improvement and not suffered extensively from modern deep ploughing which would have been disruptive to any buried archaeological deposits should these have existed. The walkover survey was comprehensive and recorded archaeological features visible above ground, although it is possible some may have gone unrecorded due to routes of the survey or vegetation levels.

### 6.2 Prehistoric

There is no evidence for prehistoric occupation within the study area. The wider landscape contains extensive evidence for prehistoric rural occupation in the form of hut circles, while the Castle Dow fort (SM4432) is located a short distance to the east. The lack of agricultural improvement and deep ploughing may mean that prehistoric deposits and features may survive had these previously existed, while it is also feasible that curvilinear earthen banks may have had origins in prehistory.

However, it is clear the landscape was exploited for farming from at least the early modern period and it seems likely most of the agricultural remains are later. As such, the archaeological potential for prehistoric deposits within the study area is considered **low**.

### 6.3 Historic

#### 6.3.1 Roman

There is no evidence for Roman occupation within the study area or the wider landscape.

The archaeological potential for deposits dated to the Roman period within the study area is therefore considered **negligible**.

#### 6.3.2 Early medieval - medieval

There is no evidence for early medieval or medieval occupation within the study area, while within the wider landscape, this evidence for occupation is not strong. Castle Dow fort (SM4432) was occupied into the early medieval period and it is possible that the hut circles and settlements broadly considered as prehistoric in date (see Section 6.2) may have continued in use, or have been dated to the early medieval period. It is possible that the field systems within the study area may have origins in the medieval period, but these are not depicted on Roy's survey of c.1750, and it seems likely they are later in date.

Within the study area, there is no compelling evidence for early medieval or medieval occupation and the archaeological potential for early medieval and medieval deposits is considered **low**.

### 6.3.3 Post-medieval – early modern

The study area contains a farming landscape which retains a clear pre-improvement character of irregular field systems and structures, partially surrounded by a head dyke. This indicates both occupation and exploitation of the land in the post-medieval period, perhaps post-1750 as no occupation is visible on William Roy's map. This farming landscape was certainly exploited into the early modern period, as shown by the map regression.

The upstanding heritage assets were recorded by the walkover and given the lack of deep ploughing following the post-medieval period, it is considered unlikely that other substantial heritage assets will survive visible above ground. Within the study area away from the focal points of occupation (MM01 and MM03) the archaeological potential for deposits dating to the post medieval and early modern periods is considered **low**.

### 6.3.4 Modern

The study area remained farmed into the modern period, but clearly this did not involve extensive re-organisation of the land or enclosure within rectilinear field boundaries, but adapted the existing farming landscape and field systems.

The archaeological potential for unrecorded deposits dated to the modern period is considered **low**.

## 7 Conclusions and recommendations

### 7.1 General

The DBA and Walkover Survey accurately defined the locations, extent and number of individual heritage assets visible above ground within the Scheme. Previously unrecorded heritage assets were recorded during the DBA and walkover, contributing to an accurate and comprehensive historic environment baseline.

The accuracy of the recording allows the heritage assets to be plotted through GIS, with these shapefiles provided to both the client and stakeholders as a dataset to accompany this report. This dataset contains descriptions of heritage assets, as well as recommended buffers, where no planting should take place.

Within the study area, the assets identified are of negligible or low significance and related to agrarian occupation or exploitation of the landscape.

This DBA will be submitted to the Online Access to the Index of Archaeological Investigations (OASIS) website hosted by the Archaeological Data Service (ADS) for approval by PKHT.

### 7.2 Recommended mitigation

#### 7.2.1 Buffer zones and the planting design

##### 7.2.1.1 General

The preferred mitigation option for any heritage asset affected by the proposed planting is for preservation *in situ*. For the Boheadlag Woodland Creation scheme, buffers are recommended to avoid direct impacts on select heritage assets, although it is recommended in specific areas that some assets of negligible significance (eg MM23 and MM26) can be planted.

Given the intensive farming landscape and links between the heritage assets within, a large buffer has been recommended which encompasses the majority of the field systems, but also preserves the areas of more intensive occupation around MM01 and MM03.

The recommended general buffer zones for each site are outlined in Table 7.1. The buffers are also represented in Appendix B, Figure 2, as well as the shapefiles provided alongside this DBA. The locations and buffers shown in Figure 2 provide a visual representation of the buffers recommended and should not be relied upon for accurately placing these in the landscape. The shapefiles provide accurate information as to the locations and condition of assets recorded during the walkover survey.

**Table 7.1: Recommended buffer zones**

Asset	Asset Name	Asset Type	Proposed buffer
MM01	Boheadlag	Farmstead, head dyke	Tailored buffer
MM01a	Boheadlag	Structure	10m minimum, but within wider buffer
MM01b	Boheadlag	Structure	10m minimum, but within wider buffer
MM01c	Boheadlag	Structure	10m minimum, but within wider buffer
MM01d	Boheadlag	Structure	10m minimum, but within wider buffer

<b>Asset</b>	<b>Asset Name</b>	<b>Asset Type</b>	<b>Proposed buffer</b>
MM01e	Boheadlag	Lime kiln?	10m minimum, but within wider buffer
MM01f	Boheadlag	Enclosure	10m minimum, but within wider buffer. Do not plant interior
MM01g	Boheadlag	Structure	10m minimum, but within wider buffer
MM01h	Boheadlag	Structure	10m minimum, but within wider buffer
MM01i	Boheadlag	Enclosure	10m minimum, but within wider buffer. Do not plant interior.
MM01j	Boheadlag	Enclosure	10m minimum, but within wider buffer. Do not plant interior.
MM02	Boheadlag	Lime kiln	10m minimum, but within wider buffer
MM03	Boheadlag	Building, field boundary, rig and furrow	Tailored buffer
MM03a	Boheadlag	Building	10m minimum, but within wider buffer
MM03b	Boheadlag	Field system	5m either side, providing a 10m corridor minimum, within wider buffer
MM03c	Boheadlag	Field system	5m either side, providing a 10m corridor minimum, within wider buffer
MM03d	Boheadlag	Field system?	5m either side, providing a 10m corridor minimum, within wider buffer
MM03e	Boheadlag	Rig and furrow	Preserved within wider buffer
MM03f	Boheadlag	Building	10m minimum, but within wider buffer. Do not plant interior.
MM03g	Boheadlag	Field systems	5m either side, providing a 10m corridor minimum, within wider buffer
MM04	Boheadlag	Structure?	10m minimum, but within wider buffer. Do not plant interior.
MM05	Boheadlag	Field system	5m either side, providing a 10m corridor minimum, within wider buffer
MM06	Boheadlag	Drystone wall/field boundary	5m either side, providing a 10m corridor minimum, within wider buffer
MM07	Boheadlag	Rig and furrow	None. Elements preserved within wider buffer
MM08	Boheadlag	Rig and furrow	None
MM09	Boheadlag	Field system	5m either side, providing a 10m corridor minimum, within wider buffer
MM10	Boheadlag	Structure?	10m minimum, but within wider buffer.
MM11	Boheadlag	Structure?	10m minimum, but within wider buffer.
MM12	Boheadlag	Foot bridge?	10m minimum, but within wider buffer.
MM13	Boheadlag	Field boundary	5m either side, providing a 10m corridor minimum, within wider buffer
MM14	Boheadlag	Cairn/field boundary?	5m either side, providing a 10m corridor minimum, within wider buffer
MM15	Boheadlag	Field system	5m either side, providing a 10m corridor minimum, within wider buffer
MM16	Boheadlag	Cairn (possible)	None - advised can be planted.
MM17	Boheadlag	Cairn (possible)	None - advised can be planted.
MM18	Boheadlag	Linear (boundary?)	5m either side (10m corridor)
MM19	Boheadlag	Head dyke	5m either side (10m corridor)

Asset	Asset Name	Asset Type	Proposed buffer
MM20	Boheadlag	Cairn	10m
MM21	Boheadlag	Field boundary	5m either side (10m corridor)
MM22	Boheadlag	Cairn	10m
MM23	Boheadlag	Clearance Cairn	None - advised can be planted.
MM24	Boheadlag	Field boundary	5m either side (10m corridor)
MM25	Boheadlag	Field boundary	5m either side (10m corridor)
MM26	Boheadlag	Clearance Cairn	None - advised can be planted.
MM27	Boheadlag	Cairn?	10m minimum, but within wider buffer.
MM28	Boheadlag	Cairn	10m minimum, but within wider buffer.
MM29	Boheadlag	Field boundary	5m either side (10m corridor)

The design concept for the woodland has yet to be finalised and as such only indicative planting locations have been provided. Rides, breaks, tracks and areas of open ground should be designed, where relevant, to provide access to particular sites. This will allow access to the buffered assets for the purposes of management and public interest.

### 7.2.2 Fencing

Prior to work commencing, each of the buffer zones established in the Forest Design will be clearly marked and delineated on the ground by a qualified heritage professional according to the descriptions provided in this DBA or as agreed with stakeholders and assisted by the shapefiles accompanying it. This is to ensure that no planting takes place on these areas and that they are not damaged by the tracking of machinery during the planting process.

### 7.2.3 Toolbox Talk

Prior to site works commencing, a toolbox talk will be delivered to the appointed contractors. As a minimum, this will discuss the specific historic environment issues identified in the DBA, including the location of buffer zones and potential for unrecorded archaeological features to survive in areas of the site.

The toolbox talk will also cover the need to report any potentially important archaeological features or artefacts located during the planting process. Any archaeological objects which are noted or recovered by the contractor during site works must be reported to the client's Archaeological Consultant in the first instance and thereafter to PKHT. This is in line with the UKFS Requirement 2 relating to 'Archaeological Finds'<sup>27</sup> and the Treasure Trove system in Scotland.

The provision of a toolbox talk will ensure that those working on the site are aware of the importance of the historic environment; encouraged to recognise archaeological features; and assist in the recording and preservation of these as recommended by UKFS Guideline 6.<sup>28</sup>

<sup>27</sup> The Forestry Commission 2017, The UK Forestry Standard: The Government's Approach to Sustainable Forestry - 83

<sup>28</sup> *Ibid.* 88

#### **7.2.4 Forest Management Plan**

The extent of root spread from the trees planted should also be considered when planning planting around buffers, ensuring trees planted will not disturb or undermine archaeological features through the growth and spread of roots across the proposed buffer. A management plan should be put in place to ensure buffers are adequately maintained and do not become inaccessible and overgrown with a spread of self-seeding trees.

Consideration should be given in the Forest Management Plan to the felling regimes to be employed when cutting down trees and extracting timber in the future. Methodologies should consider the presence of heritage assets and those methodologies employed should be as non-destructive as possible when required in close proximity to recorded heritage assets.

#### **7.3 Statement of archaeological potential – unrecorded sites**

The walkover survey was extensive and the DBA accessed all readily available heritage assets. However, it is accepted that unrecorded archaeological deposits may survive across the study area, even where no indication of such assets exist within the DBA.

## 8 Acknowledgements

Mott MacDonald would like to thank Tilhill Forestry Ltd, and in particular [REDACTED] for commissioning us to undertake the DBA as part of the Boheadlag Woodland Creation Scheme. [REDACTED] deserves our gratitude for her understanding and awareness of the potential heritage issues on the site.

We extend our gratitude to [REDACTED] and [REDACTED] at PKHT for her help and advice at the onset of the DBA.

## 9 Bibliography

### 9.1 Aerial images

**Table 9.1: Aerial images consulted**

Frame Numbers	Sortie	Date	Platforms
3156	106G/Scot/UK/0065	08/05/1946	NCAP
4081	106G/Scot/UK/0077	08/05/1946	NCAP
4082	106G/Scot/UK/0077	08/05/1946	NCAP
-	-	12/2005	Google Earth
-	-	05/2009	Google Earth
DP 086816	-	02/03/2010	NRHE
DP 086817	-	02/03/2010	NRHE
-	-	04/2013	Google Earth
-	-	04/2015	Google Earth
-	-	02/2019	Google Earth
SC 1704644	-	12/02/2021	NRHE
SC 1704646	-	12/02/2021	NRHE
SC 1704647	-	12/02/2021	NRHE
-	-	04/2021	Google Earth
-	-	-	www.google.com/maps
-	-	-	www.bing.com/maps

### 9.2 Bibliographic references

#### 9.2.1 Datasets

Perth and Kinross Historic Environment Record – purchased 28/06/2022

Historic Environment Scotland Listed Buildings – updated 03/08/2022

Historic Land-use Assessment map – updated 03/08/2022

National Record of the Historic Environment CANMORE Points – updated 03/08/2022

National Record of the Historic Environment CANMORE Areas – updated 03/08/2022

#### 9.2.2 Digital

<https://www.ainmean-aite.scot/placename/boheadlag/>; Gaelic place-names of Scotland – accessed 08/06/2022

<http://archaeologydataservice.ac.uk/archsearch/>: Archaeology Data Service – accessed 08/06/2022

<http://www.bgs.ac.uk/>: British Geological Survey – accessed 07/06/2022

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### 9.2.4 Policy and guidance

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## 9.3 Cartographic references

### 9.3.1 Pre-Ordnance Survey

**Table 9.2: Pre-Ordnance Survey maps consulted**

Date	Surveyed	Who	Title
1583-96	-	Timothy Pont	Garry, Tummel, and Upper Tay; Dunkeld to Blairgowrie (Pont 23)
1636-52	-	Robert Gordon	Straloch’s mapp of Scotland, and, The West coast from Glen Elg to Knap-dail
1636-52	-	Robert Gordon	A map of Eastern Scotland, including basins of Rivers Don, Dee, Tay, Forth, and Tweed
1636-52	-	Robert Gordon & James Gordon	Athol ... and Renna...Atholl Rennach wt. all the bordering waists
1654	-	Joan Blaeu	Scotiae provinciae mediterraneae inter Taum flumen et Vararis aestuarium : Sunt autem Braid-Allaban, Atholia, Marria Superior, Badenocha, Strath-Spea, Lochabria, cum Chersoneso qui ei ad occasum praetenditur; cum singulis earundem partibus / opera Ro. G
1745	Pre-1732	Herman Moll	The North P. of Perth Shire containing Athol and Broadalbin
1747-55	-	William Roy	Military Survey of Scotland
1783	-	James Stobie	The Counties of Perth and Clackmannan
1827	-	John Thomson William Johnson	Perthshire with Clackmannan
1831	-	James Know	Map of the basin of the Tay

Source: [www.nls.uk](http://www.nls.uk)

### 9.3.2 Ordnance Survey

**Table 9.3: Ordnance Survey maps consulted**

Survey	Publish	Scale	Title
1863	1867	25 inches to 1 mile	Perth and Clackmannanshire L.1 (Dull)
1899	1900	25 inches to 1 mile	Perth and Clackmannanshire L.1
-	1948	1:25,000	27/95 – A
-	1959	1:25,000	NN95 - C

Source: [www.nls.uk](http://www.nls.uk)

## A. Gazetteer

**Table A.1: Gazetteer of heritage assets recorded during the DBA**

Number	Site Name	Site Type	Source	HER Ref	NRHE Ref	Significance	Period	Easting	Northing	Description	Walkover
MM01	Boheadlag	Farmstead, head dyke	HER	MPK9026	131819	Low	Post medieval - Modern	292030	750990	A farmstead comprising one unroofed, one partially roofed, one roofed building and two enclosures, and a head-dyke are depicted on the 1st edition of the OS 6-inch map (Perthshire 1867, sheet I). One partially roofed, one roofed, two unroofed buildings, three enclosures and a head-dyke are shown on the current edition of the OS 1:10000 map (1992).	Various elements of the complex recorded during the walkover and recorded separately as below.
MM01a	Boheadlag	Structure	HER	MPK9026	131819	Low	Early Modern	292029	750969	Visible on aerial images. Included in HER description.	Degraded structure. Improvement building of coursed split and roughly squared/slabbed field stones bonded by lime mortar. Roughly N-S aligned, S gable is intact. Dimensions 4m by 11m. Included in NRHE and HER record.
MM01b	Boheadlag	Structure	HER	MPK9026	131819	Low	Post medieval?	292022	750982	Visible on aerial images. Included in HER description.	Sunken building surviving as low footings, yet revetted into slope to S. Seemingly not recorded by NRHE and HER.
MM01c	Boheadlag	Structure	HER	MPK9026	131819	Low	Post medieval?	292018	750992	Visible on aerial images. Included in HER description.	Sunken building surviving as low footings. Seemingly connected to MM01b to S. N-S aligned. 0.5m high. 6m by 2m. Seemingly not recorded by NRHE and HER.
MM01d	Boheadlag	Structure	HER	MPK9026	131819	Low	Post medieval?	292037	750993	Visible on aerial images. Included in HER description.	W-E aligned building. Split in two, with W end surviving to near full height of 1.8m while E end is mainly footings. Measures 5m N-S by 13m. Included in NRHE and HER record.
MM01e	Boheadlag	Lime kiln?	Walkover	MPK9027	131819	Low	Post medieval - Modern	292044	751033	Visible on aerial images.	Sub circular structure, heavily overgrown with no stones visible. c.4.5m diameter. <0.6m high with dipped interior. Possible extended area at S end although very overgrown. Not recorded by NRHE and HER.
MM01f	Boheadlag	Enclosure	HER	MPK9026	131819	Low	Post medieval - Modern	292054	751020	Visible on aerial images. Included in HER description.	Circular drystone animal enclosure. Surviving to full height of c.0.80m in places, but much collapsed in others. Full circuit still visible. Included in NRHE and HER record.
MM01g	Boheadlag	Structure	HER	MPK9027	131819	Low	Post medieval - Modern	292010	751006	Visible on aerial images. Included in HER description.	W-E aligned low building footings, directly adjacent to upstanding enclosure to N. 4m by 8m. Not recorded by NRHE and HER.
MM01h	Boheadlag	Structure	HER	MPK9026	131819	Low	Early Modern - Modern	292028	751021	Visible on aerial images. Included in HER description.	Viable post improvement structure. Included in NRHE and HER record.
MM01i	Boheadlag	Enclosure	HER	MPK9026	131819	Low	Early Modern - Modern	292029	751013	Visible on aerial images. Included in HER description.	Rectilinear drystone wall enclosure to south of farm. Measures c.20m NE-SW by c.6m NW-SE. Included in NRHE and HER record.
MM01j	Boheadlag	Enclosure	HER	MPK9026	131819	Low	Early Modern - Modern	292011	751039	Visible on aerial images. Included in HER description.	Rectilinear drystone wall enclosure attached (on N side) of farm building MM01h. Measures c.54m NW-SE by c.45m NE-SW. Included in NRHE and HER record.
MM02	Boheadlag	Lime kiln	HER	MPK9026	N/A	Low	Post medieval	291918	751123	Lime kiln. No further text provided by HER.	Large drystone kiln built into E facing slope. Built from coursed unworked slabs and angular stones. c.1.5m high. Opening on E side. Curved to W. 5m by c.4m.
MM03	Boheadlag	Building, field boundary, rig and furrow	HER	MPK16656	279768	Low	Post medieval	292120	751290	A group of earthworks are visible on RCAHMS aerial photography, the remains of a post-medieval farmscape with buildings, field banks and areas of plough rig.	Various elements of the complex recorded during the walkover and recorded separately as below.
MM03a	Boheadlag	Building	HER	MPK16656	279768	Low	Medieval - Post medieval?	292141	751302	Visible on aerial images. Included in HER description.	Large NE-SW aligned building with clear overgrown stone foundations and dipped interior. Seems to have rounded terminals. 4m by 9.5m.

Number	Site Name	Site Type	Source	HER Ref	NRHE Ref	Significance	Period	Easting	Northing	Description	Walkover
MM03b	Boheadlag	Field system	HER	MPK16656	279768	Low	Medieval - Post medieval?	292169 292121 292125	751239 751244 751280	Visible on aerial images. Included in HER description.	Low N-S running curvilinear earthen bank. Large bank spread up to 2m at base and 0.75m high. Occasional large stones protruding. Contains rig and furrow MM03e, but this also appears to spread beyond it to the NW.
MM03c	Boheadlag	Field system	HER	MPK16656	279768	Low	Medieval - Post medieval?	292118 292106	751257 751312	Visible on aerial images. Included in HER description.	Curvilinear earth bank, creating pre improvement field systems. Bank is low stone base with earth top. c.0.8m wide and 0.2m high. Contains western side of rig and furrow MM03e. Abuts MM03b to SE.
MM03d	Boheadlag	Field system?	HER	MPK16656	279768	Low	Medieval - Post medieval?	292114	751248	Possible structure/small enclosure created on outside return where MM03c meets MM03b. Not visible during walkover but clear on aerial images.	Not recorded during walkover survey.
MM03e	Boheadlag	Rig and furrow	HER	MPK16656	279768	Low	Medieval - Post medieval?	292147	751268	Visible on aerial images. Included in HER description. Interpreted as possibly medieval or post medieval based on width of rigs and less regular alignment.	Area of wide, clearly defined rig and furrow aligned N-S and clearly defined by surrounding MM03b and MM03c. MM03b runs through it however, so likely more than one phase of field system/ploughing here. Likely to be medieval or post-medieval in date.
MM03f	Boheadlag	Building	HER	MPK16656	279768	Low	Medieval - Post medieval?	292149	751304	N/A	Small building on same alignment as MM03a. Survives as low overgrown footings. Abuts E end of MM03a. 3m by 3m.
MM03g	Boheadlag	Field systems	HER	MPK16656	279768	Low	Medieval - Post medieval?	292083 292050 291965	751312 751320 751277	Visible on aerial images. Included in HER description.	Series of field boundaries and field systems. Low curvilinear earthen banks. Contains large irregular stones. c.1m wide and 0.2 - 0.4m high. No stones.
MM04	Boheadlag	Structure?	Walkover	N/A	N/A	Low	Unknown	291934	751275	N/A	NE-SW aligned building, visible as low earth footings with dipped interior. 4m by 6m.
MM05	Boheadlag	Field system	Walkover	N/A	N/A	Low	Unknown	291955 291944 291912	751283 751222 751177	Partially visible on aerial images.	Series of three field boundaries, not contained by the HER entry (MM03), but clearly related to MM03g. Field boundary, running SW-NE. c.1m wide and 0.15m high, abuts MM03g. Field boundary running c.W-E. Likely a continuation of MM03g. Field boundary aligned c. NW-SE, abuts near to MM06. Earthen bank.
MM06	Boheadlag	Drystone wall/field boundary	Walkover	N/A	N/A	Low	Unknown	292104 292073 292005	751157 751264 751238	Visible on aerial images. Defines MM07.	Curvilinear drystone wall running towards NE, running around high ground to the W. May be a continuation to SW, but this is ephemeral and difficult to trace. c. 0.8m wide and 0.2m high.
MM07	Boheadlag	Rig and furrow	DBA	N/A	N/A	Negligible	Unknown/Modern	292031	751187	Rig and furrow visible on aerial images, particularly the snow covered NRHE aerial images from 2010 and 2021. Not recorded during walkover survey. Visible as very clear as tightly W-E aligned striations. Has the appearance of more modern ploughing, clearly defined by the field boundaries (MM06).	Not recorded during walkover.
MM08	Boheadlag	Rig and furrow	DBA	N/A	N/A	Low	Medieval - Post medieval?	292113	751141	Area of rig and furrow visible on aerial images. More clearly defined than MM to the W. Seems to be an area that 'spills' beyond the 'enclosed' field MM, perhaps a short-lived attempt to plough the lower lying, more marginal wet land along the Allt Mor. Interpreted as possibly medieval or post medieval based on width of rigs and less regular alignment.	Not recorded during walkover.
MM09	Boheadlag	Field system	Walkover	N/A	N/A	Low	Unknown	291929 291925	751099 751170	Partially visible on aerial images.	NW-SE aligned earth bank. Runs up steep S facing slope. Not visible to S, but this area is very overgrown and lower lying. Bank is spread up to 1.5m wide and 0.2m (E side) and c.0.55m (W side) with slope. Has a bit of appearance of 'mounding'. Likely part of same field system as MM03g, MM05 and MM06.
MM10	Boheadlag	Structure?	Walkover	N/A	N/A	Low	Unknown	292005	751122	Anomaly visible in aerial images.	Area of disturbance, potentially a building, with low footings and slightly dipped interior. Not entirely clear. Building measures 3.5m by 7m. NE-SW.
MM11	Boheadlag	Structure?	Walkover	N/A	N/A	Low	Unknown	291969	751128	Anomaly visible in aerial images.	Possible structure. Not clearly defined. Located on high ground S of burn and MM01. Aligned NNW-SSE but with Jo definition at N end. Measures c.6.5m by 4m.
MM12	Boheadlag	Foot bridge?	Walkover	N/A	N/A	Low	Unknown	292012	751097	Foot bridge' marked on modern OS.	Defined channel in burn, with a channel c.0.6m wide, created by drystone walls/pillars 5-6 courses high. Created from large field stones and slabs. Located on possible modern farmer quad track. Probably 'footbridge' marked on modern OS.

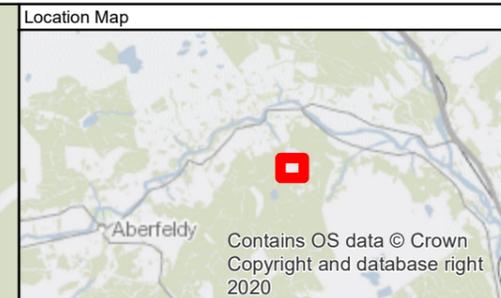
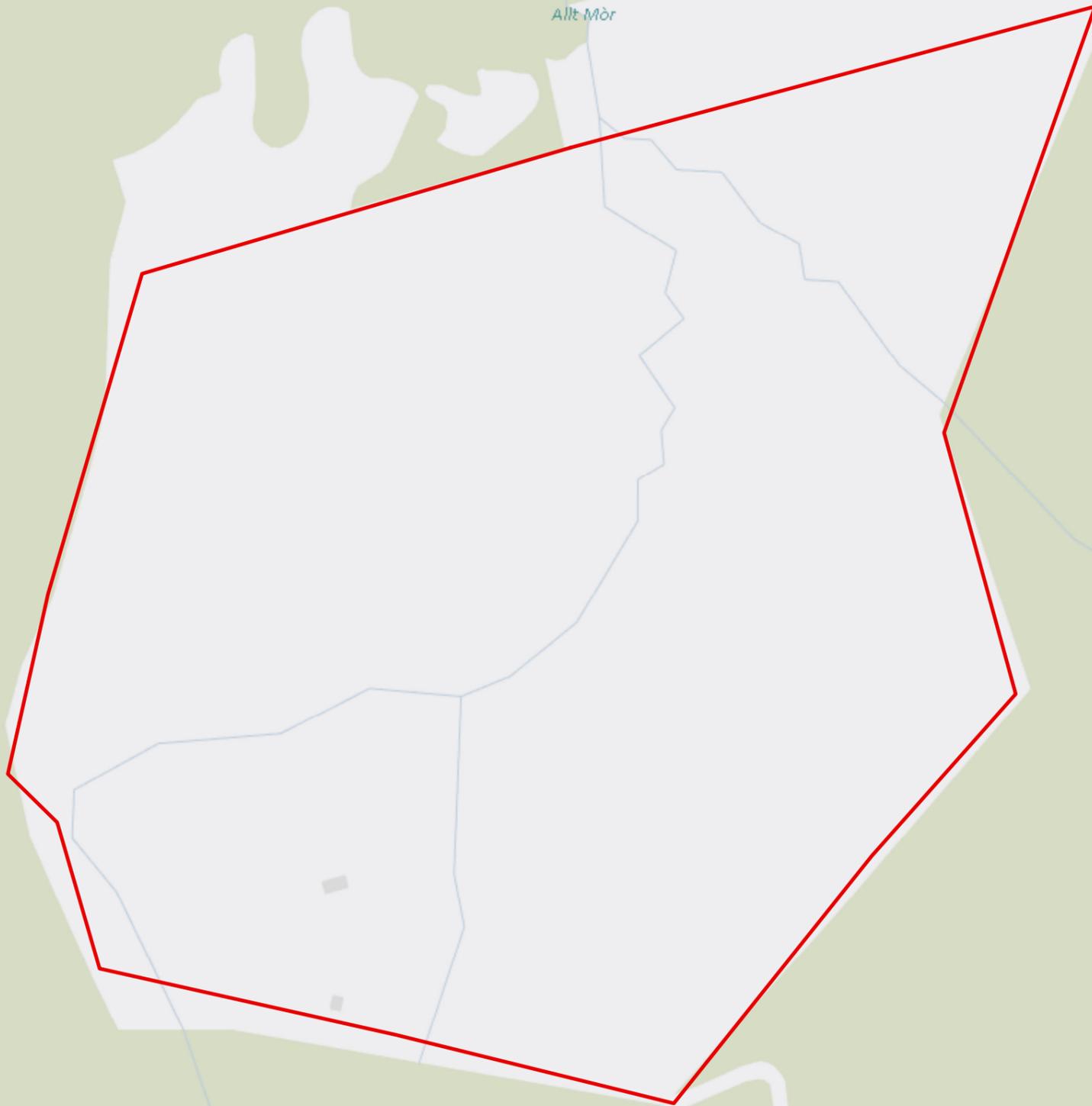
Number	Site Name	Site Type	Source	HER Ref	NRHE Ref	Significance	Period	Easting	Northing	Description	Walkover
MM13	Boheadlag	Field boundary	Walkover	N/A	N/A	Low	Unknown	292062 292024	751108 751087	N/A	Curvilinear drystone wall on S side of burn, running to SW. Overgrown.
MM14	Boheadlag	Cairn/field boundary?	Walkover	N/A	N/A	Low	Unknown	292068	751065	N/A	Cairn with a concentration of large angular stones, with a short element of drystone wall running NE-SW to N.
MM15	Boheadlag	Field system	Walkover	N/A	N/A	Low	Unknown	291999 291941 291981	751004 751018 750972	Partially visible on aerial images.	Degraded curvilinear drystone wall. Aligned roughly W-E. At E end, the wall is a low area of large irregular stones, very close to MM01j. Incorporates bedrock. Curvilinear c.N-S aligned drystone wall, comprising an area of stones and upcast defining edge of higher improved ground to E. Slopes makes it clearly defined to W. Short stretch of wall adjoining MM01f to topography. Single line of large field stones. 4m W-E.
MM16	Boheadlag	Cairn (possible)	Walkover	N/A	N/A	Negligible	Unknown	292277	751352	N/A	Area or raised ground, some stones through probing. Long grass all around yet vegetation is very low. Measures 1.5m diameter and c.0.25m high.
MM17	Boheadlag	Cairn (possible)	Walkover	N/A	N/A	Negligible	Unknown	292266	751345	N/A	Possible cairn. Close to and very similar to MM05. Area of higher ground located on SE periphery of slightly improved area, surrounded to SW through to E and N by long grass. Vegetation very low. Measures 2m diameter and c.0.2m high. Some stones through probing.
MM18	Boheadlag	Linear (boundary?)	Walkover	N/A	N/A	Negligible	Unknown	292310	751319	N/A	Linear arrangement of stones, aligned NW-SE. Heavily overgrown but seems to be medium sized stones, individually placed and spaced. There is a lot of upcast in the area (none recorded) for drainage. Stones seem to run into a large N running drain, but no clear drain for these stones. Possible drain to E.
MM19	Boheadlag	Head dyke	Walkover	N/A	N/A	Low	Medieval - Modern	292169 292301 292345 292185	751357 751248 751109 750928	N/A	Curvilinear field boundary located directly SW side of substantial dip for watercourse in NE corner of study area. May contain some upcast but too defined to be solely upcast. Clearly defined as two stones width c.0.8m. Overgrown and seems one course <0.15m. Becomes much more substantial as proceeds to the S, then SW before being lost in modern felled forestry. Much larger and more substantial to SE up to 0.8m high. Possible head dyke defining old Boheadlag farm, lost to the south and west by tree planting.
MM20	Boheadlag	Cairn	Walkover	N/A	N/A	Low	Unknown	292193	751281	Visible on aerial images.	Concentration of small to large angular stones. Located on W facing slope of burn. Measures c. 8m N-S by 4m.
MM21	Boheadlag	Field boundary	Walkover	N/A	N/A	Low	Unknown	292197 292193	751248 751221	Visible on aerial images.	Curvilinear drystone wall. Located on edge of watercourse with improved ground to E. Clear stone core.
MM22	Boheadlag	Cairn	Walkover	N/A	N/A	Negligible	Unknown	292176	751200	Visible on aerial images.	Overgrown concentration of small to large angular stones. Heavily overgrown.
MM23	Boheadlag	Clearance Cairn	Walkover	N/A	N/A	Negligible	Unknown	292262	751065	N/A	Concentration of very large, rounded stones. Field clearance. Measures diameter 4m. Height <0.3m, one course of stones.
MM24	Boheadlag	Field boundary	Walkover	N/A	N/A	Low	Unknown	292220 292185	750983 751003	Visible on aerial images.	Low curvilinear field boundary defining semi-improved ground to SW from wet ground to NE. Aligned NW-SE. Ephemeral. Overgrown. Single line of large stones, with steep slope to E. Returns to NE.
MM25	Boheadlag	Field boundary	Walkover	N/A	N/A	Low	Unknown	292185 292151 292124	751045 751046 751055	Visible on aerial images.	Probable field boundary. Located within an area of heavy fern growth. Stones visible through probing. Clearer from distance.
MM26	Boheadlag	Clearance Cairn	Walkover	N/A	N/A	Negligible	Unknown	292129	750952	N/A	Clearance cairn of medium to large field boulders. There seems to be drainage to S, with occasional large stones lying about, but this cairn is clearly defined. Measures 3m NW-SE by 1.5m with height of 0.15m.
MM27	Boheadlag	Cairn?	Walkover	N/A	N/A	Low	Unknown	292090	751021	N/A	Concentration of stones. Possible continuation of MM11, disrupted. Overgrown. Medium angular boulders.
MM28	Boheadlag	Cairn	Walkover	N/A	N/A	Low	Unknown	291948	751216	N/A	Overgrown low cairn, measuring c.8m N-S by 5m. Built against field boundary MM05 to N. Concentration of small angular stones. Clearance?
MM29	Boheadlag	Field Boundary	Walkover	N/A	N/A	Low	Unknown	292379 292353	751426 751419	N/A	Degraded drystone wall. Aligned WSW-ESE on S side of existing drystone wall. May be degraded predecessor or accumulated quarrying/clearance not used on construction of wall. Overgrown. Medium to large stones. c.0.15m high and 1m wide.



## B. Figures

**Table B.1: Figures within Appendix B**

<b>Figure Number</b>	<b>Title</b>
Figure 1	Study Area
Figure 2	Heritage assets identified and proposed buffers



Key to Symbols

— Study Area

Notes

Do not scale from this drawing

Rev	Date	Drawn	Description	Ch'k'd	App'd
01	11/08/2022	JM	PRELIMINARY DRAFT	RC	ZB

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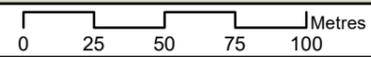


Title

Boheadlag  
Woodland Creation Scheme  
Scheme Location  
Figure 1

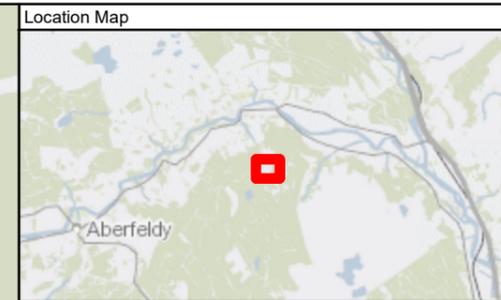
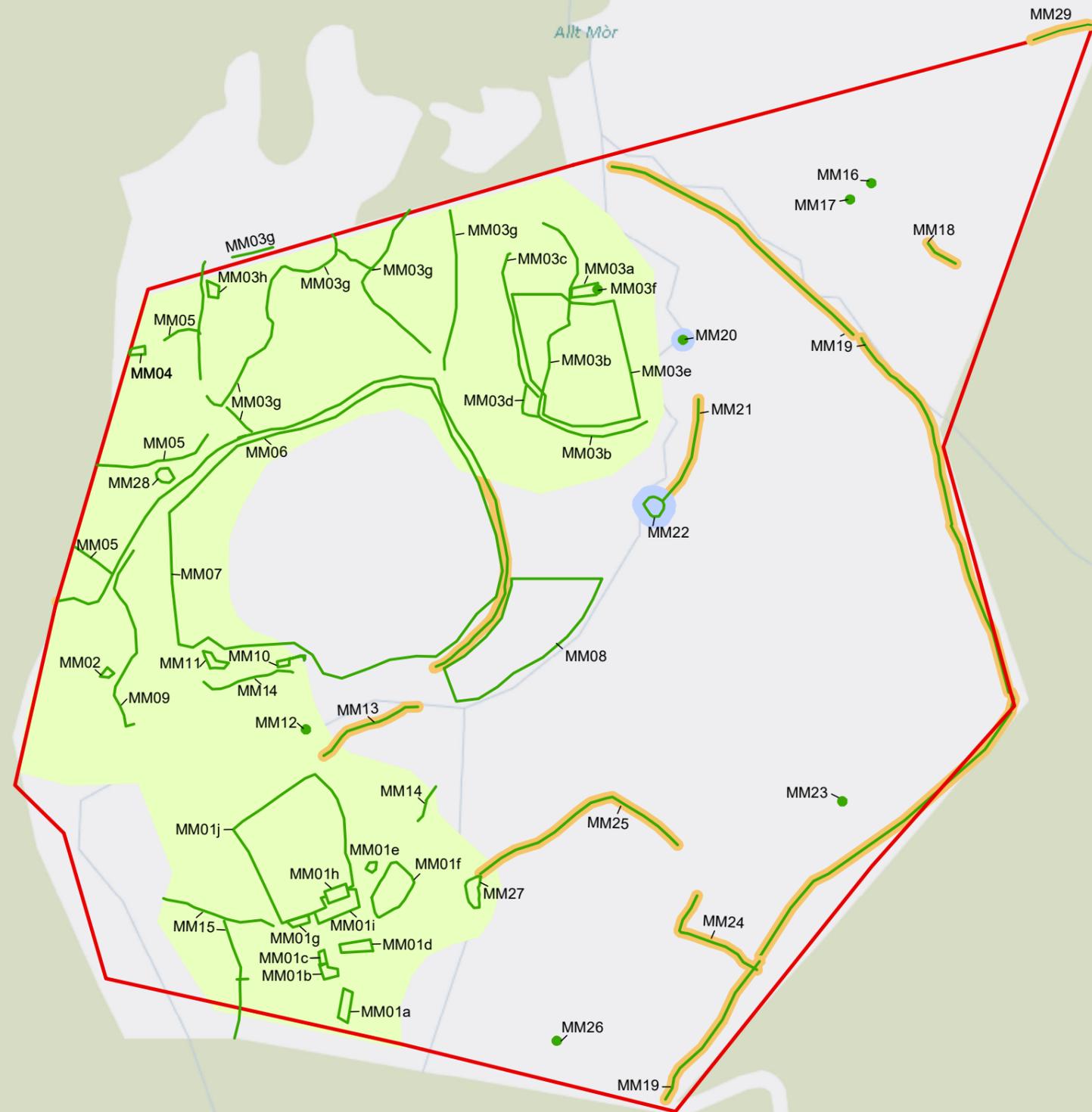
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Drawn	J Moorhouse	Coordination	J Moorhouse
GIS Check	R Cameron	Approved	Z Burn
Scale at A3	Status	Rev	Security
1:2,500	PRE	P1	STD

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Drawing Number  
**MMD-398635 CE28-DR-EN-GIS-001**



Key to Symbols

- Study Area
- Heritage Asset Polygon
- Heritage Asset Line
- Heritage Asset Point
- Heritage Asset Unique Buffer
- Heritage Asset 10m Buffer
- Heritage Asset 5m Buffer

Notes

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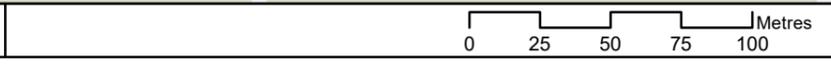
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Title

Boheadlag  
 Woodland Creation Scheme  
 Heritage Asset Location Plan  
 Figure 2

Designed	J Moorhouse	Eng Check	R Cameron
Drawn	J Moorhouse	Coordination	J Moorhouse
GIS Check	R Cameron	Approved	Z Burn
Scale at A3	Status	Rev	Security
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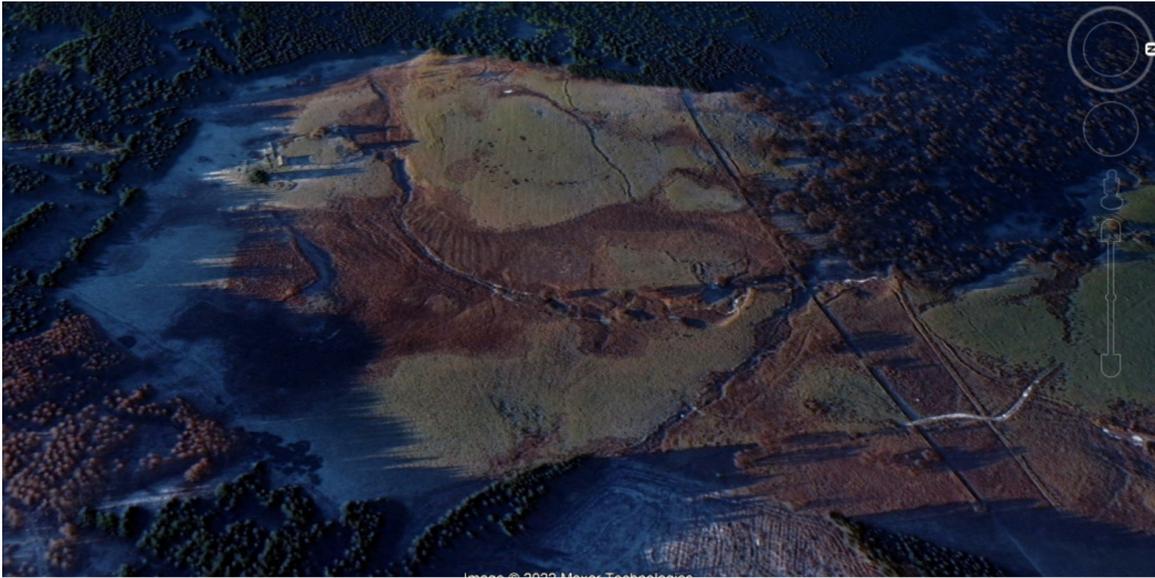




# Boheadlag, Perthshire.

## Evaluation of botanical interest

September 2022



Aerial view of Boheadlag showing a mosaic of acid grassland and rush-pasture.

Document Prepared for [REDACTED], Tilhill Forestry.

Report compiled by [REDACTED]

Main contact: [REDACTED], Ecologist, Tilhill Forestry Ltd, Unit 1, Duckburn Park, Dunblane, Stirling FK15 0EW [REDACTED] [@tilhill.com](mailto:[REDACTED]@tilhill.com) 01786 821666

## BACKGROUND

Circa 17 ha of open ground at Boheadlag (NGR NN921511) has potential for woodland creation within the revised Griffin Long-Term Forest Plan 2023- 2032.

During the LTFP scoping process, two consultees raised concerns that the area around Boheadlag should not be planted on account of it containing “areas of high conservation value open ground” and it “preserves rich and important grassland, wildflowers and bog plants”. No botanical or habitat detail was provided by either consultee and no species records are held for this site on the National Biodiversity Network (NBN) dataset.

No evidence has therefore been presented as to the botanical interest of this land. In view of this, the Forest Manager has asked for an assessment of the botanical interest to inform the woodland creation proposal. This has been undertaken by John Gallacher, Senior Ecologist with Tilhill Forestry, who has over 38 years of experience in botanical surveying and habitat assessment.

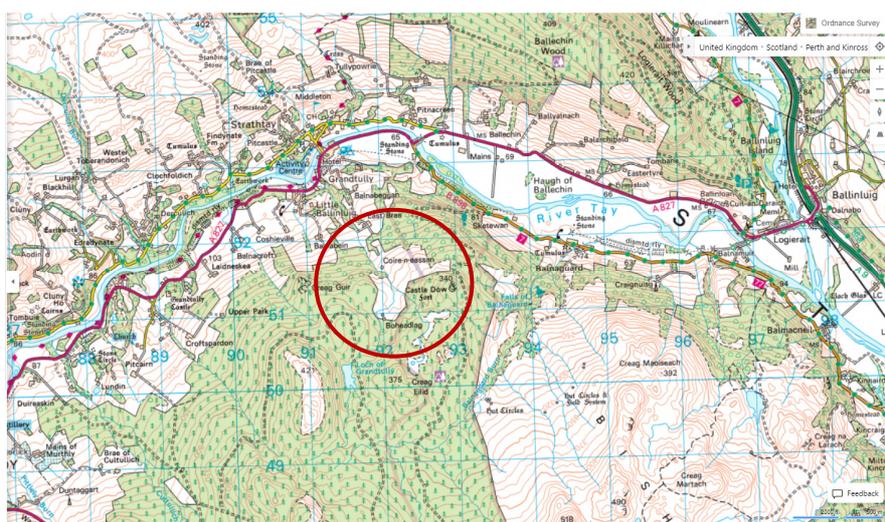
## THE SITE

The site lies six km east of Aberfeldy and 2 km south of Grandtully and has been historically grazed by both sheep and cattle since post-medieval times.

The land is a mix of mainly open ground habitats including semi-improved acid grassland, unimproved acid grassland, and acid rush-pasture. These habitats are typical of Perthshire marginal hill ground.

Agricultural improvement has taken place in the past including drainage of the marshy grasslands as can be seen from the aerial photographs of the property. The archaeological report (Cameron, 2022) notes that “this landscape includes evidence for both pre-improvement and post-improvement buildings, kilns, field systems, and clearance cairns”. The site has a long history of agricultural improvement which can have a negative impact on the botanical interest of sites.

The location is shown below:



## SURVEY

The land was walked on the 11<sup>th</sup> of August 2022 and the range of plant communities assessed.

Timing of this check to assess botanical interest was optimal in terms of identifying habitats and associated plant species. Dry conditions prevailed during the survey.

The site assessment identified a limited mix of habitats including semi-improved acid grassland, unimproved acid grassland and rush-pasture. All habitats, as discussed above, have been modified by long-term agricultural practices (e.g. grazing, liming and drainage impacts).

## RESULTS

Although a Phase 1 survey was not conducted, the following alphanumeric Phase 1 communities with NVC equivalents occur:

### **B1.2** Semi-improved acid grassland – NVC MG6 *Lolium perenne*-*Cynosurus cristatus* grassland.

A small area of grassland occurring at the north end of the site showing signs of reseeding with Perennial ryegrass (*Lolium perenne*) dominating the sward.

### **B1.1** Unimproved acid grassland – NVC U4 *Festuca ovina*-*Agrostis capillaris*-*Rumex acetosella* grassland.

This habitat occupies the drier knolls and hillocks of the site and is mostly composed of species-poor Fescue (*Festuca ovina*) – *Agrostis* grassland. Associated species include Heath bedstraw (*Galium saxatile*), Tormentil (*Potentilla erecta*), Ribwort plantain (*Plantago lanceolata*), Sweet vernal-grass (*Anthoxanthum odoratum*), Pignut (*Conopodium majus*), Germander speedwell (*Veronica chamaedrys*), Smooth meadow-grass (*Poa pratensis*), Eyebright (*Euphrasia* agg), Field wood-rush (*Luzula campestris*) and occasional Common spotted-orchid (*Dactylorhiza fuchsii*). At least three Juniper (*Juniperus communis*) bushes were noted.

### **B5** Marshy grassland – NVC M23 *Juncus acutiflorus*-*Galium palustre* rush-pasture.

This habitat occurs around the riparian zone of the Allt Mhor Burn and is dominated by Sharp-flowered rush (*Juncus acutiflorus*) with Marsh Marigold (*Caltha palustris*), Water Mint (*Mentha aquatica*), Meadowsweet (*Filipendula ulmaria*), Water Forget-me-not (*Myosotis scorpiodes*), Heath Spotted-orchid (*Dactylorhiza maculata*) Ragged Robin (*Lychnis flos-cuculi*), Lady's-smock (*Cardamine pratensis*), Common sedge (*Carex nigra*), Bugle (*Ajuga reptans*), Marsh Hawks-beard (*Crepis paludosa*), Greater Bird's-foot-trefoil (*Lotus pedunculatus*), Marsh Violet (*Viola palustris*), Meadow Buttercup (*Ranunculus acris*), Angelica (*Angelica sylvestris*), Marsh Lousewort (*Pedicularis palustris*) and Common Valerian (*Valerian officinalis*).

## BOTANICAL ASSESSMENT

### **Acid grassland**

The priority habitat status of acid grassland depends on whether it is defined as lowland or upland acid grassland as defined in the [Lowland Dry Acid Grassland Priority Habitat Statement](#).

The eastern side of open ground at Boheadlag follows the line of the 'head dyke' identified in the archaeological survey which is a large earthen bank demarcating the edge of the infield/outfield. Boheadlag falls within the outfield or outbye and above the 270 m (885 feet) contour. The UKBAP Priority Habitat description, while it does not reference altitude, clearly states that the priority habitat is assigned to acid grassland "within large areas of intensively managed farmland". For this assessment it is concluded that the acid grassland areas are Upland Acid Grassland i.e. not Priority Habitat

There is a UK Habitat Statement for upland acid grasslands which states that it is probably one of the most extensive semi-natural habitats in Britain. Estimates suggest that there is in excess of 1,200,000 ha of acid grassland in the uplands where "much acid grassland is often of low biological interest and is the product of poor management of other priority habitats such as dwarf-shrub heath" (Steering Group Report, 1995).

According to Rodwell (1992) these communities are "very often a secondary vegetation type, strongly encouraged by particular kinds of grazing and burning treatments". It is likely that they have been derived from heathland as a result of long-term grazing impacts, and as such, represent degraded habitats.

Acid grassland has declined in some areas of the country because of agricultural intensification and afforestation with a 21% loss recorded between 1940 and 1980 (National Countryside Monitoring Scheme). Nevertheless, according to the Habitat Statement within Biodiversity: The UK Steering Group Report (Volume 2: Action Plans), it remains “one of the most extensive semi-natural habitats in Britain.....estimates suggest that there is in excess of 1,200,000 ha of acid grassland in the uplands”. In the uplands “much acid grassland is often of low biological interest and is the product of poor management of other priority habitats, such as dwarf-shrub heath”.

Green Hairstreak and Small Heath were noted during the LTFP scoping process. These species are associated with the acid grassland areas with Green Hairstreak utilising Blaeberry (*Vaccinium myrtillus*) and the Small Heath fescues (*Festuca* spp.), meadow-grasses (*Poa* spp.), and bents (*Agrostis* spp.).

### **Significance of potential impacts**

This is an extensive habitat across the UK and within Perthshire. Conversion of unimproved acid grassland to woodland would be of **low significance** at the National/Regional/Local context.

### **Mitigation measures.**

Although of low ecological significance, retention of unimproved grassland will be accommodated within the buffers recommend as part of the archaeological mitigation measures.

Lack of stock grazing is likely to result, over the long-term, to scrub and woodland development even in the absence of woodland creation activities.

The Juniper bushes should ideally remain *in situ* and be given buffers to ensure they are not shaded by any proposed woodland creation. Alternatively, they could be translocated under the supervision of an ecologist.

Retention of acid grassland will continue to provide habitat for Green Hairstreak and Small Heath butterflies.

### **Rush-pasture**

The areas of rush-pasture at Boheadlag fall within the NVC M23(a) sub-community which is defined as the species-rich variant of the two main M23 communities. NVC M23(a) is a UK priority habitat and falls within the [“Upland flushes, fens and swamps”](#) category of Scotland’s Broad and Priority habitats list. At Boheadleg, it is closely associated with the Allt Mhor Burn.

The UK Steering Group Report states that the total extent of the habitat in the UK is about 56,000 ha though this figure should perhaps be treated with caution given that survey work has not been extensive (or consistent) in some areas.

The species-rich nature of the examples on this site would indicate some form of base-rich groundwater influence. The location of the limekiln would suggest that the solid geology contains limestone outcrops. However, no obvious spring features were noted during the survey but given the species-rich nature of the rush-pasture it is clear to the author that these areas align with the advice in the “Practice Guide for forest managers to assess and protect GWDTE when preparing woodland creation proposals” (2018).

Small pearl-bordered fritillary was noted during the LTFP scoping process. This species is associated with the rush-pastures and utilises Marsh Violet as the foodplant.

### **Significance of potential impacts**

This is a more restricted habitat than acid grassland and falls into a Priority Habitat category. Conversion of species-rich rush-pasture to woodland would be of **medium significance** at the National/Regional/Local context.

***Mitigation measures.***

“Practice Guide for forest managers to assess and protect GWDTE when preparing woodland creation proposals” (2018) should be applied. This means that the areas of species-rich rush-pasture are buffered from woodland creation activities to ensure they are not shaded through the full woodland cycle. The guidance does allow for the planting of low-density broadleaves.

Like acid grassland, lack of stock grazing is likely to result, over the long-term, to scrub and woodland development even in the absence of woodland creation activities.

Retention of rush-pasture will continue to provide habitat for Small pearl-bordered fritillary.

## PHOTOGRAPHIC RECORD

Photo 1: Boheadlag farmstead showing the broad scale of the acid grassland and rush-pasture mosaic.



Photo 2: Acid grassland grading to rush pasture. Note the *Galium saxatile* within the acid grassland area.



Photo 3: Juncus-dominated wet pasture falls into the species-rich NVC M23a sub-community.



Photo 4: As per photo 3.



