



In association with the National Parks & Wildlife Service and Coillte



Draft Masterplan for Moorehall and Environs, County Mayo

Mayo County Council in association with
the National Parks and Wildlife Service

March 2023

Changing times – Tourism responding to Covid-19

It is important to note that the Covid-19 pandemic of 2020 has greatly impacted on global travel and tourism especially. This Master Plan has been prepared during the uncertainty of Covid-19. While it is recognised that the immediate priority for the Tourism Industry will be to initiate a post Covid-19 response programme and return the sector to recovery over the medium to longer term, it is anticipated that tourism beyond the next few years will return to growth, although consumer interests may be affected by the pandemic.



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Chief Executive of Mayo County Council
 Cathaoirleach Mayo County Council
 National Parks & Wildlife Service
 Coillte
 Embassy of France in Ireland

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1.0 Introduction

1.0 Introduction

1.1. Background

The Moorehall historic estate lies adjacent to the shores of Lough Carra within 95 hectares of varied woodland habitat, just 2km south of Carnacon village, County Mayo.

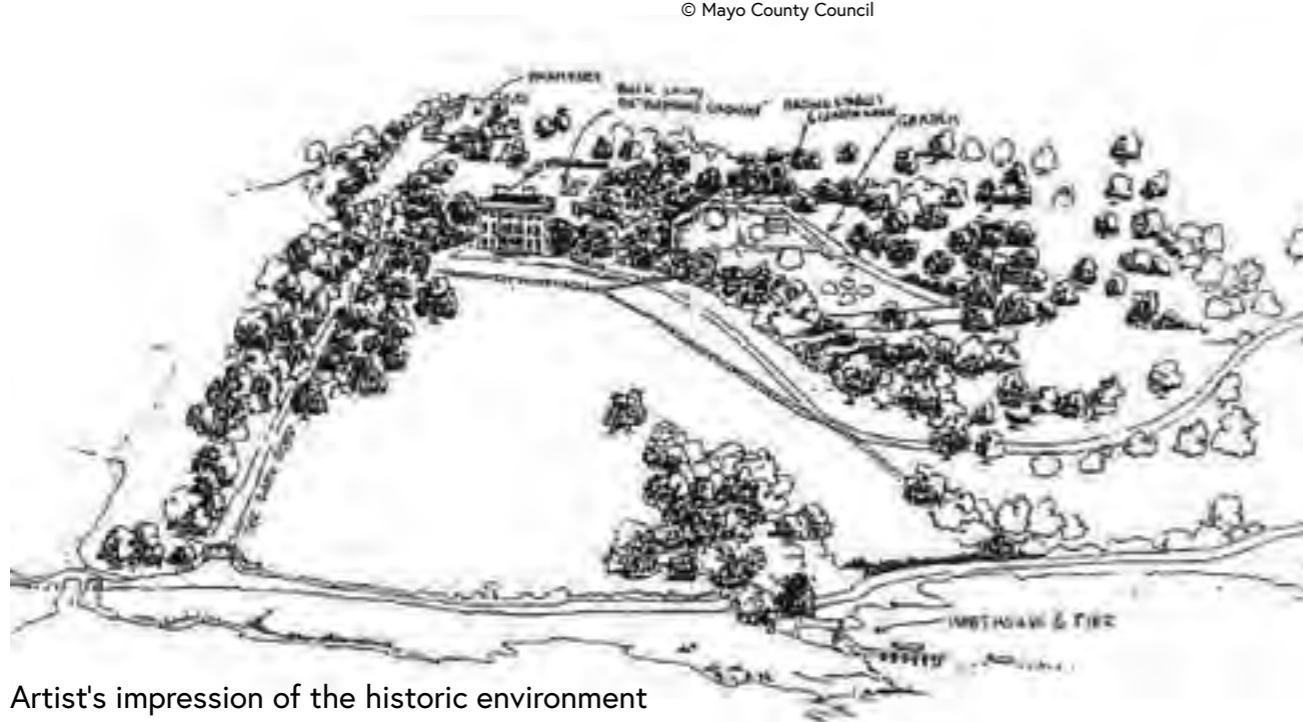
In addition to the woodland, the property consists of the 'big house', Moorehall (designed by architect John Roberts), walled garden, courtyard and farm buildings which were constructed between 1792 and 1796.

The house was burned down in 1923 during the Civil War and together with the courtyard and farm buildings currently lies in ruin (see below).

The Moorehall estate was subsequently acquired by the Irish state for the purposes of commercial forestry and has been operated by Coillte since the late 1980s. As well as commercial forestry, the estate comprises a series of woodland trails and has been open to public recreational use for many years.



Moorehall House as it once was.
© Mayo County Council



Artist's impression of the historic environment of Moorehall and demesne c. 1889.

© Frank O'Reilly, 2018



Moorehall House, Muckloon, Co Mayo

Moorehall House, its barn and farm buildings are designated as a Special Area of Conservation (SAC) for the internationally important lesser horseshoe bat *Rhinolophus hipposideros*, the northernmost range of the species in Europe. The onsite diversity of bat species is particularly impressive with all nine of the known resident Irish species being recorded on-site. This is due to the site offering favourable dark, undisturbed and safe breeding and roosting areas adjacent to favoured riparian and woodland hunting habitats for these nocturnal mammals.

The SAC designated area of Moorehall house and its outbuildings is also a proposed Natural Heritage Area (NHA 00527).

Moorehall demesne lies on the north-eastern shores of Lough Carra, part of the great Western Lakes complex of Galway and Mayo, a designated Special Area of Conservation (Lough Carra/ Mask Complex SAC 1774) and Special Protection Area (Lough Carra SPA 004051). Lough Carra also forms a significant part of the Lough Mask/Lough Carra proposed Natural Heritage Area (pNHA 001774). The lake supports an array of habitats and species listed in the EU Habitats Directive, but is particularly important as it is one of the finest examples of a shallow hardwater (marl) lake in Europe.

Lough Carra provides a striking backdrop to the original Moorehall landscaped gardens and woodlands, as well as a key recreational amenity for local bathing, fishing and boating.

In December 2017, Mayo County Council purchased approximately 80 acres (31.8 ha) of the Moorehall estate from Coillte. There has been a longstanding desire to preserve and develop the very important historic landscape, house and environment at Moorehall and to maximise the amenity potential of Moorehall and wider Lough Carra area. There is also a desire to develop the site as a strategically important visitor attraction in the west of Ireland.

In February 2018, Mayo County Council and the National Parks and Wildlife Service (NPWS) of the Department of Culture, Heritage and the Gaeltacht signed a joint Memorandum of Understanding (MOU) for the purpose of protecting and managing the natural, built and cultural heritage of Moorehall and the wider Lough Carra complex. This Agreement ensures that the natural, built and cultural heritage of Moorehall is protected, yet developed and managed in a sustainable manner for the benefit of current and future generations.

1.2. Introduction and Approach to the Moorehall Masterplan

The project partners, Mayo County Council and the National Parks and Wildlife Service (NPWS) agreed to develop a Masterplan for Moorehall together with the state-owned parts of Lough Carra and state-owned islands (Masterplan site area) shown in Figure 1. SLR Consulting was appointed to prepare the Moorehall Masterplan in 2019.

The Masterplan will define key issues to be addressed and will support decision-making for its future development and management. The Masterplan will be guided by the following principles:

- To maintain or restore the favourable conservation condition of Lesser Horseshoe Bat at Moorehall and Lough Carra's shallow marl lake habitats.
- Any redevelopment of the built heritage shall promote the conservation of protected species as a priority.
- Development of sustainable and appropriate recreational or tourism infrastructure will be in line with the conservation objectives of the Special Areas of Conservation and Special Protection Area.

The masterplan area includes the 31.8 hectares of land of the Moorehall Estate, its environs and the state owned lands surrounding Lough Carra (Figure 1; the northwest corner of the lake is omitted, because it is privately owned).

The masterplan area also makes reference to lands owned by Coillte at Towerhill Wood (68 hectares), 1km to the northeast of Moorehall. Coillte is a significant landowner at Lough Carra and Moorehall (95 hectares); Cloonlee (40 hectares); and Derrinrush Wood at Otter Point (28 hectares). These areas have extremely high ecological value, as well as high amenity value, and could potentially be incorporated into the Masterplan at a future date.

Mayo County Council, NPWS and Coillte have agreed under a joint Memorandum of Understanding (2021) to work closely together so that the management of both the Council and Coillte lands, respectively, will complement each other, with a view to creation in the future of a national Moorehall Nature Reserve.

1.2.1 Masterplan Process

This document comprises the Masterplan for Moorehall Demense and Lough Carra, south of Carnacon, Co. Mayo. It sets out:

- An overview of the natural, cultural and built heritage assets of Moorehall, detailing the importance of each asset within the context of developing visitor experience opportunities throughout the masterplan area.
- An analysis of existing user activities and identification of potential opportunities based on best practice internationally.
- Strategic proposals for the sensitive and phased development and restoration of the site:

Prior to the publication of this Draft Masterplan, a number of studies were carried out to inform the approach:

- Community Consultation was carried out in June 2019 at the Carnacon Community Centre and Carnacon National School. Where appropriate, responses received have been included.
- Heritage assets on the site were recorded and appraised in detail.
- A Bat Survey including radio tracking was undertaken in 2019 (SLR, with NPWS).
- A report was completed by the Vincent Wildlife Trust (McAney, 2018) for the National Parks and Wildlife Service on the challenges and opportunities for the lesser horseshoe bat at Moore Hall. The accompanying recommendations are being fully incorporated into the Masterplan.

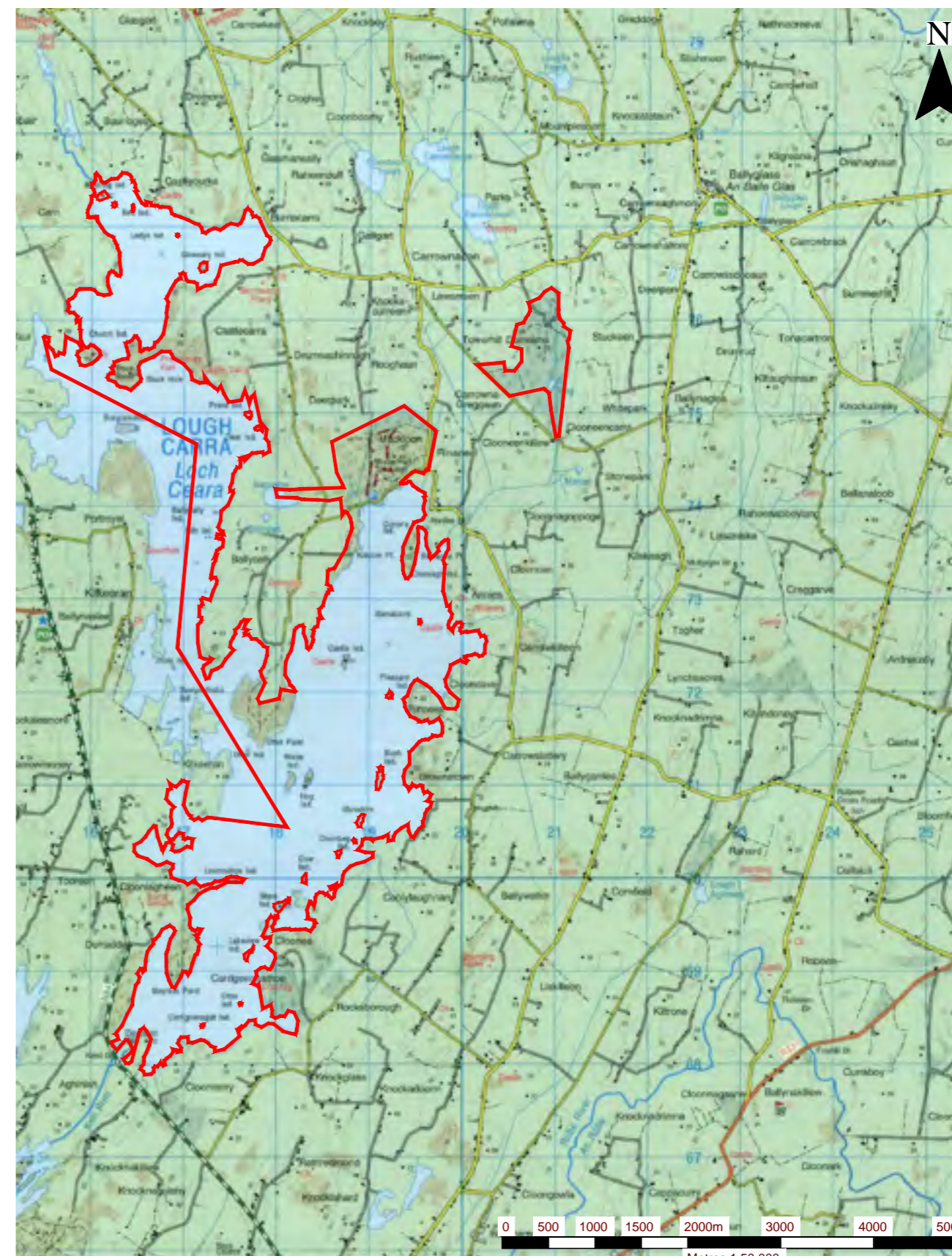


Figure 1 The Masterplan Boundary



The Quay at Moorehall on the shores of Lough Carra



Potential woodland recreational opportunities at Moorehall

1.3. Strategic Environmental Assessment (SEA) for the Draft Masterplan

SEA is a process for evaluating, at the earliest appropriate stage, the environmental consequences of implementing plan/ programme initiatives prepared by authorities at a national, regional or local level or which are prepared by an authority for adoption through legislative means. The purpose is to ensure that the environmental consequences of plans and programmes are assessed both during their preparation and prior to adoption. The SEA process also gives interested parties an opportunity to comment on the environmental impacts of the proposed plan or programme and to be kept informed during the decision making process.

In Ireland, the European Directive (2001/42/EC) on the Assessment of the Effects of Certain Plans and Programmes on the Environment (the SEA Directive) was transposed into national legislation in Ireland by the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (S.I. 435/2004).

The requirement for SEA applies to a plan or programme which is:

- prepared for tourism;
- sets the framework for future development consent of projects listed in Annex I or II to Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment, as amended by Council Directive 97/11/EC(a)
- in view of the likely effect on sites, has been determined to require an assessment pursuant to Article 6 or 7 of the Habitats Directive. The Draft Moorehall Masterplan may provide the opportunity for a decision-making framework for future development consent of projects listed in Annex II to the EIA directive. Relevant Annex II Projects referred to in Article 4(2)) include marinas, as well as permanent campsites and caravan sites, where the number of pitches would be greater than 100. A formal SEA process has accompanied the Draft Moorehall Masterplan.

1.4. The Habitats Directive

The Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) forms the basis for the designation of Special Areas of Conservation. Similarly, Special Protection Areas are classified under the Birds Directive (Council Directive 2009/147/EEC on the Conservation of Wild Birds).

Collectively, Special Areas of Conservation (SAC) and Special Protection Areas (SPA) are referred to as the Natura 2000 network. In general terms, they are considered to be of exceptional importance for rare, endangered or vulnerable habitats and species within the European Community.

Under Article 6(3) of the Habitats Directive an Appropriate Assessment must be undertaken for any plan or project that is likely to have a significant effect on the conservation objectives of a Natura 2000 site. An Appropriate Assessment is an evaluation of the potential impacts of a plan or project on the conservation objectives of a Natura 2000 site, and the development, where necessary, of mitigation or avoidance measures to preclude negative effects.

Article 6, paragraph 3 of the EC Habitats Directive 92/43/EEC ("the Habitats Directive") states that:

"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public".

An aerial photograph of a rural landscape. In the foreground, a large, rectangular stone ruin, likely a church or abbey, sits in a green field. The ruin has several arched openings and is surrounded by a low stone wall. To the right of the ruin, a small cemetery with several headstones is visible. In the middle ground, there are green fields, a road, and a small white house. In the background, a large body of water, Lough Carra, stretches across the horizon. The sky is blue with some clouds. The text "2.0 Moorehall and Lough Carra: What Makes them Special?" is overlaid on the left side of the image in a white, sans-serif font.

2.0 Moorehall and Lough Carra: What Makes them Special?

2.0 Moorehall and Lough Carra: What Makes them Special?

The vision for the Moorehall Masterplan is informed by the area's high quality environment and unique characteristics - by what makes these places special and attractive to visitors. Sustaining authentic and exceptional features lies at the heart of the Masterplan, which will allow key features and their significance at both Moorehall and Lough Carra to be fully identified and protected.

The vision for Moorehall and Lough Carra is informed by the unique complex of cultural and natural assets, set within a high quality environment and landscape of significant amenity potential on the shores of the lake. These include (Figure 2):

- 1. Wildlife & Protected Species** – The presence of the internationally important lesser horseshoe bat, its favourable habitats and high quality natural environment in the environs of Moorehall.
- 2. Rich Cultural and Built Heritage** – The engaging history of the Moores and their association with the political and cultural renaissance of the emerging Irish state, within a rich historic built environment.
- 3. Lough Carra & its Setting** – Moorehall on the shores of Lough Carra, its unique cultural, geological

and ecological significance (part of the candidate UNESCO Joyce Country and Western Lakes Geopark). Lough Carra is an internationally important wetland system, supporting an array of habitats and species listed in the EU Habitats and Birds Directives.

- 4. The Enchanting Forest** – located within a mixed woodland, with recreational offerings for both residents and visitors in the demesne and the wider area of Lough Carra.
- 5. Proximity to People & Places** – located close to several ecclesiastical and heritage sites, attractive towns and quaint villages, along the proposed Westport/Cong 'Lost Treasures' Trail.

Figure 2 Moorehall & Lough Carra: What Makes it Special?



© Alamy/ebma1/blickwinkel

2.1 Protected Wildlife – Lesser Horseshoe Bat at Moorehall: an internationally significant site

The range of the protected Lesser Horseshoe Bat in Ireland is mostly limited to six western counties - Cork, Kerry, Limerick, Clare, Galway and Mayo, although the population of south Mayo/ north Galway is believed to be a sub-population of the national population. Moorehall and its environs, with its broadleaved and mixed woodlands, provide an internationally important site for the Lesser Horseshoe Bat. This specie of bat is a critical element in the 'story of Moorehall'.

2.1.1 The Lesser Horseshoe Bat in the ruins of Moorehall

The presence of the protected lesser horseshoe bat in the ruin of Moorehall and its associated structures was first recorded during the mid-1980s when a national bat survey was undertaken by NPWS (O'Sullivan, 1994) and it has been recorded there on an almost annual basis for the last 33 years. Only one other Irish lesser horseshoe bat roost can claim such a constant monitoring record, namely a building owned by Coillte in south Kerry that is used as a hibernation site.

The two main roosting areas onsite at Moorehall are:

(i) The basement of the ruined house is primarily used as a winter hibernation site, although horseshoe bats are present here in small numbers throughout the year.

(ii) A two-storey, stone built, slate-roofed barn (or granary). It is located a short distance to the northwest of the ruined house, formerly part of the estate farmyard, and is the summer maternity site.

The range of the lesser horseshoe bat is extensive at Moorehall, extending through the surrounding woodlands and to the courtyard and farmyard, as well as roosts at neighbouring Tower Hill. All of these habitats must be considered holistically in the future conservation management of the Moorehall demesne, Towerhill and Lough Carra as a whole, and aligned with the conservation objectives for the species (see below).

The lesser horseshoe bat

The lesser horseshoe bat (*Rhinolophus hipposideros* *Bechstein*) (EU Habitats Directive species code 1303) is protected by European legislation through its listing on Annex II and Annex IV of the EU Habitats Directive (Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora). In Ireland, the species is also protected under the Wildlife (Amendment) Act, 2000.

Although lesser horseshoe bat has declined in many European countries, Ireland is considered a stronghold for the species (Marnell et al., 2009). Of the nine species of bat known to be established in Ireland, the lesser horseshoe bat is the only member of the Rhinolophidae; the eight other species belong to the Vespertilionidae family. Lesser horseshoe bats differ from the latter in that they have a number of folds of skin in the shape of a horseshoe around their nostrils called a noseleaf, with which it projects its echolocation call. Lesser horseshoe bats hang freely by their feet and wrap their wings around their bodies when at rest. They feed close to the ground, gleaning their prey from branches and stones. They often carry their prey to a perch to consume, leaving the remains beneath (Kelleher and Marnell, 2006).

Summer roosting sites are often in the attics of old or derelict buildings. The bats are faithful to a roost site and will return to the same site each year. Hibernation sites are typically caves, souterrains, basements and icehouses (O'Sullivan, 1994; Kelleher, 2004).

Lesser horseshoe bats forage on flying insects predominantly in deciduous woodland and riparian vegetation normally within a couple of kilometres of their roosts (Bontadina et al., 2002; Motte and Libois, 2002). The bats rely on linear landscape features

(e.g. treelines, stonewalls and hedgerows) to navigate and commute from roosts to feeding sites and they are reluctant to fly out in the open (Schofield, 2008).

Lesser horseshoe bats are sensitive to disturbance and normally do not occupy the same buildings as humans. Loss of roosting sites due to deterioration or renovation of old buildings, loss of commuting routes linking roosts to foraging sites and unsympathetic management of foraging sites are the major threats to this species (McAney, 1994; McGuire, 1998; Roche, 2001).

In Ireland, the population is estimated at 12,791 individuals with the long term population trend direction identified as increasing¹. However, despite this trend the overall conservation status of lesser horseshoe bat has been most recently assessed as 'Inadequate and deteriorating' due to decline in habitat, and consequently in range².

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

A site-specific conservation objective aims to define favourable conservation condition for a particular habitat or species at that site. The maintenance of habitats and species within Natura 2000 sites at favourable conservation condition will contribute to the overall maintenance of favourable conservation status of those habitats and species at a national level.

Favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable.

The favourable conservation status of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.³

1 The Status of EU Protected Habitats and Species in Ireland, Species Assessments, Volume 3 (Department of Arts, Culture and the Gaeltacht, 2019)

2 The Status of EU Protected Habitats and Species in Ireland (Department of Culture, Heritage and the Gaeltacht, 2019)

3 NPWS (2018) Conservation Objectives: Moorehall (Lough Carra) SAC 000527. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.



2.1.2 Research on Lesser Horseshoe Bat at Moorehall

A report on the lesser horseshoe bat at Moorehall by the Vincent Wildlife Trust (VWT, McAney 2018) for NPWS⁴ noted that the lesser horseshoe bat prefers broadleaf woodlands and needs a mosaic of landscape

features, such as hedgerows, treelines and stone walls to fly along. It avoids open landscapes and urban and intensely farmed areas. In summer it uses old, unoccupied buildings that have relatively large openings through which it can fly. The lesser horseshoe is the only bat species that is consistently recorded hibernating during winter in a range of underground sites, including natural caves, mines and cellars.

Issues and Opportunities

The Lesser Horseshoe Bat is particularly prone to negative impacts from roost disturbance and changes to, or loss of, commuting routes and preferred foraging habitats.

Due to its highly targeted echolocation calls, it relies far more heavily on linear landscape features to navigate its way across the countryside than do other bat species.

To maintain its bearings, this bat will religiously follow hedgerows, treelines, forest edges, watercourses, deep drainage ditches and fences and even single tree branches and strands of fencing wire to commute between roosts and foraging areas. Alteration or removal of such features can result in serious impacts on this species.

The Vincent Wildlife Trust report (McAney 2018) references the challenges being faced by the bat population, as well as potential issues and opportunities as the area is developed. The report

looked in particular at the implications for the horseshoe bat colony of the restoration of Moore Hall House and associated structures. However, the report identifies the need for conservation of the building, noting issues of water ingress, building stability and temperature control: "it is not realistic to assume that the ruin will survive in its present state for another 95 years without some remedial work being undertaken to preserve it", and described a number of potential opportunities for both enhancement/ creation of new roosting sites.

Potential impacts on the colony by developing Moore Hall as a recreational and tourist attraction were also identified, such as security and disturbance through introduction of noise and artificial light. The McAney report also highlighted the potential for educational opportunities at Moorehall, stating that the Lesser Horseshoe Bat, by hanging openly in its roosts, is an ideal species for creating awareness about bats because it can be presented to the public using video cameras placed within the roosts.

Bat conservation is at the heart of the Masterplan, and all recommendations in the McAney report are incorporated within the plan. All potential impacts will be scrutinised in detail and a precautionary approach will always be taken in relation to any development that may impact on the bat colonies at Moorehall.

There is a superb opportunity to develop an outstanding Interpretative Centre about lesser horseshoe bats, their roosts, night flights, breeding habits and wider ecology at Moorehall, to build public understanding of these fascinating creatures and their place in Ireland's natural world. Only when people understand nature will they place a true value on the conservation of the species.

4 McAney, K. (2018). *The Lesser Horseshoe Bat at Moorehall: A Report prepared for National Parks and Wildlife Services.*

People knew that animals were nocturnal but they didn't really know what they did because they couldn't see it... they must feel that the natural world is important and valuable and beautiful... and a pleasure!

David Attenborough

As well as building understanding of the ecology of the bats, the following thematic opportunities were also highlighted in the VWT/ McAney report:

The Lesser Horseshoe Bat: bat of the Irish Literati

The lesser horseshoe bat has an uncanny link with the history of Irish literature and politics. Moorehall, home to an internationally important population of the bats, was the home of the internationally respected writer George Moore. Moorehall is not, however, unique in this respect because the species is also present at:

- Ross House, Moycullen, Galway – home to Violet Martin of Somerville & Ross
- Thoor Ballylee, Gort, Galway – home to W.B Yeats
- Garryland Wood – at Coole Park, Gort, Galway – home to Lady Gregory
- Curraghchase House, Limerick – home to Aubrey de Vere
- Glin Castle, Limerick – home to Desmond John Villiers Fitzgerald the 29th
- Parknasilla Hotel, Sneem, Kerry – holiday destination of George Bernard Shaw
- Derrynane House, Caherdaniel, Kerry – home to Daniel O'Connell

The Lesser Horseshoe Bat thus creates an additional link between George Moore and other major literary figures in Ireland and represents a unique selling point for the enhancement of Moorehall as a visitor experience.

The Lesser Horseshoe Bat: bat of the Aristocracy

When the first systematic surveys of bats were undertaken in Ireland in the early and mid-1980s, the Lesser Horseshoe Bat quickly earned the title of 'the bat of the aristocracy' because it was repeatedly discovered roosting in mostly derelict and abandoned castles, tower houses and manors that had once been the stronghold of the Irish landlord class. None of the other famous houses in the west of Ireland that have a visitor experience have yet to present the story of the landlord class with that of the Lesser Horseshoe Bat, yet their history is interlinked.

2.1.3 International Examples of Bat Conservation & Education

International examples of excellent bat education and learning experiences include the following projects:

- ✓ **Devon Greater Horseshoe Bat Project**
www.devonbatproject.org

The use of live or recorded footage of normally unseen bat behaviour is a major feature of a conservation and educational project currently underway in Devon in the UK called the Devon Greater Horseshoe Bat Project that brings together a number of partners, including the local authority, schools, statutory nature conservation body, community groups, NGOs, commercial entities and the farming community.

A wide range of events are organised, including bat talks and walks, bat friendly gardening, outdoor learning conferences and exhibitions. The involvement of the local community and landowners is a key element in conservation measures.

- ✓ **Podkowiec+ Project, Poland**
www.podkowiecplus.pl/en/

The potential for educational opportunities at Moorehall are exemplified by the Polish EU LIFE project Podkowiec+. This project is focused on key interpretive opportunities for bat focused themes and on promotion of understanding about bats, their habitats and place in nature. https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4589

The Castle's website provides a virtual reality taster of the tour of the castle: zamekwisnicz.pl/?lang=en

The Moorehall experience could learn from these projects and adopt best practice in education through use of remote technologies to observe bat behaviour exciting night bat walks, training in citizen science observations, and so on.

Bat Conservation at Moorehall & Lough Carra: The Opportunity

- (i) **There is a clear opportunity to improve the conservation status of the lesser horseshoe bat and other species at Moorehall. An ambitious programme of positive conservation measures, as part of this Masterplan, may be activated early in the implementation phases, through:**

- ✓ Development of a range of positive conservation measures at Moorehall, aligned with the objectives of the Moorehall SAC and clearly articulated actions for enhanced conservation of key habitats at the House, courtyard, farmyard and wider environs at Towerhill. These measures will be 'front loaded' and activated within an agreed timeframe as detailed in the Implementation Plan (see Section 8.0).
- ✓ Conservation measures will be implemented through a Conservation Management Plan for the bat colonies and will be delivered independently of other works that may occur on-site, but may be incorporated into conservation plans for the buildings, including (but not limited to):
 - Restoration/enhancement of the basement: proposals will integrate the hibernation requirements of the bat colony and will recognise the limitations on the timing of any works. The latter may be incorporated into a larger conservation plan for Moorehall, but will be delivered irrespective of conservation measures for the main building. Restoration/enhancement measures will address water ingress; structural integrity of the basement; maintenance of all flight paths to Room 6; re-plastering of ceilings where required; the installation of bat boxes as alternative roosts prior to and during any construction work; and use of passive detectors as part of a year-long study of the horseshoe bats to provide information on their activities in advance of any works.
 - Enhancement of the barn/granary: additional access and security measures will be delivered, with a detailed plan to develop the entire farmyard for bat conservation. Proposals will recognise the limitations on the timing of any work during the sensitive breeding season. Recreational walks will be diverted away from the farmyard and buildings, and this area will be developed solely as a refuge for bat species.
 - Retention and enhancement, including security measures, for the internal underground passage.
 - Retention and enhancement, including security measures, for the external underground passage.

- Reroofing of Moore Hall House: reroofing of the main house would address water ingress into the basement, which in time will lead to the deterioration of the winter roosting site. In 2019, one of the arches in the basement began to collapse; it is believed that water ingress is a contributing factor. Also, a new roof on the ruin of the House could provide new roosting opportunities for bats. Such a proposal will have to be developed gradually and will integrate the hibernation requirements of the bat colony, recognising the limitations on the timing of any works.
- Provision of new underground hibernation roost;
- Provision of new overground hibernation roost;
- Protection and enhancement of existing commuting routes, in particular developing and enhancing commuting routes between Moorehall and Towerhill;
- Installation of monitoring equipment (incl. cameras) and data loggers into roost sites (to monitor temperature, humidity & noise); and
- ✓ Articulation of clear measures to support bat conservation in the gradual restoration of the historic forest environment over the coming decades and retention of linear features such as hedgerows.
- (ii) **There is a also key opportunity to weave stories of bat life and their habitats into a cultural and historical narrative of the site, with conservation, education and understanding of these extraordinary creatures at the heart of the masterplan, through:**
- ✓ Development of a nature-based, educational interpretative centre at Moorehall, centred on the presence of the lesser horseshoe bat (that has not been exploited elsewhere in Ireland). This would promote understanding about the bats and their habitats, as well as the need for conservation of this highly significant site.
- ✓ Promote unique selling points linking the presence of bats to the Big Houses of the Irish aristocracy and the associated literary revival, linked to the story of the Moore Family of Moorehall.
- ✓ Explore how best international interpretative practice could be applied as a visitor experience at Moorehall, with particular reference to education and active engagement with local communities, schools and farmers in conservation of the lesser horseshoe bat at this internationally important site.



George Moore No copyright



George Henry Moore's winning horse, Coranna
mayo-ireland.ie

2.2 Rich Culture and Built Heritage – Moorehall and the Moore Family

The archived papers of Colonel Maurice Moore include a nine-word telegram dated February 1, 1923, sent by the land steward, James Reilly. The clipped text announced the shocking news that Moorehall had been burnt to the ground the previous night in an arson attack by anti-treaty Irregulars during the Irish Civil War: *“Moorehall house burned down last night. Nothing saved. Reilly.”*

The fatal telegram drew life at Moorehall to a close and bookended the story of four generations of an extraordinary Mayo family whose lives had intertwined with significant periods of modern Irish and European history.

2.2.1 The Fortunes of George Moore

The history of Moorehall begins with patriarch George Moore who was born in 1729 at his parents' home of Ashbrook near Straide, Co. Mayo. His life story is an inspirational tale of good fortune, business acumen and hard work which made him a very wealthy man. In 1765, he married Katherine de Kilkelly, a Spanish woman of Irish descent whose ancestor had fled Ireland as part of the Flight of the Wild Geese in the previous century. The couple had four sons who were named John, George, Thomas and Peter, each of whom was born in Spain.

George Moore returned to Ireland, aged 55, and following the sale of property in Spain in 1784 for the sum of £250,000, purchased lands at Muckloon, Ballycally and Killeen in County Mayo from Mr. Farragh McDonnell.

Moore chose Muckloon Hill overlooking Lough Carra as the site of his new house. This was in spite of assertions that the lands were cursed and should never be built upon. According to local lore, following the murder of Brian Orbsen, the King of Connaught in the early 5th century, the king's trusted druid Druithliú fled to Muckloon Hill to seek refuge. He was, however, hunted down and put to death on the shores of the lake.

Moore chose pragmatism over superstition and began building Moorehall at Muckloon in 1792. And on completion in 1796, his new house would be the centrepiece of an estate of over 12,000 acres.

The Children of George Moore

John Moore

George Moore's eldest son, John, is memorialised by a plaque mounted on the entrance gates to Moorehall. The inscribed marble reads, *“Moorehall 1792-1923 – In memory of John Moore first President of Ireland and the men of this parish who gave their lives for Ireland in the rising of 1798. Erected by Maurice G. Moore, California, USA.”*

John Moore (1767–1799), was educated in France and became a lawyer. With the rebellion of 1798, he returned to Mayo, where he and numerous Moore tenants joined with the French revolutionary General Humbert and 1000 French troops who had landed at Killala. The General marched his soldiers and the Irish Pikemen to Castlebar where they would rout the opposing Irish Militia forces in a battle that would become known as 'The Races of Castlebar'.

During celebrations, John Moore was inaugurated as the first 'President of Connaught'. Thus, he was the first President of an Irish republic, albeit for a very brief interval. He was captured by the English Lord Cornwallis, and although initially sentenced to death, his sentence was later commuted to deportation. He died in Waterford in 1799, but his body was exhumed in 1962 and brought home to Castlebar, where he was buried with full military honours.

Another plaque at the entrance to the path to Kiltoom Graveyard commemorates the positive acts of George Moore and the Moore family during this period. Its words, chosen by George Moore's grandson Rory Moore read, *“Kiltoom burial place of the Moores of Moorehall. This Catholic patriot family is honoured for their famine relief and their refusal to barter principles for English Gold.”*

George Henry Moore MP

George Henry Moore, nephew of John Moore, served as Member of Parliament (MP) for Mayo, was leader of the Independent Irish Party and a supporter of tenants' rights.

George Henry was well known for horse racing and his well-trained stud of hunters, the stables for which were located to the back of Moorehall's walled garden. Famous steeds were *Coranna*, winner of the Chester Cup in 1846, and *Croaghpatrick*, the winner of the Stewards Cup at Goodwood in 1861.

During the Great Famine, Moore purchased livestock for his tenants, using money from his major Chester Cup win. Significantly, in one of the counties worst hit by the famine, none of his tenants starved or were evicted and as the famine got worse it was said that Moore gave grazing lands to the people and placed others directly under his care on his own estate at Moorehall.

George Henry was also father of the writer George A. Moore and the politician Maurice George Moore.

The Novelist George Augustus Moore

George Henry Moore and his wife, Mary Blake of Ballinafad House, had five children, one of whom was the celebrated novelist, George Augustus Moore, born in 1852.

In 1868, he and the Moore family moved to London where he was introduced to the city's galleries by the painter Jim Browne, and in 1873, he moved to Paris where he was exposed to famous artists and writers. George's image would be captured by the Impressionist, Edouard Manet, in 1879.

Moore's writing was inspired by the works of Emile Zola and his realistic novels included *A Mummery Wife*, *A Drama in Muslin* and *Ester Waters* to name a few. On returning to Ireland in 1901, he lived at Ely Place off Stephen's Green in Dublin and associated with many figures of the Irish Literary Revival including

Lady Gregory, Douglas Hyde and William Butler Yeats. His work, *The Untilled Field*, published in 1903, is hailed as the first modern Irish short story. His fictional autobiography, *Hail and Fairwell*, captured daily life at Moorehall.

He died in London in 1933 and his ashes were returned to Mayo. Accompanied by Moore's sister, Nina, and brother Maurice, his friend Oliver St John Gogarty rowed his ashes to their resting place on Castle Island in Lough Carra.

Senator Colonel Maurice Moore

George Augustus Moore was the elder brother of Senator Colonel Maurice Moore who was born in 1854. Maurice Moore served in South Africa with the Connaught Rangers during the Boer War and was later appointed as the Dáil's first envoy to South Africa. His private papers, which are held in the National Library's manuscript collection, include the telegram of 1923 that told of the catastrophic fire at the family's country home.

Maurice Moore resided at Moorehall with his wife, Evelyn Anne Handcock of Canantrilla Park, Tuam, their young family and household staff during the early years of the 20th century.

The 1901 and 1911 census records the names of the Moore family, including the name of son Ulick Augustus, who, when serving as a Lieutenant with the Connaught Rangers, was killed at St. Emilie, France in 1918. Their older son Maurice, known better as Rory, emigrated to Santa Barbara in the USA and later erected the gateway plaque at the entrance to Moorehall and worded the inscribed tablet at the entrance path to Kiltoom Graveyard in 1953.

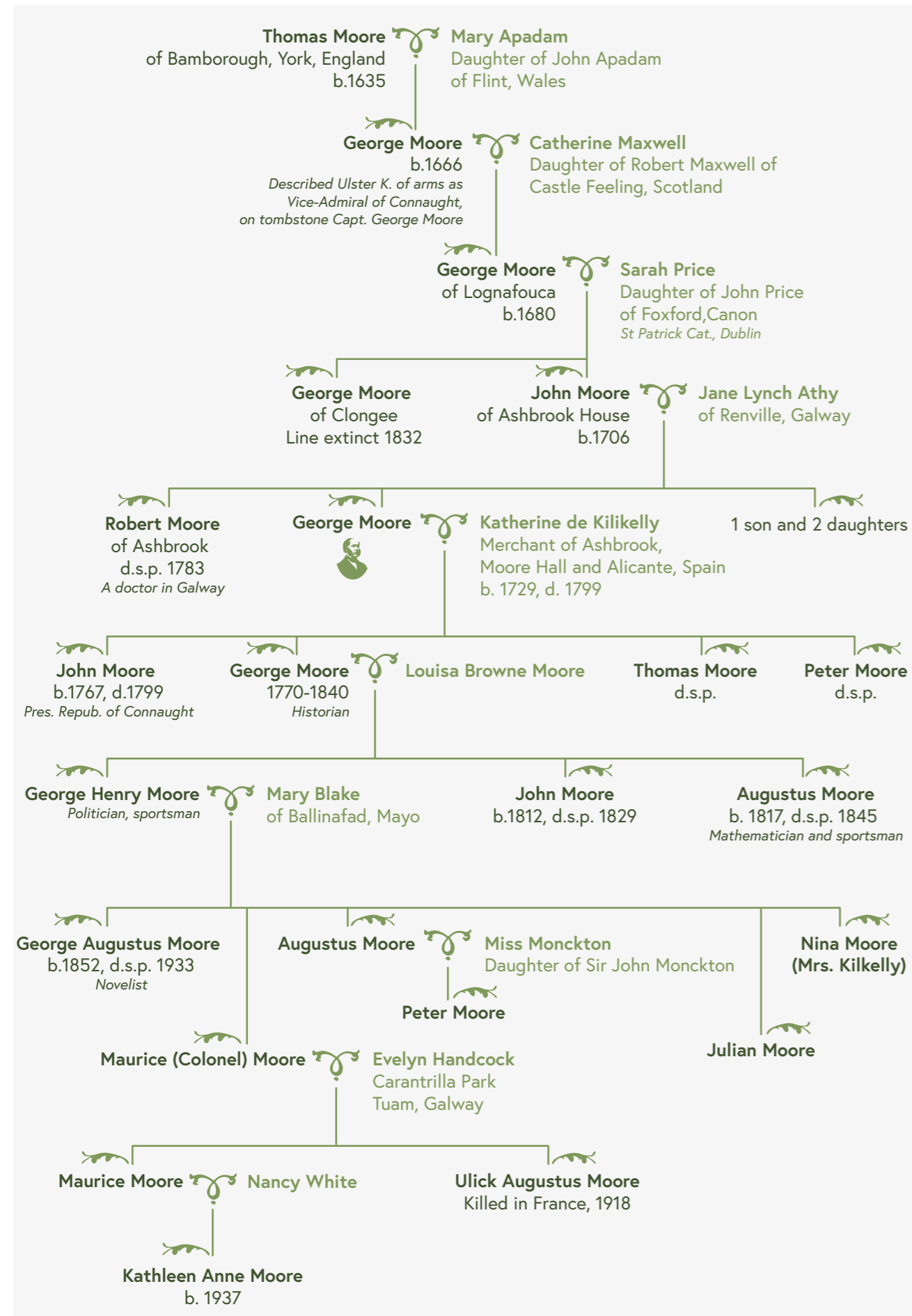
A family tree of the Moore Family, dating from the 17th to the 20th century, is presented in Figure 3.



Moore Family mausoleum at Kiltoom Point with motto *'Fortis cadere cebere non potest'*

Figure 3 The Moore Family Tree

Source: The Moores of Moorehall (Joseph Hone, 1939)



The overgrown ruins of Towerhill 'Big House', June 2020

© Mayo County Council

2.2.2 Context of the Country House

Moorehall was built at the time of the Ascendancy when the Irish countryside was transformed by a network of estates and demesnes. This country house at Muckloon Hill was just one of several large houses lying within the environs of Castlebar, Claremorris, Balla and Ballinrobe. Its neighbours in the wider locality included Towerhill Demesne to the northeast; Newbrook to the east; Ballinafad, Carnacon, Thomastown and Mount Pleasant to the north; and Clogher House to the northwest.

The families of many of these houses socialised together and often intermarried, as was the case of the Moores of Moorehall and the Blakes of Ballinafad. The Blakes were also connected by marriage to Towerhill. By the strengthening of bonds, families such as the Blakes and Moores increased and consolidated their lands and status, protected one another and maintained power within society.

But Moorehall was not just a house of local or regional standing, it was a residence of national importance and its owners were part of the upper echelons of Irish society.

Through the generations, Moorehall received and entertained many notable guests, as noted in an article in the *Western People* on February 15, 1995. The piece states that during the time of George Moore the historian, the house was "*the Great Catholic big house of the West,*" and over the course of its lifetime, hosted visitors including the novelist Maria Edgeworth, Cardinal Wiseman, the Fenian leader Jeremiah O'Donovan Rossa, and a series of artists and patriots.

Figure 4 The Historic Landscape (Ordnance Survey map, 1839)



Sketch of the historic details of the Moorehall Demesne Inscription on the main gate

2.2.3 The House and Demesne

Moorehall was built over a four year period from 1792 to 1796 for George Moore of Ashbrook, a well-connected Catholic entrepreneur who had returned to Ireland following the repeal of the majority of the Penal Laws. The house's Neoclassical design has been attributed to John Roberts, a Waterford-based architect, who is understood to have designed a similar mansion called Tyrone House in County Galway.

Built on elevated ground, Moorehall became a landmark within the surrounding demesne. Its carefully chosen site commanded spectacular views of Lough Carra and its shoreline to the south. The first edition Ordnance Survey map of 1839 provides a good insight into how the lakeside property would have looked (Figure 4).

The map shows the footprint of the residence with its tetrastyle porch and the partially enclosed rear yard. The principal façade enjoyed an uninterrupted view southwards to the lake and was approached by a number of meandering avenues and paths that curved their way through the grounds from entrances to the north, south and east. To the east of the house was the walled garden which provided food for the household and would have served as a retreat for quite walks. The circular-plan dovecot, a feature of many Irish houses of the day, is shown at the southeastern corner of the garden.

Just to the north of the garden was an enclosed stable yard, whilst the farmyard was set away from the house to the northwest. The farmyard comprised a series of yards with a number of agricultural buildings. And as is shown within the series of Ordnance Survey maps, significant structural changes were made to the layout and buildings of the farmyard during the later 19th century.

A study of the historic maps of the Ordnance Survey reveals another structural change that took place during the second half of the 19th century.

The servants' tunnel to the rear of the house post-dates the construction of Moorehall, the domestic yard and its outbuildings. It was added as an afterthought to conceal passing estate workers and animals as they moved between the farmyard in the west and the stables in the east.

Another building shown on the Ordnance Survey maps is the former privy (or toilet block), which was mentioned by the writer George Moore in his fictional autobiography, *Hail and Farewell*. The rectangular building still stands just to the west of the ruined house, but it has lost its hipped slate roof and is in a poor state of repair. Of particular interest to the visitor is the latrine channel which runs in an east-west direction through the building. This channel begins at the house and would have carried waste from the kitchen quarters, through the privy, towards the turlough below.

Moorehall in the mid-19th Century

It has been estimated that 90% of the population of County Mayo subsisted on the potato by the mid-19th century. The repeated failure of annual crops during the Great Famine of 1845-1848 had a most grievous impact on the county's people. The incumbent, George Henry Moore MP, is remembered as a man whose actions saved the lives of many during the Famine.

In 1846, Moore's horse Coranna won the Chester Cup in England and his winnings of £17,000 allowed him to contribute to Famine relief efforts. He, along with the Marquess of Sligo and Robert Blosse, a landowner from Balla, chartered a ship to import Indian corn from America. The 4,000 tonnes of maize landed at Westport Quay in July 1847, and although it was not as nutritious as the potato, it saved many of Moore's own tenants from starvation.

Moorehall in the 20th Century

At least 275 of Ireland's 'Big Houses' were destroyed by fire during the politically turbulent 1919-1923 period. The majority of properties were owned by Anglo-Irish families, but a number, like Moorehall, were in Irish Catholic ownership.

Moorehall was set alight on the 1st of February 1923 by Irregulars, who opposed the Moore family's pro-Treaty position following Irish partition. The fire destroyed the building and many heirlooms, including book collections, liturgical items and artworks that had originally been brought by George Moore from Alicante.

An article in the Connaught Telegraph of February 10, 1923 states that, "rare and valuable furniture [had] perished," and that, "the mansion was for a time occupied by South Mayo forces, and used as training ground." The same article states that in 1798, "A proclamation declaring the Republic [of Connaught] was issued at Moorehall," and that "the table on which it was signed" may have also perished in the fire.

The fire of 1923 rendered the house a shell and marked the beginning of end of the Moore family's association with Moorehall. The estate was eventually sold to John O'Hare, from County Down, who ran a timber business locally and his advertisements appear in the regional newspapers of the day.

In 1950, land belonging to the Blakes at Towerhill and the demesne at Moorehall were purchased by the Department of Lands for forestry. Subsequently, in 1953, the Department offered for sale one acre of land between the northern shore of Lough Carra and a public road, including a boat pier and the ruins of an old boathouse.

Moorehall – The French Connection

General Jean Joseph Humbert of the emergent Republic of France led an invasion of Ireland in 1798 to support the Irish quest for independence. General Humbert appointed John Moore as President of the

Republic of Connaught in 1798, a republic founded on the values of the French Revolution and which inspired the foundations of the Republic of Ireland. Moorehall therefore enjoys a unique position in the shared history of Ireland and France and provides County Mayo with a close connection to France that continues to evolve across social, political and business levels. In recent times, this connection has been demonstrated through cultural partnerships that celebrate shared European values and promote peace and reconciliation.

Moorehall in the 21st Century

Carnacon Community Council has been intrinsically involved in the recent history of Moore Hall and has long promoted the development of the site as a cultural heritage attraction at the heart of the community. The Community Council led proposals inter alia for the restoration of the Walled Garden and commissioning of sculptures in the estate. The group has worked with Mayo County Council and the South West Mayo Development Company to secure funding streams for both community and cross border projects in restoration of key elements of the estate, and is fully supportive of the strategic proposals in the Masterplan.

Moorehall & Family: The Opportunity

- ✓ Restoration of the significant built heritage at Moorehall in accordance with the objectives of the Conservation Management Plan.
- ✓ Development of a world class Visitor Centre to showcase the fascinating and complex history of the Moore family at Moorehall; to present a rich tapestry of stories, linked to the complex role and symbolism of the 'Big House' in Ireland's history, as well as landownership, famine, revolution and the flowering of the Irish literary renaissance.
- ✓ Location for strengthening our long lived Franco-Irish relations, advancing new transnational partnerships, peace and reconciliation measures.
- ✓ Through sensitive thematic interpretation, provide a unique glimpse into the life of the Catholic landlord families, their relationship to their tenants and surrounding communities, and their influence in shaping modern Ireland.
- ✓ Sensitive design of a Recreational Park of imagination in Moorehall demesne in accordance with the objectives of the Conservation Management Plan:
 - Themed walks 'in the footsteps of the Moores' throughout the demesne;
 - Re-planting of the historic walled garden; and
 - Sculptural trails reflecting aspects of the natural heritage.



Lough Carra at evening, looking west to Lough Mask and the Partry Mountains © Mayo County Council

2.3 Lough Carra, its setting and beauty

Lough Carra is the uppermost lake of the extensive Lough Mask/ Lough Corrib system that forms a major part of the "Great Western Lakes" of Ireland, draining a huge catchment in counties Mayo and Galway.

Although relatively small compared to Loughs Mask and Corrib, Lough Carra's 1,500 hectares is the best example of a shallow, marl⁵ lake in Western Europe.

The lake is a well-known wild brown trout fishery and has good populations of brown trout, perch and pike. Recent genetic research indicates the pike may have been in the lake for around 8,000 years, since the early post-Glacial period. All of Lough Carra is also a wildfowl sanctuary.

The lake is of considerable ecological and conservation importance, and forms part of the Lough Carra/ Mask Complex Special Area of Conservation (SAC 1774). Lough Carra supports a diverse mosaic of limestone and wetland habitats and species, including the following listed in Annex 1 and 2 of the EU Habitats Directive: hardwater lakes, dry heaths,

Great Fen-sedge (*Cladium mariscus*) fen and alkaline fen, limestone pavement and alluvial woodland. In addition to the fen habitats, there are widespread reed swamps, wet grassland and some freshwater marsh communities around the lakeshores, as well as orchid rich calcareous grassland, lesser horseshoe bat and otter populations.

Lough Carra is also designated as a Special Protection Area (SPA 004051) under the EU Birds Directive. According to the SPA site synopsis (NPWS, 2014), Carra has a highly indented shoreline (over 69 km in length), fringed by a diverse complex of limestone and wetland habitats and includes many small islands.

The site is of special conservation interest for the Common Gull and the islands in Lough Carra have traditionally supported nesting gulls. A survey in 1993 recorded Common Gull (72 individuals) and Black-headed Gull (252 individuals). The site was surveyed in 1999 as part of the Seabird 2000 Survey and 65 pairs of Common Gull and 100 pairs of Black-headed Gull were recorded.

The site also supports wintering populations of a number of species including Wigeon (67), Gadwall (26), Teal (63), Mallard (140), Shoveler (38), Pochard (33), Tufted Duck (133), Goldeneye (64), Little Grebe (14) Great Crested Grebe (12) and Lapwing (243) – all figures are mean peaks for four of the five winters in the period 1995/96 – 1999/2000.

⁵ Marl is the calcium carbonate deposit on the lakebed.

2.3.1 The Joyce Country and Western Lakes (candidate) Geopark

The concept for a Joyce Country and Western Lakes Geopark emerged in 2008 when a voluntary group identified that the rich geological heritage of the region could potentially be a catalyst for broad-based enterprise and social development in this very rural area. A project team has been established by the Geological Survey of Ireland, working with local agencies and communities, to secure UNESCO status for the project by 2023⁶.

Geoparks help to tell stories of geological, social, cultural and economic history of specific areas. They also help to promote and secure broad-based, sustainable social and economic development in their specific territories. Elevated to UNESCO status from 2015, Geoparks have equal status to World Heritage sites, but do not carry any legislative weight and do not impose restrictions on people, landowners, farming or industry.

Stretching between Leenane and Loughs Mask and Corrib, the Joyce Country is named after a Joyce clan who settled there in the 14th century. The rest of the proposed 1000 km² Geopark takes in the majority of the western lakes of Corrib, Mask and Carra.

Inland lakes and their shorelines provide very attractive environments and opportunities to be active beside or on the water. These experiences sit at the heart of motivations for many visitors. Lough Carra and the marketing of the wider 'lake district' designated as Joyce Country and Western Lakes Geopark provides opportunity for Moorehall to be positioned as part of a more strategic regional cluster of outdoor attractions and regeneration.

It is worth drawing some comparisons between the proposed Joyce Country Geopark and the Lake District National Park in England, which is a hugely popular destination for tourists with its stunning natural landscapes and associations with Wordsworth and Beatrix Potter.

2.3.2 Spiritual Sites along Shoreline

There are several important heritage and ecclesiastical sites near the shores of Lough Carra.

Both Ballintubber and Burriscarra Abbeys are important heritage sites and noteworthy from a visitor experience development perspective.

Burriscarra Augustinian friary was originally founded in 1298 for the Carmelites, by Adam de Staunton. The Abbey was abandoned by the Carmelites in the early 15th Century and taken over by Augustinian friars. The remains are quite extensive, and comprise the church, sacristy, east range and parts of the west range, domestic buildings where the friars lived and worked. The site is currently maintained by the Office of Public Works (OPW).

Ballintubber Abbey was founded by King Cathal Crovdearg O'Connor in 1216, close to a old Patrician church and well where Saint Patrick is said to have baptised his converts in this district. With the passage of years the Abbey flourished; however, it was partially burned in 1653 by the Cromwellian army. The Abbey has seen a number of phases of restoration since 1879 through to the 1990s. A recently proposed restoration of the East Wing of Ballintubber Abbey will house a spiritual and visitor experience.

There is scope to develop seasonally appropriate, guided boat trips by NPWS officers working with local ghillies with intimate knowledge of the lake, to present the ecology, geology and built heritage of Lough Carra, offering a wonderful outdoor visitor experience.

⁶ www.gsi.ie/en-ie/programmes-and-projects/geoheritage/projects/Pages/Joyce-Country-and-Western-Lakes-Geopark.aspx

⁷ landedestates.nuigalway.ie/LandedEstates/jsp/estate-show.jsp?id=498

⁸ www.archaeology.ie/monument-of-the-month/archive/castlecarra



Church Island and causeway, Lough Carra © Mayo County Council

Lough Carra: The Opportunity

As part of this Masterplan, there is a prime opportunity to improve the conservation status of protected species and habitats at Lough Carra through an ambitious programme of positive conservation measures:

- ✓ Development of positive conservation measures for protected habitats and species, aligned with the objectives of Lough Carra SAC and Lough Carra SPA and the Lough Carra Life Project
- ✓ Defined measures will be developed in consultation with the Lough Carra Catchment Association (LCCA) and in support of the Lough Carra Life Project.
 - Measures may include:
 - Installation of a number of nesting rafts on the lake to create better nesting opportunities for ground nesting lake birds, in particular, the Common Gull;
 - Vegetation management on selected small islands and rocky shoals to create better nesting opportunities for ground nesting lake birds, in particular, the Common Gull;
 - Calcareous grassland management, including management of scrub encroachment on important grassland areas, especially on the lakeshore;
 - Woodland management on the islands, including removal of exotics and invasive species and the opening of the canopy to the develop the ground and shrub layers;
 - Installation of an array of varied bird boxes to support breeding avifauna in and around Lough Carra.

The natural history of Lough Carra and the Great Western Lakes complex presents both nature-based tourism and educational opportunities to appreciate the sensitivities of these sublime ecosystems.

- ✓ Enhanced visitor experiences through well-presented thematic interpretation and seasonally appropriate, guided eco-tours of Lough Carra and its natural heritage. This would allow the public to appreciate these environments and their importance in enhancing biodiversity, clean waters and ecologically intact habitats.
- ✓ Guided boat trips to explore the natural heritage and castles/ churches of Lough Carra at Castle Bourke, Burriscarra Abbey and Church Island, among others.
- ✓ Develop a concept that firmly places Moorehall within the proposed Geopark, exploring themes of geology and landscape, the interlinking of natural and cultural histories, and communities in a hinterland of historic towns and villages, similar to those of the Lake District in England.
- ✓ Creation of local enterprise opportunities in provision of trained guides, interpretation, licensed boat trips and related visitor servicing such as foods, accommodation and sustainable transport.



Family walking in the woods at Moorehall



Enchanted Forest

2.4 The Enchanted Forest

The combined Moorehall and Lough Carra masterplan area contains woodlands with extremely high ecological value, as well as significant recreational and amenity value.

It consists of a number of deciduous and mixed woodland blocks of different maturity, as well as some blocks of conifer plantations. Forestry paths, within the Moorehall estate, some of which follow historical routes from the 1839 plan, allow access into different parts of the estate, including the surrounds of Moorehall House and to the lakeshore at Lough Carra.

The site is currently popular as a recreational amenity for local walkers and has a designated 3km loop walk as well as access to the beautiful shoreline at Lough Carra, as part of a woodland walk to Kiltoom Point. This zone is also host to the family mausoleum within a small walled enclosure in the woods.

There are several opportunities to explore in development of longer walking and nature trails, including connectivity to Doon Forest, an area of 'enchanted' native woodlands on the northern shores of Lough Carra, in concert with the landowner). Opportunities abound in state owned lands at Lough Carra, subject to landowner consents and maintenance of the conservation status and objectives. Lands at Towerhill Wood (68 hectares), owned by Coillte, would provide links to the proposed Lost Treasures Trail and heritage sites at Ballintubber Abbey and beyond. Coillte own lands at Derrinrush Wood at Otter Point (28 hectares) which could facilitate an extended shoreline walk past Kiltoom Point with stunning viewpoints across Lough Carra. Coillte also own Cloonlee Wood (c. 40 hectares) of predominantly commercial conifer plantation, with areas of semi-natural broadleaf woodland along the lake shore, within the Lough Carra/Mask Complex SAC. This forest has significant potential for biodiversity and ecological management, as well as recreational development. Based on the aspirations of the Conservation Management Plan for the site, there may be scope to design a Native Woodlands Scheme to enhance overall forest biodiversity at Moorehall.

Enchanted Forest: The Opportunity:

- ✓ Development of a strategic partnership between Mayo County Council, NPWS and Coillte for the future integrated management of the forest estate to optimise the conservation of bat habitats at Moorehall and Lough Carra, as well as sustainable visitor experiences;
- ✓ Opportunities for an extensive network of linked and looped walking and recreational trails within the masterplan area of Moorehall and Lough Carra estate;
- ✓ Walking and nature trails through state owned lands at Lough Carra, with potential extensions (subject to landowner consents) to lands at Towerhill Wood (linking to the proposed Lost Treasures Trail); Derrinrush Wood at Otter Point to facilitate an extended shoreline walk past Kiltoom Point; and Cloonlee Woods along the lake shore, within the Lough Carra/Mask Complex SAC. These forests present significant potential for biodiversity and ecological management, as well as recreational development.
- ✓ Design a Native Woodlands Scheme to enhance biodiversity at Moorehall and Lough Carra.
- ✓ Sensitive design of an imaginative Recreational Park within the wider forested demesne, including:
 - Network of themed walking trails to enjoy the site's complex natural and cultural heritage (e.g. bats, family lore, plants and tree species);
 - Sculptural trails based on aspects of the estate's nocturnal wildlife (bats, owls, badgers etc);
 - Family-friendly adventure activities such as tree-top walks and discovery activities at Kiltoom and Derrinrush Wood (in collaboration with Coillte).
 - Connectivity to Doon Forest, an area of 'enchanted' native woodlands on the northern shores of Lough Carra, in concert with the landowner.
 - Development of walks to Towerhill demesne to the Old Mill within the estate, with links to guided nocturnal bat walks.
 - Development of camp sites and outdoor recreation at Cloonlee Woods.
 - Amphitheatre within Moore Hall estate.



Servants' tunnel

2.5 Proximity to People & Places of Interest

Moorehall's rural location has helped to protect its pristine environment, but also has implications for its attractiveness as a visitor destination. For the site to attract visitors from beyond the local area, there must be great places to stay with plenty to do nearby. Moorehall is relatively close (<20km) to a number of Mayo's larger towns and to a series of heritage attractions. However, for the site to attract visitors from beyond the local area, there must be a range of great places to stay and eat, with plenty to do nearby. Positioning of Moorehall as a key attraction will require ongoing investment in the surrounding towns and villages to act as portals to the wider offering, as well as building linkages with other significant cultural and heritage attractions in the wider catchment of the site.

2.5.1 Surrounding Towns & Villages as Visitor Bases

A tourism destination town is defined as a town in which a visitor can spend an overnight, and in which a cluster of products, services, activities and experiences are offered. It incorporates various stakeholders and intangible elements, such as its character, image and identity, and can function as a touring base for visitors. By providing public transport from such hubs, it is also possible to make the experience easier to access, particularly from an overseas visitor perspective.

Fáilte Ireland: Guidelines on Destination Towns (2019) refer to the Lake District as a case study and state that:

'Towns and villages in and around the Lake District emphasise their role as a gateway to the stunning natural environment, with carefully managed parking and transport, supporting visitor information and a range of nature-based activities that are co-ordinated in conjunction with the National Park.

The towns understand that visitors, in addition to finding practical supports for their exploration of the landscape, also expect to be able to enjoy the historic ambience and heritage of the towns (e.g. Beatrix Potter and Wordsworth histories), and to access a range of town-based services and experiences. Heritage, in a wide variety of forms, is preserved and reinterpreted for a modern age as part of the overall experience.'

In tandem with the development of Moore hall, it is important that measures are introduced to improve the performance of 'visitor hubs' in closest proximity to the site. Ballinrobe, Castlebar and Carnacon have the potential to perform as hubs and anchor the visitor experience.

Ballinrobe

Ballinrobe is 15km from Moorehall, the closest settlement and the largest urban area in South Mayo. The town dates back to 1390 and is situated along the main Galway to Castlebar road at the junction of the N84 National Secondary Road and the R334 Regional Road. The Mayo County Development Plan 2014 – 2020 identifies a number of objectives for the town's regeneration / preservation and enhancement.

The plan also identifies significant opportunities to develop cultural, tourist and amenity facilities from existing structures such as Cranmore House and former Military Barracks, as well as continued support for services, retail and community facilities.

There are opportunities to further develop an amenity base for citizens and to increase tourism potential particularly with respect to amenity uses and tourism potential from fishing, angling, horse racing, cycling and musicals. In order to secure these opportunities significant investment is required to address the high vacancy rate in buildings.

In February 2019, Mayo County Council received €825,000 for town regeneration in Ballinrobe. Plans include improving the overall built heritage within

Ballinrobe, with a focus on the restoration of key historic buildings, engineering and industrial heritage. Initial restoration work will focus on Ballinrobe Market House (courthouse building), Ballinrobe Library and the Bowers Canal. Transport links between Ballinrobe and Moorehall should be developed to improve accessibility, including green infrastructure, and widen the benefit of investment at both locations.

Carnacon Village

Carnacon is a small and quaint village, situated just 2km north of Moorehall. The village has a small shop, pub, school, community centre and GAA club, with limited visitor services. Guesthouse accommodation is provided by Ballinafad House locally.

There is a very active local community in the village and surrounds, with strong historical links to Moorehall and the people who lived there. Many local people remember stories of their parents and grandparents working in the Hall, farm or gardens, providing one of the more interesting aspects of the estate's story. Such stories could be recorded and included in the proposed Visitor Centre to provide a highly compelling and authentic record of life at Moorehall. As well as a small heritage museum in the Community Hall (with fascinating maps, photographs and local memories of the Big House), Carnacon could be supported to deliver a range of visitor services such as café, B&B / self-catering accommodation, bike hire and guides from the village to Moorehall.



Hughes of Carnacon is a traditional Irish rural pub, 2km from Moorehall

Castlebar

Castlebar is c. 20km to the north of Moorehall, and lies along the main N5 feeder route into the county from the east, at its confluence with the national N84 and N86. It is also linked by railway to Westport and Dublin.

Castlebar is home to a number of attractions, including the National Museum of Ireland, Country Life at Turlough House. The town offers visitors a range of accommodation, high order shopping, music, cinema and theatre experiences, as well as extensive recreational facilities. Mayo County Council recognises that there is a major opportunity to further develop the tourist profile through the promotion of Castlebar as an attractive market town rich in heritage, for its strategic location in Co. Mayo, for its wealth of historic buildings, and as an attractive centre for visiting the wider Western Region. The continued success of festivals such as the Wild Atlantic Words Festival and the Castlebar International Walking (4-day) Festival can be further developed.

2.5.2 Ballintubber Abbey & Tóchar Phádraig

The Tóchar Phádraig is an ancient pilgrim path that starts at Ballintubber Abbey and finishes at Croagh Patrick, Mayo's 'holy mountain'. Originally, it was part of the chariot road that went from Rathcruachan, the seat of the Kings and Queens of Connacht, to Aughagower and Cruachan Aille, as Croagh Patrick was called in Pre-Christian times. In the centuries after St Patrick's time, pilgrims traversed the pathway to the holy mountain and over time it became known as Tóchar Phádraig or St Patrick's Causeway.

When Ballintubber Abbey was built in 1216, a hostel was emplaced for pilgrims. This hostel (ruins still exist) incorporated a place of ritual washing and cleansing, called Danchora or the 'bath of the righteous'.

After 1588, the tochar went into decline as a public road and later ceased to be used as a pilgrim path. It was restored as a Pilgrim Path in 1987 and hundreds walk annually on pilgrimage from the Abbey to Croagh Patrick. It was recently announced that Ballintubber Abbey's Culture and Heritage Visitor Centre will receive €2,677,352 for the restoration of the east wing of the Abbey, a major addition to service the needs of visitors to the area.

2.5.3 Lost Treasures Trail

The Lost Treasures Trail is a proposed 50km walking trail linking Ballinrobe, Moorehall and Ballintubber, between the end points of Cong and Westport. It will link a number of cultural and spiritual sites, as well as high-quality landscapes along the route. The exact route has yet to be agreed, but it will capitalise on existing trails where possible, including the Tóchar Phádraig from Ballintubber to Croagh Patrick and the Bowers Walk in Ballinrobe.

The concept is for a trail from Westport to Cong that has spiritual, cultural and historical "treasures" along the route. Many of the following "treasures" were "almost lost" through the passage of time and changing culture.

- Moorehall ...the (almost lost) Big House;
- The (almost lost) abbeys at Murrisk, Aughagower, Cong, Burricarra and Ballintubber;
- The threatened (almost lost) wildlife...which will be afforded greater protection;
- The Bowers Canal in Ballinrobe is an example of (almost lost) industrial heritage
- The dry Cong Canal – a unique (almost lost) feature that was never completed.

Moorehall will thus be one of many special Places of Discovery along the proposed "Lost Treasures Trail".

People & Places: The Opportunity

In tandem with the development of Moorehall, opportunities exist:

- ✓ Introduce measures to improve the performance of 'visitor hubs' in closest proximity to the site. Ballinrobe and Castlebar have particular potential to perform as hubs to anchor the visitor experience and core servicing;
- ✓ The nearby village of Carnacon has a direct historical linkage with the Moorehall estate and has the potential to offer visitor services such as authentic storytelling, food, guiding and bike hire.
- ✓ Develop linkages to other heritage sites and Places of Discovery along the 'Lost Treasures Trail' through the beautiful landscapes of rural county Mayo.

- ✓ Develop greater collaboration between a cluster of attractions in the area of Moorehall, and with complementary attractions in the wider region such as Wild Nephin National Park, Westport House and the National Museum of Ireland, Country Life.
- ✓ In linking towns and villages, the network of rural roads and associated treelines and hedgerows are important in terms of connectivity for bats. Sustainable transport options should be considered as a priority to reduce pressure on bat habitats and foraging.



Lough Carra orchids



Lough Carra shoreline

The opportunities to make Moorehall and Lough Carra a truly special conservation-based visitor destination based on key natural and cultural attributes are summarised in Table 1 below.

Table 1 Opportunities arising from Moorehall and Lough Carra's special attributes

Synopsis	Opportunities
Conservation of Management for lesser horseshoe bat colonies and related habitats	
There is a key opportunity to introduce concrete conservation actions to protect and enhance the habitats and species at Moorehall and Lough Carra. Such measures will create opportunities for educational and nature-based tourism, weaving stories of bat life and their habitats into a cultural and historical narrative of the site, while promoting understanding of these extraordinary creatures.	<p>Implementation of concrete conservation measures for Moorehall and Lough Carra, aligned with the objectives of the SAC/ SPA, with clear actions for enhanced conservation and future management of bat habitats and ecology;</p> <p>Articulation of clear measures to support bat conservation in the gradual restoration of the historic forest environment over the coming decades and retention of linear features such as hedgerows.</p> <p>Development of a novel, nature-based Interpretative Centre at Moorehall centred on the presence of the Lesser Horseshoe Bat.</p> <p>Promote unique selling points linking presence of bats to the Big Houses and the Irish literary revival.</p> <p>Explore how best practice of educational attractions for bat ecology could be incorporated into a tourist experience at Moorehall, linked to local community and landowners inputs.</p>
Cultural history of Moorehall & Moore Family	
Moorehall was built in the 17th century by the Moore Family, who lived in the house for four generations. The family were involved in politics, land, literature and the military, and made major contributions to the Ireland of their time. The historic 'Big House' was burned in 1923 during the Civil War, and with the farm and garden, currently lies in ruin. The family were highly supportive to the local community during the Famine and are remembered positively to this day.	<p>Restoration of the significant built heritage at Moorehall in accordance with the objectives of the Conservation Management Plan</p> <p>Development of an Interpretative Centre to showcase the fascinating and complex history of the Moore family at Moorehall; the unique role of the 'Big House' in Irish history; stories of famine, revolution and literary renaissance.</p> <p>Through sensitive thematic interpretation, provide a unique glimpse into the life of the Catholic landlord families, their relationship to their tenants and surrounding communities, and their influence in shaping modern Ireland.</p> <p>Develop a Recreational Park with a network of themed walks; restored walled garden and sculpture trail within the walled demesne.</p>

Continued over...

Synopsis

Natural History & Beauty of Lough Carra

Moorehall demesne lies on the northeastern shores of Lough Carra, a protected lake ecosystem, and part of the great Western Lakes complex of Galway and Mayo.

Lough Carra provides a beautiful backdrop to the original landscaped gardens and woodlands, as well as a key recreational amenity for local bathing, fishing and boating.

Opportunities

Development of positive conservation measures for protected habitats and species, with clearly articulated actions for enhanced conservation of the site.

Defined measures will be front loaded, within an agreed timeframe, as detailed in the Implementation Plan.

Specific conservation measures through a Conservation Management Plan for bats, delivered independently of other works as part of the Masterplan.

Clear thematic interpretation and seasonally appropriate, guided eco-tours of Lough Carra would allow the public to appreciate these environments and their importance in maintaining biodiversity, clean waters and intact habitats.

Boat trips to explore the natural heritage and castles of Lough Carra.

Develop a concept that firmly places Moorehall within the proposed Geopark, exploring geology, landscape, natural and cultural histories; communities, similar to those of the Lake District in England.

Creation of local enterprise opportunities for trained guides, interpretation, licensed boat trips, visitor servicing: foods, accommodation and sus-transport.

The Enchanted Forest

The Moorehall estate, comprising 95 hectares of mixed coniferous and broadleaf woodlands, has been operated by Coillte since the late 1980s for commercial forestry.

Moorehall and Lough Carra comprise varied woodland habitats, with a network of paths and trails throughout, with potential linkages to nearby heritage sites along planned long distance trails, cycleways and boating.

Develop strategic partnership between Mayo County Council, NPWS and Coillte for the integrated management of the forest estate to optimise conservation of bat habitats at Moorehall and Lough Carra, as well as sustainable visitor experiences;

Opportunities for an extensive network of linked and looped walking and recreational trails within the Moorehall and Lough Carra masterplan area;

Walking and nature trails through state owned lands at Lough Carra, with extensions (subject to landowner consents) to Towerhill Wood (and proposed Lost Treasures Trail); Derrinrush Wood at Otter Point to facilitate an extended shoreline walk past Kiltoom Point; and lakeside Cloonlee Woods within the Lough Carra/ Mask Complex SAC. All present opportunities for biodiversity and ecological management, as well as recreational development.

Design a Native Woodlands Scheme to enhance biodiversity of the estate.

Sensitive design of an imaginative Recreational Park in the forest demesne:

- Network of themed walking trails to enjoy the site's complex natural and cultural heritage (e.g. bats, family lore, plants and tree species);
- Sculptural trails based on nocturnal wildlife (bats, owls, badgers etc);
- Family-friendly adventure activities such as tree-top walks, discovery activities at Kiltoom and Derrinrush Wood (in collaboration with Coillte).
- Connectivity to Doon Forest, an area of 'enchanted' native woodlands on the northern shores of Lough Carra, in concert with the landowner.
- Development of walks to Towerhill demesne to the Old Mill, with guided nocturnal bat walks.
- Development of camp sites and outdoor recreation at Cloonlee Woods.
- Amphitheatre within Moore Hall estate.

Synopsis

Proximity to People & Places

Visitors to Ireland love to connect with local people, places and stories. Significant potential exists to weave the stories of Moorehall, Carnacon, Castlebar and Ballinrobe into the delivery of compelling visitor experiences. Central to this is the delivery of excellent visitor services in the surrounding towns and villages, creating opportunities for enterprise and community linked to Moorehall's development.

Opportunities

Introduce measures to improve the performance of 'visitor hubs' in closest proximity to the site. Ballinrobe and Castlebar have particular potential to act as vibrant visitor hubs and anchor the visitor experience and servicing;

The nearby village of Carnacon has a direct historical linkage with the Moorehall estate and has the potential to offer visitor servicing such as authentic storytelling, food, guiding and bike hire.

Develop linkages to other heritage sites and Places of Discovery along the 'Lost Treasures Trail' through the beautiful landscapes of rural county Mayo.

Develop greater collaboration among nearby attractions and regional attractions such as Wild Nephin National Park, Westport House and the National Museum of Ireland, Country Life.



Exploring the old walled garden

3.0 Tourism Context



3.0 Tourism Context

Understanding the tourism context, market demands and visitor expectations are critical in framing the development of a Nature Reserve within the context of a nature-based and cultural tourism experience at Moorehall in the coming years.

3.1 Tourism in Ireland

Tourism is one of Ireland's most important economic sectors and is one of the largest indigenous industries, supporting an estimated 260,000 jobs in communities all around the country. The tourism market comprises visitors from overseas and domestic markets who visit to enjoy Ireland's landscape, people and culture.

2018 marked eight years of consecutive growth in overseas visit numbers, further underlining the value of the sector to the economy. 2018 was the best year to date for Irish tourism, attracting just over 9 million international visitors, spending €5.3 billion, with

growth recorded across all top performing markets of GB, USA, Germany and France. Tourism continues to hold its position as one of Ireland's key industries.

This growth reflects a global growth in travel and success arising from Ireland's efforts to penetrate large overseas markets, and its strategy of developing 4 key national propositions which includes the Wild Atlantic Way. The latter is a critical feeder of visitors into the coastal west of Ireland, including Mayo, since the brand was launched.

Table 2 Recent Tourism Performance – Ireland (2017-2018)

Visitor Origin	Visitor No.	Revenue (€ Bn)
Overseas (2018)		
United Kingdom	3,467,000	€1.024
Mainland Europe	3,507,000	€1.844
North America	1,955,000	€1.723
Other Areas	651,000	€0.599
Total Overseas	9,580,000	€5.190
Northern Ireland (2017)	1,315,000	€0.371
Domestic (2017)	9,626,000	€1.900
TOTAL	20,521,000	€7.461

Source: Fáilte Ireland – Overseas visitor data from 2018; Domestic and Northern Ireland from 2017, the latest available.

Table 3 Regional Tourism Performance 2017

	Galway	Mayo
Overseas Tourist Numbers	1,673,000	324,000
Overseas Revenue	€589m	€78m
Domestic Visitors	1,024,000	503,000
Domestic Revenue	€247m	€108m
Total Revenue	€836	€186

The latest year for which regional and county data is available from Fáilte Ireland research is 2017. Regional data for the Western region, including Galway and Mayo, show:

3.2 Current Market Analysis – Co. Mayo

The tourism sector in county Mayo is an important component and driver of the economy. It contributes over 186 million annually to the local economy and generates over 800,000 visitors. Of these, in 2017, 324,000 were overseas visitors. It supports employment of over 6,000 either directly or in service and supply industries that support the tourism industry.⁹ Mayo is the seventh most popular county in Ireland in terms of visitation while its neighbouring county of Galway is an important feeder county, ranking as number two destination after Dublin.

Destination Mayo: A Strategy for the Future Development of Tourism in Co. Mayo 2016-2021 (December 2015)

The Vision for Mayo's tourism proposition is that of a world class destination providing highest quality customer services and with an array of compelling visitor attractions/activities offering immersive experiences. Central to this vision is the proposition of 'Wild Mayo' reflecting the county's wild and pristine landscapes, extensive national park, rich natural and cultural heritage and suitability for adventure and outdoor activity.

∴ **Destination Mayo 2016-2021 highlights Mayo's reputation as a tourism destination, offering a diverse, wild and pristine natural environment, distinctive historical and cultural attractions and a warm visitor welcome.**

The strategy considers walking to be the county's signature activity product, with Mayo successfully positioning itself as the walking capital of Ireland.

Fáilte Ireland research suggests that walking offers the highest potential of any activity for Ireland for both domestic and overseas markets: almost a quarter of domestic holiday makers take part in hiking/walking or visiting national parks. The majority of overseas visitors undertook a walk of more than 5km (42%), with 37% undertaking a walk of less than 10km and 19% undertaking a walk of more than 10km. Only 9% were accompanied by a guide.

In a survey of behaviour and attitudes in relation to national parks and nature reserves, it was found that the most popular activity undertaken was walking/gentle exploration at 73%. Hiking was the third most popular activity at 24% and camping was one of the least popular activities undertaken at 18%.

The Destination Mayo strategy highlights the marked difference between domestic and overseas visitors to Ireland and the activities they undertake while here. Those travelling from overseas tend to engage more with Ireland's visitor attractions, exploring heritage and cultural attractions in the main, while domestic visitors spend more time taking part in activities such as hill walking, water sports, golf and cycling.

⁹ Fáilte Ireland – Every €1mn of tourist expenditure helps to support 27 tourism jobs.



Fun exploring Moorehall

The top three Tourism Products highlighted in the Destination Mayo strategy are:

1. Heritage and Cultural Visitor Attractions:

The remote and rural nature of the county has meant much of its heritage has survived intact, showcasing a rare and authentic offering that is highly attractive to overseas visitors in particular.

2. **Walking/Hiking:** Mayo has become a premier walking destination, offering a wide range of walks of varying lengths across a variety of terrains, giving walkers much to choose from.

3. **Angling:** Mayo is renowned for the quality of its fishing with considerable appeal to angling visitors due to the availability of game and sea angling product and an abundance of productive lake, river and sea angling fisheries compared to other regions in Western Europe. The Great Western Lakes – Carra, Mask and Corrib – provide excellent angling opportunities for predominantly brown trout.

The strategy also identifies gaps in provision, particularly with regard to the accommodation base, suggesting opportunities exist for innovative high end and budget accommodations.

Significantly in the context of the Moorehall Masterplan, Mayo is identified as a county that is well placed to meet the growing demand for long-distance and spiritual trails such as the Camino de Santiago, with a number of spiritual and pilgrim trails in existence, all connected to St Patrick. Mayo needs to

continue to develop interesting and accessible walking trails with related services to maintain its position as Walking Capital of Ireland.

The Destination Mayo 2016 – 2021 strategy sets out the following relevant objectives:

- Development of spiritual/ heritage themed clusters/ trails;
- Development of walking, cycling and water trails;
- Development and promotion of fishing and angling;
- Development and promotion of a *Wild Mayo* tourism offering, with responsibly managed adventure and outdoor/ country pursuits.
- Plan & seek funding to develop a 'Journey of Hope' linking Croagh Patrick and Cong;
- Develop Moorehall walled garden.

The development of MooreHall as a signature experience on a long distance trail is similarly reinforced under Failte Ireland's *Clew Bay Visitor Experience Plan (2020)* which seeks to establish Moorehall/ Lough Carra as a site of cultural and historical importance, as a Nature Reserve and walking and cycling hub along a Westport/Cong trail.

The following relevant and specific actions are also stated in the 'Wild Mayo' strategy:

- Action 11 of Destination Mayo action Plan – Plan & seek funding to develop a 'Journey of Hope' linking Croagh Patrick and Cong; and
- Action 59 Develop Moorehall walled garden.

3.3 Visitor Attraction & Activity Trends – Ireland

Visitors research by Failte Ireland on the heritage and cultural visitor attractions sector was reviewed to understand visitor preferences. The segmentation of overseas and domestic visitors to Ireland shows that all segments are keen to engage in, and visit, some type of cultural attraction while on holiday (Table 4).

The research also shows that the provision of a mix of activities and 'things to see and do' are also critical in attracting both overseas and domestic visitors (Table 5).

Table 4 Visitor Attraction Visits: Domestic & Overseas (2017, %)

Activity	Domestic % engaging	Overseas % engaging
Cultural and Historical Attractions	39	68
Houses and Castles	26	41
National Parks	23	
Gardens	21	
Heritage Interpretative Centres	18	
Monuments	16	
Museums and Art Galleries	15	26

Table 5 Type of Activities would undertake while on holiday in Ireland

Activity Preferences	Overseas Markets*
Visit a National Park/Nature Reserves	1st
Walking (up to 5 kilometres)	2nd
Boat Trips	3rd
Hiking/Walking (more than 5 kilometres)	4th
Outdoor Adventure Parks	5th
Any Watersport	6th
Museums and Art Galleries	15

Source: Holiday Behaviour Deepdive 2016, for Fáilte Ireland



3.4 Market Led Approach

Priority visitor segments for overseas and domestic visitors have been identified by Fáilte Ireland in both the domestic and overseas markets, each with a different motivation, the kinds of experiences they want, associated market differentiators and the key booking channels that they use.

It is important that this Masterplan is informed by the needs of these core target markets (Table 6).

Table 6 Market Segmentation: Overseas & Domestic
Overseas Market Segments



Culturally Curious are independently minded and are interested in places of historic and cultural interest.

Typically the Culturally Curious travellers are out to broaden their mind are likely to be found exploring ancient sites, or in castles, gardens, country houses and museums.

They also enjoy connecting with nature and getting off the beaten track and love to walk, cycle or boat to explore a new place. They are typically 40+ in age and will usually travel in a couple or as an individual, but rarely in a family group.



Great Escapers want to escape and get away from it all, renewing family bonds and spending time together in a beautiful place. They feel connected to nature and want to connect with the landscape and soak up beauty but will also visit a castle or landmark.

A sense of history, of their place in the vastness of nature – they want to feel part of it – rebalance themselves and take stock of their lives, concentrating on what's important to them.

They enjoy being off the beaten track to explore the elements – stars, water etc and will take part in strenuous activities; appreciate peace and quiet, but also enjoy the 'wow factor' without too much effort.

They are typically couples in their 30s, may have young children, or couples in 40s-50s without children.



Social Energisers have a passion to experience "new things" – the more unique and exciting the better. They are looking for exciting, trendy, fun, social holidays somewhere different.

They typically want to visit the top attractions and activities, particularly if they are presented in an energetic, engaging and unusual way. Social Energisers are most likely to visit cities

They enjoy family-friendly destinations with a wide range of activities to offer nearby.

They typically are young people, and younger families and social media plays a big part in their lives.

Domestic Market Segments



Footloose Socialisers are seeking to share experiences with people they can relax and be themselves with – experiences that bring people together and enrich life in authentic and interesting surroundings – they like to go off the beaten track, try out different places, meet the locals and really get under the skin of a place. They enjoy good food and drink and tend to be interested in the history and culture of the place they are visiting.

Footloose Socialisers love the opportunity to get a weekend break with friends away from their routines and responsibilities.



Connected Families want a holiday together that offers a variety of things to see and do in a place that feels special. They enjoy doing and seeing things, but primary motivator is being able to do it together as a family.

For the parents it's all about their children being happy and enjoying themselves. They are seeking to create special memories that they can treasure, sharing experiences that they can fondly look back on in the months and years to come.

They are typically parents in their 30s and 40s with children generally under the age of ten.



Indulgent Romantics are looking for the perfect romantic hub for their holiday where they can soak up the luxury, reward themselves, be well looked after and reconnect with one another. They enjoy quick and spontaneous weekend breaks to get away from the stresses and bustle of their daily lives.

They are interested in different places and enjoy the atmosphere of new cities, particularly if they offer opportunities for shopping, pampering, enjoying great food and the little indulgences in life.

They are made up of couples and although relatively broad in terms of age profile they are more likely than average to be aged between 45 and 64 years.

3.5 Visitor Segmentation at Moorehall

If the broader Moorehall sub-region is to develop as a Mayo destination, the promise must be exceptional, whereby the offer has no other comparator across the island of Ireland. The site will require a cluster of experiences within the wider area focusing on audiences identified in Mayo County Council's Tourism Plan.

The primary target audiences for interpretation will focus for the early years on both overseas and domestic visitors, particularly the 'Culturally Curious', 'Great Escapers', 'Footloose Socialisers' and 'Connected Families', segments with a lesser focus on 'Indulgent Romantics'.

Regionally, the target audience will also include primary and secondary schools that will use a visit to Moorehall as part of their environmental and physical education – this will spread the season more broadly.

Organised tours, including actively retired groups, are also a target audience.

Addressing the needs of Domestic Audience Segments

The Moorehall Experience can potentially meet the needs of target segments of the overseas and domestic markets (see Table 6).

1. **Culturally Curious and Connected Families** – will enjoy exploring the house and gardens; learning about bats; boat trips and adventures in the enchanted forest. Wet day activities can be catered for by a Visitor Centre.
1. **Great Escapers and Footloose Socialisers** – will enjoy the outdoor mix of opportunities to explore this hidden part of the Mayo and learning of the extraordinary Moore Family and their connections to Irish history.

Specific experiences, linked to identified opportunities may be tailored to the needs of each of these segments. As the project evolves, the international market may be included as key visitor segments, interested in a unique and sophisticated experience at Moorehall.

3.6 Future Visitor Numbers at Moorehall

In 2017, Mayo received 324,000 overseas Tourist and 503,000 domestic visitors. Current trends in visitor numbers at Moorehall are unknown as access to the site is open and is currently unrecorded. It is thus challenging to predict future trends accurately – however numbers at nearby and national comparable attractions provide a good indication of what might be likely in terms of future trends (Table 7).

It is noted that in 2014, Ballintubber Abbey had 32,000 visitors; the Tóchar Phádraig attracts 8,000 (enumerated) visitors per year, while Croagh Patrick receives 120,000 visitors per year. It should be noted that figures for Ballintubber Abbey are likely to increase significantly in the coming years due to the recent funding announcement for the restoration and reconstruction of the east wing of Ballintubber Abbey as a Culture and Heritage Visitor Centre. Projections for visitor numbers to Ballintubber Abbey once works

are complete are projected to reach 80,000 per annum according to submitted plans.

Although ecclesiastical visitors are a distinctive audience, it is anticipated that these existing attractions coupled with future investment at Ballintubber, Moorehall and the linking Lost Treasures Trail could result in the region of 90,000 visitors per year for Moorehall.

It is recommended from the outset i.e. the adoption of this Masterplan, that visitor numbers are monitored at a number of key access points to the site, namely the main vehicular and pedestrian entrances, as well as locations close to the bat roosts which are part of the Special Area of Conservation.

This will provide critical baseline data for detailed site planning and management purposes.

Table 7 Visitor Numbers to Heritage Attractions

Attraction	Number of Visitors 2018 (unless otherwise stated)
National Museum of Country Life, Turlough House, Co. Mayo	116,200
Tóchar Phádraig, Co Mayo	8,000
Ballintubber Abbey< Co Mayo	32,000 (2014)
Ballycroy National Park, Co Mayo	26,000 (2019)
Coole Park Nature Reserve, Co Galway	17,000
Kylemore House & Garden, Co. Galway	561,657
Blarney Castle & Gardens, Co. Cork	480,000
Fota Wildlife Park, Co Cork	455,559
Birr Castle, Gardens & Science Centre, Co. Offaly	103,000
Curraghchase Forest Park, Co Limerick	100,000
Duckett's Grove & Walled Garden, Co Carlow	73,630
Glenveagh National Park, Co Donegal	170,000

Varied sources (NPWS, Mayo Co. Council and Failte Ireland)



Artist's impression of the treetop walkway at Moorehall

© Mayo County Council



4.0 Interpretative Framework for Moorehall

4.0 Interpretative Framework for Moorehall

A number of opportunities were identified during the review of Moorehall’s rich cultural and natural assets: what makes it special. To realise these opportunities, it is important to identify key themes and options for visitor experience development within a bespoke interpretative framework.

4.1 Interpretation Framework for Moorehall

A 'Moore Hall inspired' thematic and experiential interpretative framework has been developed to highlight the distinctive qualities of Moore Hall and to contextualise the types of experience that visitors should find there.

Three major themes that best embody the unique sense of the place were developed through the consultation process. The three themes are:



These are supported by Inspirers which colour the thematic context and activities that create meaningful experiences that will distinguish Moorehall from other areas and shape the vision for its future (Table 8).

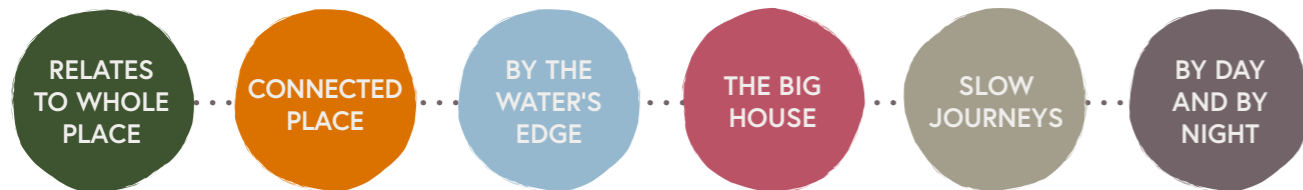


Table 8 Outline Thematic Framework for Moorehall

WILD NATURE	JOURNEY BACK IN TIME	TREASURES ALMOST LOST
<p>Priority for theme</p> <p>All visitors should leave with a sense of the vulnerability of species and habitats, and the importance of protection and nature conservation.</p>	<p>Priority for theme</p> <p>Visitors should become immersed in the past way of life through the unique stories and the built heritage of the place.</p>	<p>Priority for theme</p> <p>A place to escape on inner and outer journeys – providing opportunities for higher level experiences and search for meaning.</p>
<p>Characteristics of Theme</p> <ul style="list-style-type: none"> • Haven for wildlife and protected species • Pristine natural environment & landscapes – but vulnerable • Where land and water meet – forest, shore and islands • Peaceful sounds of nature • Geopark centred on the Great Western Lakes • Research & education • Environmental & conservation measures • Slow activity: nature based. 	<p>Characteristics of Theme</p> <ul style="list-style-type: none"> • Step back in time, the past is close • Stories of our ancestors • Gentry and Tenants – upstairs and downstairs • Literary Past • Lough Carra as an ancient place of settlement, trade and conflicts • Close to an ancient pilgrim route • Cultural changes over time • Connectedness 	<p>Characteristics of Theme</p> <ul style="list-style-type: none"> • Discovery of Lost Ireland – lost way of life • Hidden gems and treasures 'almost lost' • Thought provoking, reflective & meaningful • Spiritual • Sacred • Creative
<p>Inspirers</p> <div style="display: flex; justify-content: space-around;"> <div style="background-color: #2e75b6; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; color: white;">RELATES TO WHOLE PLACE</div> <div style="background-color: #c00000; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; color: white;">CONNECTED PLACE</div> </div>	<p>Inspirers</p> <div style="display: flex; justify-content: space-around;"> <div style="background-color: #76923c; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; color: white;">BY THE WATER'S EDGE</div> <div style="background-color: #2e75b6; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; color: white;">THE BIG HOUSE</div> </div>	<p>Inspirers</p> <div style="display: flex; justify-content: space-around;"> <div style="background-color: #c00000; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; color: white;">SLOW JOURNEYS</div> <div style="background-color: #76923c; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; color: white;">BY DAY AND BY NIGHT</div> </div>
<p>What Shape would it take?</p> <p><i>Moorehall will be a Nature Reserve that serves as a nature-based visitor attraction, where bat conservation and learning are at the core, providing a haven for enhanced protection of the species.</i></p> <p><i>The Nature Reserve will be internationally recognised as an exemplar for conservation and education.</i></p> <p><i>It will showcase best practice in conserving nature/ wildlife and innovation in raising public awareness and interest in the need for conservation measures to protect vulnerable populations.</i></p> <p><i>The Nature Reserve will present 'slow activities': guided bat walks, boat trips and educational measures, and foster local people's interest and pride in bat conservation.</i></p>	<p>What Shape would it take?</p> <p><i>An historic and cultural heritage attraction of connected sites showcasing the history of changing cultures and relationships through time (gentry and tenants).</i></p> <p><i>Visitors will be welcomed at the Visitor Centre, where they will be immersed in the past, learn about the Moore family who lived here and their contribution to the political and cultural evolution of the Irish nation.</i></p>	<p>What Shape would it take?</p> <p><i>A journey of discovery learning about lost treasures within the greater catchment area of Moorehall, Towerhill, Lough Carra and which draws on "treasures" including Moorehall's tragic past, ecclesiastical heritage for an unforgettable visitor experience.</i></p>

5.0 Key Development Issues



5.0 Key Development Issues

Addressing development constraints is a key enabling factor that will ensure the successful delivery of proposals set out in the Moorehall Masterplan.

The development of a masterplan for Moorehall has considered the site context including its history, landscape, location, access, availability of services as well as environmental sensitivity. The environmental and cultural characteristics of the site and the surrounding areas are significant and include several noteworthy designations (see Figure 5; Figure 6):

- Designation of Moorehall House as a protected structure;
- Presence of European Protected Species and Natura 2000 sites, at Moorehall as well as Lough Carra;
- Presence of a number of National Monuments on the site;
- Designation of scenic routes and highly scenic views.

While a wide variety of factors combine to influence the masterplan strategy, several key development issues will require careful consideration so that Moorehall can realise its full potential and retain its character:

- Ensuring that conservation of sensitive species

and habitats sits at the heart of the masterplan approach;

- Protection of built heritage and the historic environment;
- Ensuring appropriate restoration or development that fully considers protection of the historic and natural environment;
- Identify an integrated, sustainable and sensitive approach to woodland management among the partners involved;
- Providing sustainable access and transport solutions that recognise the site's rural location;
- Providing sustainable wastewater solutions, taking account of the lack of on-site services and the sensitivity of the surrounding environment;
- Need for improved capacity in tourism infrastructure;
- Need for community involvement, support and resourcing; and
- A sustainable operational model.

5.1 Ensuring Sensitive Species and Habitats sit at the Heart of the Approach

The shared vision for the Moorehall Masterplan will underpin effective conservation management for sensitive species and habitats within the Moorehall demesne and Lough Carra. This will enhance the site's status as a strategically important site for nature conservation and ultimately to achieve designation as a National Nature Reserve (Figure 5; Figure 6).

Moorehall and Lough Carra are unique for several reasons, but due to the presence of the Lesser Horseshoe Bats, the site is exceptional in an international context. The vision for Moorehall recognises the importance of the Lesser Horseshoe Bat and that the historic estate is part of a wider pristine and heritage-rich complex in the environs of Lough Carra. The scale of this publicly owned asset

is significant with over 500 acres of publicly owned lands, adjacent to a state owned lake. All of these lands are connected physically, thematically and in their role in supporting the ecological functionality of the wider area.

The actions and concrete conservation measures identified in this masterplan are primarily dedicated to improving the ecological functionality and to securing the conservation and enhancement of its natural heritage. In tandem, there is scope to consider its sensitive redevelopment as an attraction and amenity space for local and visitors alike. Visitors to the site will also appreciate the heritage on offer in the wider areas, which together with Moorehall, may contribute to a new, nature-focused destination.

Recommendations

- ✓ Front loading of a range of positive conservation measures with specific, actions, projects and timelines, for the enhanced conservation of Moorehall and Lough Carra designated sites. These must be clearly articulated for sustainable management, aligned with the objectives of the Natura designations.
- ✓ Relevant proposals will be subject to Appropriate Assessment procedures prior to any development.
- ✓ Adoption of the recommendations of the Vincent Wildlife Trust report on 'The Lesser Horseshoe Bat at Moorehall' (McAney 2018).

Figure 5 Wider Area: Environmental Designations and Features

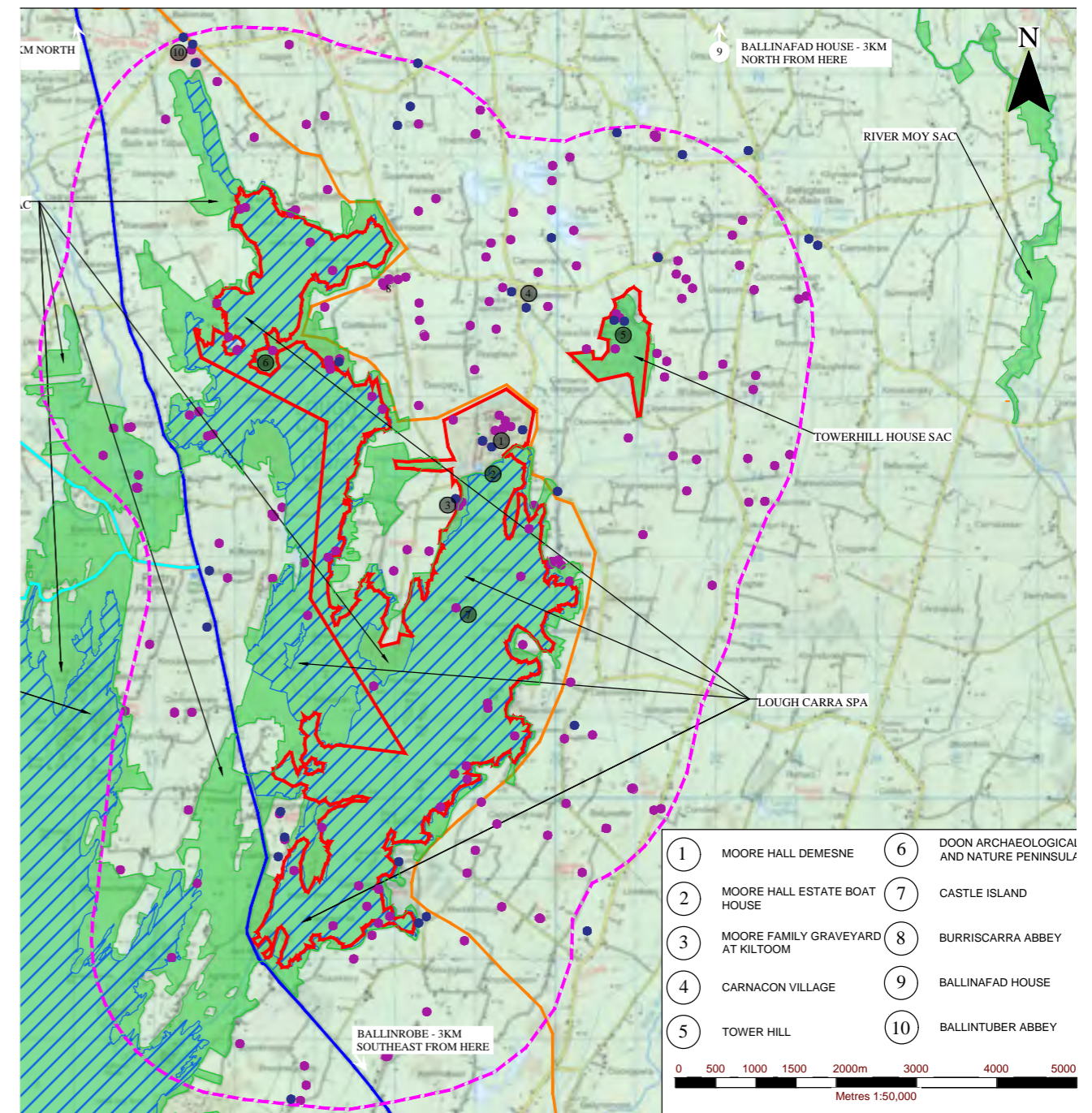
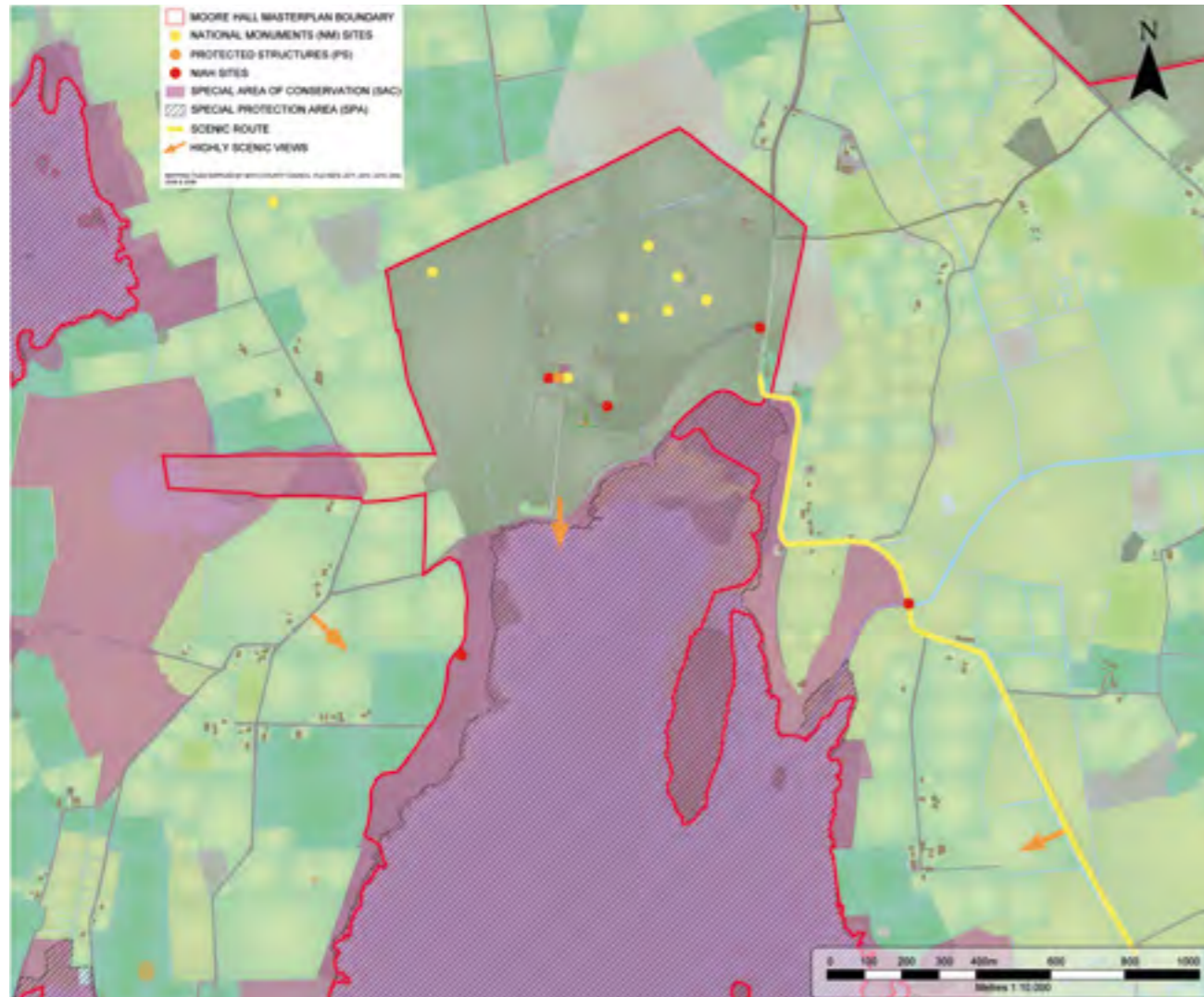


Figure 6 Moorehall: Environmental & Conservation Features



5.2 Protecting the Historic Environment

Moorehall and its historic environment have suffered at the hands of history and is unfortunately under threat from the elements and the passage of time. It is in danger of being lost if specific measures are not undertaken to conserve the fabric of the house, crumbling farmyard and walled garden, as well as the historic landscape.

Moorehall is both a National Monument and identified on the Mayo County Council's Record of Protected Structures (RPS). If a structure is included in the RPS, the protection extends to the interior of the structure; to the land in its curtilage; and to any other structures on that land and their interiors.

Moorehall House is described by the National Inventory of Architectural Heritage (NIAH) as:

'Detached five-bay (three-bay deep) three-storey over part raised basement country house, built 1792-5; dated 1795, on a symmetrical plan centred on single-bay full-height breakfront with (single-storey) prostyle tetrastyle Doric portico to ground floor; six-bay full-height rear (north) elevation. Described as occupied, 1911. Vacant, 1921. Burnt, 1923. In ruins, 1925.'

The National Inventory of Architectural Heritage evaluation of the house reads:

The shell of a country house erected to a design attributed to John Roberts (1712-96) of Waterford (DIA) representing an important component of the late eighteenth-century domestic built heritage of County Mayo with the architectural value of the composition, one recalling the Roberts-designed Tyrone House (1779) in County Galway, confirmed by such attributes as the deliberate alignment maximising on panoramic vistas overlooking Lough Carra; the compact near-square plan form centred on a Classically detailed tripartite breakfront carrying the Moore family motto ("FORTIS CADERE NON POTEST [A Brave Man May Fall But Cannot Yield]"); the definition of the principal floor as a slightly elevated "piano nobile"; the diminishing in scale of the openings on each floor producing a graduated visual impression; and the parapeted roofline.

Adjacent outbuildings (extant 1838); a polygonal walled garden (see 31310010); and the nearby "Grand Gate", all continue to contribute positively to the group and setting values of an estate having historic

connections with the Moore family.

Legislative provisions governing development that relates to a protected structure is set out in the Planning and Development Act 2000 (as amended) and in the associated Planning and Development Regulations. Further provisions in relation to National Monuments and archaeological heritage is set out under the following legislative framework:

- National Monuments (amendment) Acts 1930-2014;
- Record of Monuments and Places (RMP) established under section 12 of the National Monuments (amendment) Act 1994;
- Planning and Development Acts 2000 (and amendments);
- Heritage Act 1995;
- National Cultural Institutions Act 1997; and
- Architectural Heritage (national inventory) and Historic Monuments (miscellaneous provisions) Act 1999.

Monuments are protected under these Acts in a number of ways:

- It is recorded in the Record of Monuments and Places (RMP).
- It is registered in the Register of Historic Monuments (RHM).
- It is a national monument subject to a preservation order (or temporary preservation order).
- It is a national monument in the ownership or guardianship of the Minister for Culture, Heritage and
- the Gaeltacht or a Local Authority.

There are six sites, recorded on the Sites and Monuments Record (SMR) within the immediate vicinity of Moorehall site, including Moorehall itself (Figure 7).

¹⁰ Curtilage means the land and outbuildings immediately surrounding a structure which is (or was) used for the purposes of the structure.



Figure 7 Record of Monuments & Places

The SMR contains details of all monuments and places (sites) where there is a monument pre-dating AD 1700 and also includes a selection of monuments from the post-AD 1700 period. Of these six, three are recorded archaeological monuments (i.e. RMPs)¹¹

Archaeological features together with protected structures will be retained in situ and their landscape context either protected or enhanced. Under planning legislation, work proposed which affects a monument, which is a National Monument in the ownership or guardianship of the Minister or a local authority, or subject to a preservation order, or included in the Record of Monuments and Places then the owner or occupier undertaking the works will comply with the notification requirements under the National Monuments Acts. Planning permission will also be sought for works affecting the character of a protected structure.

Recommendations

- ✓ Design of a conservation management plan for built heritage at Moorehall.
- ✓ Survey of all historic buildings, identifying interventions for protection.
- ✓ Respect for the historic environment in all development proposals.
- ✓ Planning permission for any works affecting the character of a protected structure.

¹¹ [www.archaeology.ie/sites/default/files/media/pdf/Archaeology-RMP-Mayo-Map-\(1996\)-0034.pdf](http://www.archaeology.ie/sites/default/files/media/pdf/Archaeology-RMP-Mayo-Map-(1996)-0034.pdf)

Figure 8 Existing Landscape Vegetation Units



5.3 Sustainable Woodland Management

The existing landscape within the Moorehall Masterplan boundary consists of a number of deciduous and mixed woodland blocks of different maturity. These are essential elements in consideration of the conservation management of the bat colonies at Moorehall.

All future woodland management will adhere to the recommendations in Chapter 5 of the Vincent Wildlife Trust report on behalf of the National Parks and Wildlife Service (McAney 201¹²). These hinge on two key principles: (i) no significant decline in potential foraging habitats within 2.5km and (ii) no significant loss of linear features within 2.5km. It notes that even small changes to its habitats can have a significant impact on the colonies.

Forestry paths, some of which are following routes from the 1839 plan, allow access into different parts of the site, including the ruined Moorehall and a number of outbuildings. The approximate boundaries of the different Landscape Vegetation Units and an indication of the existing path system are shown in Figure 8¹³.

The following description of each landscape vegetation unit, provides a basis for a preliminary strategy for woodland management.

¹² See McAney, Kate (2018). The Lesser Horseshoe Bat at Moore Hall: A Report for National Parks and Wildlife Service. Vincent Wildlife Trust.

¹³ Descriptions of different Landscape Vegetation Units are based on an Ecological Survey of Moorehall, by Enviroscope Environmental Consultancy (2017), as well as aerial photography available on Google Earth (2005-2019). As the ecological survey did not cover all of the area within the masterplan boundary surrounding Moorehall House, the type and maturity of some woodland areas is estimated using aerial photography; there may therefore be some discrepancy on the ground.



Mature beech at Moorehall

Landscape Vegetation Unit 1 – Deciduous Woodland (Dominated by Beech)

There are two large blocks of deciduous woodland, which is dominated by beech (*Fagus sylvatica*), with occasional ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*) and holly (*Ilex aquifolium*). Due to the dense stands of beech, the ground flora is quite species poor.

The first of the two blocks is located mainly to the north and west of Moorehall House, but also extending a little to the south and east of the ruined building. A narrow band of this woodland extends to the west of one of the paths, all the way to the existing car parking areas beside the Lough Carra. The second deciduous woodland block is located on the western shore of the lake, extending south from the public road. According to the ecological report these woodlands were planted in the 1950's/early 1960's.

Recommendations

- ✓ These beech dominated woodland blocks may benefit from some selective felling, to allow light on the woodland floor, thereby promoting natural regeneration with a more diverse range of native species.
- ✓ Considering the age of these woodland blocks and their high amenity value, it is recommended to retain as much of these areas as possible, as part of the masterplan proposals.

Landscape Vegetation Unit 2 – Mixed Woodland (Not Felled since 2005)

There are a number of blocks of mixed broadleaf and conifer woodlands, which the aerial photography shows were not felled since 2005. The 2017 ecological survey indicates that some of these formed part of the Moorehall biodiversity area, which was surveyed by Browne in 2004 (see reference in ecological report).

Block '2a', northeast of Moorehall (refer to Figure 9) is described in the 2017 ecological survey as being "dominated by varying proportions of beech and Norway spruce" (*Picea abies*), with some locally frequent Scots pine (*Pinus sylvestris*). Four other blocks of mixed woodland were identified as not having been felled since 2005 (i.e. identified as '2b' on Figure 9), two of them further north and east of Block '2a' and one a narrow band on the northern side of the road following the shore of Lough Carra, east of the car parking area. The final block is located within the extension of the masterplan to the west towards Lake Nagovne.

Recommendations

- ✓ While these mixed woodland blocks appear to have a more open canopy, compared to the beech dominated woodland, they may also benefit from selective thinning to promote natural regeneration.
- ✓ Considering the age of these woodland blocks and their biodiversity value, it is recommended to retain as much of these areas as possible as part of the masterplan proposals.

Landscape Vegetation Unit 3 – Young Mixed Woodland (Felled and re-planted since 2005)

The majority of the woodland areas surrounding Moorehall have been felled and re-planted since 2005. Those areas marked on Figure 9 as '3a' were felled some time before April 2005 (source: Google Earth), those marked with '3b' after that date. The 2017 ecological survey states that these areas were re-planted in 2008, with a mix of oak (*Quercus* sp.), ash, birch (*Betula* sp.) and Scots pine. The majority of these areas have since developed into dense scrub woodland.

Recommendations

- ✓ These young mixed woodland blocks appear to consist of a varied, mostly native, species mix, which is developing nicely. It may however be beneficial to carry out some selective felling, in order to keep the canopy open in places, to promote continued natural regenerations.
- ✓ It may be a viable option to create a number of clearings and/or rides, thereby creating different micro-climates and increasing the amount of woodland edge habitat. This may benefit the locally occurring bat species, as it will provide additional commuting routes and feeding habitat.
- ✓ Clear-felling of larger areas of the young mixed woodland blocks is not recommended.

Landscape Vegetation Unit 4 – Conifer Plantation

Three blocks of conifer plantation were identified. One block is located between the beech dominated woodland to the front of Moorehall House and the existing car parking area (i.e. identified as '4a' on Figure 8). The second is located to the northwest of the car parking area (also identified as '4a') and the third within the northern tip of the masterplan boundary (identified as '4b'). The conifer plantation to the front of Moorehall House is described in the 2017 ecological survey as dominated by Norway spruce. The other two blocks are not covered by the ecological survey and are assumed to be similar, due to their appearance on the aerial photography. It is however possible that other conifer species are present. Both areas identified as blocks '4a' have not been felled since 2005. The block identified at '4b' had been clear felled some time before April 2005 (source: Google Earth) and appears to have been re-planted with conifers.

Recommendation

- ✓ There is little biodiversity or amenity value associated with these conifer plantations. Clear-felling and replacement planting with native species or a change of use as part of the masterplan proposals are therefore viable options.
- ✓ A narrow band of trees should be retained along the existing path (the 'Dark Road') running north from the western end of the car park towards Moorehall, as this route is used as a commuting corridor by the local bat species.



Part of Felled Area 5a, the Walled Garden of Moorehall

- ✓ Consideration should be given to the stability of a narrow band of conifers, as newly exposed edges of conifer plantations are prone to wind-throw, if only part of a plantation is removed. One solution may be to remove some of the trees facing the track first and re-planting with fast growing native species such as Alder (*Alnus* sp.), before removing the remainder of the conifer plantation, as recommended by the Vincent Wildlife Trust in their report on 'The Lesser Horseshoe Bat at Moorehall' (McAney 2018).

Landscape Vegetation Unit 5 – Areas not re-planted since felling in recent years

Two blocks were identified, which do not appear to have been re-planted since felling. The block identified as '5a' on Figure 8 incorporates the former walled garden and the area to the south of that. This area was clear-felled sometime between 2005 and 2013 and has since started to recolonise with locally occurring tree and shrub species. However, the area within the walled garden has recently been cleared again to facilitate regenerative works to create a distinctive conservation zone within the masterplan area.

The second block, identified as '5b' is located to the west of the beech dominated woodland to the west of Moorehall House. This area was clear-felled sometime between April 2015 and November 2016. The 2020 aerial photograph indicates that little natural recolonization has taken place in this area since.

Recommendations

- ✓ The walled garden and block '5b' have currently little to no biodiversity or amenity value.

Replacement planting with native species or a change of use as part of masterplan proposals are viable options.

- ✓ The value of the area to the south of the walled garden is slightly higher, as some regeneration has taken place. However, since the vegetation cover is still quite young a change of use is feasible.
- ✓ All recommended works within any of the landscape vegetation units should be "planned and carried out with the advice of a suitably qualified forester/woodland ecologist and/or the National Parks and Wildlife Service and the Forest Service", as per the recommendation of the 2017 ecological survey of Moorehall.

5.4 Sustainable Access

Moorehall is located 2km to the south of the village of Carnacon and some 250km from Dublin and just under 60km from Galway. The surrounding catchment is largely rural, with the nearest settlements of Castlebar and Ballinrobe accommodating a population of 12,068 and 3,770 respectively, as recorded in the 2016 census.

Vehicular Transport: The approach roads from the south (from Galway) and north (from Sligo including the final section via Claremorris) are substantially better in terms of carriageway width and alignment than that approaching directly from the east. The latter route is, unfortunately, that identified by Google as the most direct route from Dublin, and whilst the route is of a very high standard where comprising the M4, M6 and M17, the very latter section via



Felled Area 5b, west of Moorehall house

Hollymount has several poor sections. The alternative (northern) route, via Mullingar and Castlebar is not only shorter but generally of a much higher standard, and so should be promoted as the optimum route to the site from Dublin as far as possible in any literature.

Public Transport: There is very little in the way of any service bus/public transport provision that currently runs past the site itself.

It is noted that there is no apparent bus service presently serving Ballintubber Abbey either, but a link to this and Moorehall from, for example, Castlebar, might be more sustainable.

Recreational Access: Carnacon village and Towerhill, within 2km of Moorehall, and Ballintubber Abbey, 8km northwest, are currently unconnected by recreational trails to the site. Plans by Mayo County Council to develop a 'Lost Treasures' trail from Cong in south Mayo to Westport on the coast, will include Moorehall as a 'discovery point' which will create opportunities for enhanced linkages and connectivity.

Recommendation

- ✓ Consider development of a sustainable transport management plan in concert with local partners.
- ✓ Consultations with local community actors and landowners to be undertaken prior to commissioning of longer distance recreational trails.
- ✓ All transport planning must consider the potential impacts on the network of hedgerows and linear features within the vicinity of Moorehall, Towerhill and Lough Carra, and the potential for disruption to bat flight lines and foraging habitats.

5.5 Water Supply & Wastewater

Moorehall is an unserviced site, with very limited wastewater services at the existing public toilet block located at the carpark just south of the house.

Water supply and wastewater are important considerations that need to be assessed to ensure that proposals within the masterplan comply with the requirements of the Mayo County Development Plan 2016-2021 in relation to water. The CDP states that it is an objective of the Council to require development in an unsewered area which includes a septic tank/proprietary effluent treatment unit and percolation area to be rigorously assessed in accordance with the accepted EPA Code of Practice, taking into account the cumulative effects of existing and proposed developments in the area.

The feasibility of servicing the site both in terms of water supply and waste water must be fully investigated to support the development of visitor infrastructure on site and the development of a visitor centre in particular.

Recommendation

- ✓ Mayo County Council to consider provision of essential services (water, wastewater, electricity, communications) to the Moorehall site.



Opportunity to create a Sculpture Trail within the Enchanted Forest



Boat trip on Lough Carra

5.6 Tourism Infrastructure

Tourism infrastructure in the way of food, accommodation or services such as bike hire are currently very limited in the immediate environs of Moorehall.

In the vicinity of Carnacon, there are a few seasonal B&Bs and a country guesthouse at Ballinafad, but there are no formal food outlets, café or transport services. Ballintubber to the north offers some options for food and accommodation, while Castlebar and Ballinrobe offer a range of hotel and dining options, 20km from the site.

At Moorehall itself, apart from the carpark and WC to the south of the House, there are informal recreational trails through the woodlands surrounding the house. These are very well used by local people but are largely unknown by visitors to this part of Mayo.

Recommendation

- ✓ Development of an enhanced range of visitor services within the surrounding villages and towns as the facility is developed and more visitors are attracted to a full range of activities, attractions and 'things to see and do' at Moorehall and its environs.

5.7 Community Involvement

In the course of developing the Masterplan, community consultations were held with people from the locality. There is a very strong sense of place and ownership of 'stories of Moorehall' among local people, many of whom foster happy memories of playing in the old house and woods as children, while others have family stories of their grandparents' employment there (see Appendix 01).

Recommendation

- ✓ The village hall at Carnacon hosts a collection of photographs and maps of the 'Big House' which could be incorporated into the visitor experience. There is concern that the history and memories of Moorehall and the family should not be lost in any future development.
- ✓ The development of trails and recreational routes will require the participation of the local community, and with local landowners in particular. It is clearly evident that the community must form part of a close partnership in developing the Moorehall as a visitor site, and will offer authentic stories and services as opportunities arise.

5.8 Sustainable Operational Model

The scale and ambition of the Moorehall Masterplan, to include the Moorehall demesne and Lough Carra within the context of Co. Mayo's tourism development plans, will require a robust operational model to be developed. There is enormous potential to create a unique bat conservation centre and compelling visitor attraction that will generate positive socio-economic benefits and sustainable jobs in the heart of Mayo.

Recommendation

- ✓ A strategic partnership should be established among Mayo County Council, the National Parks and Wildlife Service (NPWS) and Coillte to establish an integrated overarching governance model for the site.
- ✓ A strategic business plan should be prepared to develop an integrated capital and operational financial model, based on projected visitor numbers, earning capacity and strategic location in relation to other attractions, will be required to ensure that Moorehall realises its ambition.



6.0 The Masterplan Strategy

6.0 The Masterplan Strategy

The Moorehall Masterplan presents a core vision to develop the entire masterplan area as a strategically important site for nature conservation. The ultimate aim is to achieve designation as a nationally important Nature Reserve, offering opportunities for the public to learn more about the unique ecology and habitats of Moorehall and Lough Carra, while fostering opportunities to enhance the amenity value and visitor experience.

6.1 The Vision

The vision for Moorehall and its environs may be articulated as follows (Figure 9):

The vision for Moorehall is to develop a strategically important centre for nature conservation focused on preservation of the Lesser Horseshoe Bat and other protected species within a national Nature Reserve. Where feasible, appropriate restoration of historic structures on-site will contribute to development of a world class heritage, interpretation and recreational visitor experience.

Figure 9 Vision for Moorehall & Lough Carra



6.2 Masterplan Aim

The overarching aim of this masterplan is to set out a framework for the future development of Moorehall and Lough Carra as a national Nature Reserve and cultural heritage attraction. It will guide decision-making for the combined assets' sensitive conservation, development and management. Due to the nature of the site, long term commitment on the part of Mayo County Council and the NPWS will be required for delivery of appropriate interventions and proactive management. Involvement of the local community is central to this strategy and their ongoing engagement is a lead action within this plan.

Masterplan Guiding principles

The Masterplan will be guided by the following principles and the stated vision for Moorehall as a world class visitor experience:

- To maintain or restore the favourable conservation condition of Lesser Horseshoe Bat at Moorehall and Lough Carra.
- Any redevelopment of the built heritage shall promote the conservation of protected species.
- The development of sustainable and appropriate visitor and recreational infrastructure will be in line with the conservation objectives of the Special Areas of Conservation and Special Protection Area.

Conservation Management

Mayo County Council and the National Parks and Wildlife Service (NPWS) agreed to develop a Masterplan to guide future decision making for Moorehall and Lough Carra to ensure optimal conservation management of the site. It was agreed between the partners that the plan would address conservation management objectives as much as development options for the historic demesne. The ultimate objective of the parties is to seek designation of a national Nature Reserve for Moorehall and Lough Carra.

This balancing approach underpins all options and proposals for the site at Moorehall and its environs within the Masterplan.

6.3 Masterplan Options

A number of distinct strategic options were developed to test various approaches to designing the Masterplan strategy and to identify the best performing option for sustainable management and development of the site.

6.3.1 Options for a Visitor Centre

In light of the projected increase of visitor numbers to an estimated 90,000 due to the development of the Lost Treasures Trail as a 'feeder' to the site, and the enhanced visitor facilities at nearby Ballintubber Abbey, the requirement for a Visitor Centre at Moorehall was considered (see details in Section 6.4.3 below). Its purpose would be to cater for a range of visitors, providing a focal point for interpretation and visitor services away from the ecologically sensitive locations elsewhere on the site.

Initially consideration was given to the re-development of Moorehall House and farmyards as a potential visitor reception centre. However, this was discounted due to:

- Its primary designation as an SAC and an international conservation site for the lesser horseshoe bat. There are significant restrictions due to potential impacts on the bats' habitats and environs, such as the introduction of lighting, additional noise, heating and lack of existing infrastructural visitor services.
- Development restrictions relating to accessibility, fire safety requirements and space restrictions in terms of modern visitor needs (these could be better catered for with dedicated design);
- It would also be challenging to restore the house empathetically due to the lack of architectural detail apart from those of a single room.
- Cost of full restoration of this historic environment would be excessive and is not recommended.

However, partial restoration of Moorehall House should be considered to ensure the structural integrity of the ruin and thus the conservation of bat habitats. Particular attention should be paid to re-roofing of the house to prevent further deterioration of the overall structure, with specific repairs to the structural arch in the basement. Partial restoration of Moorehall House would be a hugely significant conservation project and must be carefully considered in terms of its costs and future benefits for bat conservation.



A strictly limited visitor experience could be considered within the House, such as restoration of one ground floor room (for which historic details are available) and emplacement of a steel architectural staircase to a refurbished balcony, offering the restored historic vista to Lough Carra.

Based on the above considerations, a new, stand-alone Visitor Centre was considered to be the best option, away from Moorehall House and farmyard, to ensure the conservation of the protected bat roosts and habitats. It would also ensure that state of the art facilities would meet the needs of a modern visitor experience.

The development of a universally accessible centre to showcase the environmental heritage and Moore family stories as an exceptional visitor experience would support the site's ambitions. It is envisaged that learning and research about Moorehall's bat residents would lie at the core of the centre.

Three distinct options were tested to establish the most appropriate place for a Visitor Centre, with the most sustainable and low impact approach to managing and restoring the remaining features of the historic landscape.

The following locations were considered in terms of accommodating a site for a new visitor centre:

- Option 1: Visitor Centre to the south of the walled garden;
- Option 2: Visitor Centre to the north of the walled garden;
- Option 3: Visitor Centre to north of walled garden plus existing car park to be removed and grassed.

Appraisal

A visitor centre located south of the walled garden (Option 1) would be well placed to take advantage of key views to the lake, Kiltoom point and Castle Island. However, the siting and design of this building would require very careful consideration in order to minimise the impact on the setting of the house, a protected structure, and its grounds which are intrinsic to the setting of the house. The visitor centre would also be located at some distance from the car park and so accessibility to this location would also be restricted.

However, the relocation of the car and coach park northwards from its current lakeside location to the northern track access point would focus the approach traffic towards the better route from the north into the site and away from the south, which has some lengths on the approach of a poorer standard.

Based on the landscape strategy (option 5 below) to reinstate the historic view from the lake to the house, it is recommended that unless there is a specific need to have parking near the lough (fishing/boating or for disabled parking (as below)), there is no benefit in separating the two areas of parking to serve the Hall itself. The options that remove the existing car parking at the south (options 1 & 2) are preferable from the point of view of routing traffic safely and reinstatement of the historic landscape.

Nonetheless, the proposed car and coach park would be located some distance from the Hall, and whilst this works well in terms of the context, due consideration should be given to:

1. an alternative element of car parking for disabled people within the appropriate distance of the Hall itself, or a suitable means provided of transferring disabled people from the car/coach park and Visitor Centre to the site; and
2. for an operational access to the restored Walled Garden and Hall area for maintenance and import/export of garden/working materials for these areas.

To locate the visitor centre to the south of the Hall could serve to push parking towards the south, rather than concentrate traffic activity around the northern car park area, thus leaving most other areas of the grounds carfree.

Therefore, the preferred option locates the proposed Visitor Centre to the north of the garden.

6.3.2 Servicing Arrangements for Proposed Visitor Centre

Appropriate servicing arrangements for a Visitor Centre should be investigated to ensure the safe disposal of wastewater from any development. A site assessment will determine the most appropriate approach and should be carried out in advance of finalising the site selection and preparing a planning application.

There are several elements of the assessment:

- A desk study to provide information on soils, geology and groundwater vulnerability
- A site visit to look at site drainage, vegetation, levels, housing, water uses in the area.
- Trial hole to check the depth and type of sub-soils and depth to water table.
- Percolation testing (P/T tests). These tests determine the soil's ability to filter and move the wastewater.
- Recommendation on a wastewater treatment options.
- Detailed service design will then be carried out in tandem with architectural design stage.

A phased or modular approach to servicing may be more appropriate given that it may take time for visitor numbers to reach their anticipated levels.

6.3.3. Landscape Design Options

- Option 4: Approach to landscape restoration – full restoration of 1839 open parkland areas
- Option 5: Approach to landscape restoration – partial restoration of 1839 open parkland areas (i.e. retention of some of the existing deciduous and mixed woodland areas).

Appraisal

The full restoration of the landscape layout surrounding Moorehall House to what is shown on the 1839 mapping (Figure 4) was considered. This would require the removal of all woodland to the front of Moorehall House, as well as removing large areas of woodland to the back of the building, along the main access road and to the north of the original entrance to the estate.

Option 4: While the majority of the woodland areas to be removed would be conifer plantation and young mixed woodland, notable areas of deciduous woodland, dominated by beech, and mixed woodland not felled since 2006, would be affected as well. Overall, this option is considered to result in the loss of too much good quality, high amenity woodland of biodiversity value. Additionally, the opening up of too many large areas may have a negative effect on the commuting routes and feeding areas of the local bat populations, especially on the lesser horseshoe bats. This option was therefore not brought forward for further detailed consideration.

Option 5: Opening up the view towards Lough Carra from the front of Moorehall House is considered to be the most significant element of the restoration of the former landscape setting surrounding the building, as this would have previously been one of the main attractions of the house. It is also felt that this would significantly add to the attraction of future visitors to the area. The majority of the woodland areas to the front of the ruined building is made up of a conifer plantation, while only a small area of deciduous woodland dominated by beech would be affected. Therefore, the clear felling of this area is considered a feasible option, without significantly affecting the biodiversity and amenity of this area.

• In order to significantly reduce felling within all other woodland areas, it is proposed to create a number of clearings along the existing and proposed paths from the proposed new car parking area to Moorehall House. While some trees will be lost, the increase of woodland edge habitat and addition of small meadow areas within the clearings, will add to the biodiversity value of the site. This will potentially provide new commuting routes and additional feeding areas for the local bat population.

• As recommended in the 2017 ecological survey of Moorehall, it is further proposed to establish a 'continuous cover forestry' (CCF) system throughout the estate, which will include the selective thinning of trees to let light onto the forest floor and thereby encourage the natural regeneration of native tree and shrub species, as well as the development of more diverse ground layer vegetation.



The 'Dark Road' leads along the western approaches to Moorehall's farm outbuildings.

- Other considerations of the CCF system should be the reduction of non-native tree species over time and the removal/control of any non-native, invasive species, such as cherry laurel (*Prunus lauroceracus*). Also, deadwood should be left to decompose on site, unless this results in a hazard to the public.
- A key point to consider is the retention of the important bat commuting corridor along the western track (the 'Dark Road') from the existing car park to the outbuildings of the House, as this is potentially affected by removal of the conifer plantation to the front of the ruined building.
- Finally, consideration should be given to the ground treatment following the clear-felling of the area to the front of Moorehall House, with regard to how stumps/roots are being removed and the surface levelled, so that these areas can be grassed over and maintained in the future by mowing. Also, the effect on the trees to be retained along the newly established forest edges needs to be considered, as such trees are often prone to wind-throw.

All future woodland management must adhere to the recommendations in Chapter 5 of the Vincent Wildlife Trust report on behalf of the National Parks and Wildlife Service (McAney 2018¹⁴).

6.3.4 Masterplan Strategy: Preferred Options

Based on the above considerations, the central approach to the Masterplan strategy is as follows:

- ✓ Option 3: new Visitor Centre to be sited to the north of the Walled Garden o Existing lakeshore car park to be removed and grassed over.
 - Servicing arrangements require to be planned carefully to preserve the natural environment.
- ✓ Option 5: Proactive approach to Landscape Restoration:
 - Partial restoration of 1839 open parkland areas (i.e. retention of some of the existing deciduous and mixed woodland areas).
 - Create a number of clearings along the existing and proposed paths from the proposed new car parking area to Moorehall House; providing commuting routes to bats.
 - Establish a 'continuous cover forestry' (CCF) system throughout the estate, to include selective thinning and reduction of non-native tree species over time.
 - Retention of the bat commuting corridor along the track from the western end of the existing car park to the outbuildings of Moorehall House.
- ✓ All proposals to adhere to Chapter 5 recommendations of McAney (2018, VWT) report.
- ✓ All recommended works should be "planned and carried out with the advice of a suitably qualified forester/woodland ecologist and/or the National Parks and Wildlife Service and the Forest Service", as per the recommendation of the 2017 ecological survey of Moorehall.



Figure 10 Preferred Masterplan Strategy

(see also Appendix 05 for larger scale map)

6.4 Spatial Strategy for Moorehall

The spatial strategy for the redevelopment of the Moorehall estate focuses on the sensitive redevelopment and management of existing assets and, in particular, the historical and ecological significance of the house, farmyard barn (granary) and demesne.

The approach focuses on the appropriate reinstatement of historic features of the Moorehall demesne, whilst acknowledging that some ecologically valuable changes have taken place over the decades and should be retained.

Figure 10 illustrates the preferred strategy for the masterplan which is described in more detail in this section.

The key proposals to deliver the Masterplan strategy are set out below.

6.4.1 Moorehall – The House

Moorehall is a Protected Structure (Ref: 0022 Mayo Council RPS) and is recorded by the National Inventory of Architectural Heritage. Any development, modification, alteration, or extension affecting a Protected Structure and/or its setting must be sensitively designed and sited. It must also be appropriate in terms of the proposed materials, scale, density and layout, impact on historic features and junction with the Protected Structure and would not detract from the special interest, character and setting of the Protected Structure (see Section 5.2).

Built on elevated ground, Moorehall became a landmark within the surrounding demesne. Its carefully chosen site commanded spectacular views of Lough Carra and its shoreline to the south. The first edition Ordnance Survey map of 1839 (below and Figure 6) provides a good insight into how the lakeside property would have looked at that time. The principal façade enjoyed an uninterrupted view southwards to the lake and was approached by a number of meandering avenues and paths that curved their way through the grounds from entrances to the north, south and east.

¹⁴ See McAney, Kate (2018). *The Lesser Horseshoe Bat at Moore Hall: A Report for National Parks and Wildlife Service, Vincent Wildlife Trust.*



Moore Hall, 1839

Current Condition

Moorehall has been open to the elements for the past 100 years, having been burnt down in 1923. The catastrophic fire resulted in the collapse of the slate roof and upper floors.

There has been significant ingress of water to the basement over the years, although some of the basement rooms are drier than others, retaining the original plaster. However, the vaulted ground floor and some internal walls remained intact.

Over the past century, foliage and organic matter have built up within the ruined interior, with thick (>1m) detritus now covering the basement floor. Further matter covers the tops of the exposed walls and the surface of the vaulted floor at ground floor level. These layers of debris and organic matter conceal the structural fabric and restrict the capacity to form a detailed brief for the reconstruction of the historic building.

Options for Restoration and Redevelopment

Reroofing of the main house would address water ingress into the basement, which in time will lead to the deterioration of the winter roosting site. A new roof on the ruin could additionally provide new roosting opportunities for bats, but any proposals would have to be developed gradually to integrate the hibernation requirements of the bat colony.

Without a full understanding of the current state of the structural fabric, a detailed plan for the consolidation and repair of the roof and associated structures cannot be prepared. A full building survey would be required prior to the preparation of any detailed designs proposed for interventions. Such designs should also recognise the limitations on the timing of any works to prevent disturbance to the bat colonies.

The priority intervention at Moorehall is the repair of the roof. Re-roofing of the house is essential to the maintenance of habitats for the lesser horseshoe bat, to prevent water ingress to the basement and consequent decay of the existing structure, while offering further roosting opportunities.

Restorative/ enhancement measures to the basement of Moorehall House are also required to secure the hibernation needs of the bat colonies. Basement works may be incorporated into a larger conservation plan for Moorehall, but are required irrespective of conservation measures for the main building.

Such measures must particularly address water ingress and threats to the structural integrity of the basement e.g. in 2019, one of the arches in the basement began to collapse.



Potential for re-roofing and redevelopment of the balcony above the main entrance door

The use of passive detectors over a 12-month period would be required to provide information on the bats' activities in advance of any works. Year-long measurements of temperature, humidity and air flow conditions would inform the design of any engineering/ architectural plans for re-roofing of the main structure (McAney 2018).

The maintenance of all flight paths to Room 6 and other roosts is imperative, as well as re-plastering of ceilings where required. The installation of bat boxes could be undertaken as alternative roosts prior to, and during, any construction work. No works should be carried out between October-April in any given year, to prevent disturbance of hibernating bats, while summer works need to be planned carefully to avoid disturbance of other bat species who use the basement as a summer roost.

In addition to these restorative measures to secure the bat habitats, detailed designs may be prepared to facilitate limited visitor access to the hall interior and balcony.

At Curraghchase Forest Park in Co. Limerick, another designated SAC for the lesser horseshoe bat, it is noted that recreational access has not had a negative impact on the bat hibernation sites in the basement of Curraghchase House and a nearly stone building. The entrance courtyard to both structures are not open to the public, thus securing the site. — Noted in the Vincent Wildlife Trust Report on Moorehall (McAney 2018).

Controlled visitor access to the House would provide opportunities for innovative interpretation, while providing views to the historic vista of the lake.

The following are recommended:

- ✓ A full building survey for Moorehall House and its basement prior to preparation of any detailed designs for proposed interventions.
- ✓ A conservation management plan will be required prior to commencement of any design work for restorative/ enhancement projects on the roof, balcony or basement.
- ✓ Any building survey itself must comply with the requirements of the Habitats Directive.
- ✓ All proposals would be subject to Appropriate Assessment.
- ✓ Controlled visitor access only, while providing opportunities for innovative learning and interpretation.

6.4.2 Farm Outbuildings – Designated for Habitat Enhancement

The former farmyard and outbuildings are designated areas for bat roosts and favourable bat habitats.

Current Condition

The farmyard originally comprised a series of yards with a number of agricultural buildings within an enclosure, including the barn (or granary), servants' quarters, byres, stables and saw mill.

As shown on the historic OS map series (Figure 6 above), significant structural changes were made to the layout and buildings of the farmyard during the later 19th century.

These farm buildings are currently in a very poor state of repair, with the byres, stables and servants' quarters in a particularly precarious state of dilapidation. However, restorative reroofing of the barn (granary) carried out in the 1990s by the Vincent Wildlife Trust, in association with the NPWS and Coillte, means that it continues to be an active maternity roost, offering a selection of favourable secure, dry and cool habitats within the barn.

Options for Restoration and Redevelopment

The designated farmyard and outbuildings are to be restored to enhance their suitability as bat roosts and habitats in line with the conservation management plan to be prepared for the historic features within the site. Such works will include the provision of a range of artificial hibernation roosts for Vespertilionid species.

Visitor access to the area surrounding the designated barn (granary) outbuilding is to be prevented and encouraged elsewhere at less sensitive locations on the site.

Additional access and security measures will be delivered, with a detailed plan to develop the entire farmyard for bat conservation. Proposals will recognise the limitations on the timing of any work during the sensitive breeding season. Recreational walks will be diverted away from the farmyard and buildings, and this area will be developed solely as a refuge for bat species.

The McAney (VWT 2018) report recommends a number of restoration options, including front loading of strategic conservation measures at the Farmyard:

- Rebuilding of farmyard enclosure wall to secure the yard as a bat sanctuary
- Replanting of the enclosed farmyard with small deciduous woodland
- Diversion of public trail away from farmyard (>50m from external barn wall)
- Emplacement of temperature loggers at various points within the outbuildings
- Provision of 'cool' house
- Provision of 'hot boxes'
- Addition of insulating material to windows of barn to reduce noise reception, while increasing temperature within the roost
- Restoration of suitable buildings for bat use.

The Vincent Wildlife Trust also made recommendations for enhanced conservation opportunities including:

- Increased light levels should be avoided at all costs: thus the farmyard, house, garden, servants' subway, walkways and the vicinity of Lough Carra should remain unilluminated.
- Noise levels must be kept to a minimum in the vicinity of the basement and farmyards to avoid disturbance to winter hibernation sites and summer maternity roosts.
- Gradual replacement of conifers at the rear of the barn by native deciduous trees (retaining shelter at all times).
- Provision of bat boxes as alternative summer roosts for e.g. Daubenton's bats.
- Provision of secure ground floor access for bats to shelter in buildings, close to linear features (hedges, walls).
- Retention of vegetation such as ivy cover on walls in the farmyard (until alternative vegetational shelter is provided), and
- Replanting of gaps along the Dark Road corridor with broadleaves.



Western façade of the barn (granary) at Moorehall farmyard



Artist's impression of restored farm buildings & yard with bat conservation measures

© Mayo County Council

6.4.3 Moorehall Visitor Centre –Hub for Visitor Access, Interpretation and Activities

Visitor Centres have many purposes that relate to management of visitor arrival, welcome and access, orientation, provision of engaging information, and overall enhancement of the visitor experience. A Visitor Centre can also act as a locus for orientation and a trailhead for outdoor activities such as walking or exploring within the estate. In some inaccessible or fragile sites, it can act as a substitute; while for those of limited mobility, it can act as a singular educational and inspirational forum.

The main functions of the proposed new Visitor Centre at Moorehall will be to:

- Welcome and orientate: provide information about the location and context of the site; provide information about the role or purpose of the site; and provide information about recreation, education and activities on site;
- Provide for basic needs: access to toilet facilities; shelter; refreshments and access to transport;
- Inspire: foster an appreciation of the unique habitats, species and landscapes that form part of the (proposed) Nature Reserve and the wider Lough Carra catchment;
- Experience: provide opportunities to actively experience nature, habitats and the landscape through recreation and/or outdoor learning;
- Substitute in particular settings for inaccessible or fragile environments such as Moorehall itself;
- Educate and engage visitors of all ages about the importance of conservation and protection of our habitats and species;
- Promote the local area and engage with host communities;
- Provide administrative; storage; staff facilities and workshop / learning spaces.
- Communicate with policy makers, educators, researchers, recreational users and local communities.

The relative importance of these multiple functions varies according to the needs of the particular site.

Design Approach

Ultimately, the internal layout of a visitor centre is linked to its functions and the relative importance of those functions. The design of a Visitor Centre at Moorehall should incorporate:

- ✓ Buildings of exemplary architectural design, modern in approach but taking design cues from characteristics of the local context and environment;
- ✓ Sustainable energy, waste and water management systems;
- ✓ Sustainable transport options;
- ✓ Provisions for universal access.

Building design should also be influenced by the:

- ✓ Relationship with the surrounding area and site constraints;
- ✓ Landscape and the vista from the building.

Due to the rural location of Moorehall and minimal visitor infrastructure in the local area, it is considered appropriate to develop a Visitor Centre to act as a focal point for visitor services.

The new Visitor Centre will be easily accessible from an adjacent (new) car park entrance and will accommodate a range of spaces including, but not limited, to:

- Community Research & Learning facility relating to conservation of the lesser horseshoe bat and other species;
- Year round exhibitions providing a range of interpretation and educational materials;
- Access to local guides who are knowledgeable about different aspects of the site and its history.
- Interpretation that explores links with the Moores and key events in wider Irish history, which will also highlight the significance of the site to children and their families.
- Options for non-weather dependent indoor activities.



Family walks

6.4.4 Proposed Trailhead for Walks and Trails

From an experience development perspective, the Visitor Centre will act as a trailhead for a variety of trails that vary in length and explore defined interpretative themes associated with the site. Trails should be designed and, as appropriate, formal and informal surfaces should be used.

Potential walks and trails should vary in length to suit different interests and abilities, in consultation with landowners and land managers, as needs. These could include:

- Trails within the Moore Hall estate including historic paths
- Development of a double tree-lined trail linking Moore Hall with Towerhill, in consultation with local landowners

- Opening of the Walled Garden with formal and informal paths
- Kiltoom Point Loop
- Carnacon Loop Trail
- Doon Peninsula Loop Walk
- Night Bat Trail
- Ballintubber Abbey and the Pilgrim Trail
- Literary Walking Tour with Lough Carra Boat Trip and stop off at Castle Island
- Discovery Point on the (proposed) 'Lost Treasures' Trail from Cong to Westport.

The development of walking connectivity between the attractions at Moorehall itself and Lough Carra, Towerhill, Ballintubber Abbey, Doon and Rusheen along a 'Lost Treasures Trail' between Westport and Cong, has the potential to create vibrant, sustainable trail linkages through rural County Mayo. This is potentially a key element for the future development of an integrated visitor destination in this region.

Secure, formal cycle parking and e-bike charging points should be provided at the Visitor Centre car park as part of any sustainable mobility / transport strategy for longer distance trails.

6.4.5 The Historic Landscape and Forestry Management

The setting of Moorehall includes the outbuildings, the walled garden and the wider demesne including the viewing corridors to and from Lough Carra to the south.

It is proposed that, from a landscape and forestry perspective and where ecologically feasible, the current site should be pared back to focus on, and emphasise, the remaining original features of the historic landscape. Additionally, woodlands will be actively managed for bat foraging and habitat creation.

The strategy proposes that:

- A conservation management plan should be prepared to enable the identification and sensitive reinstatement of all original landscape features. Appropriate materials should be used to reinstate the original tracks / paths as outlined in the landscape plan from 1839, with emphasis on the restoration of priority connections such as the grand entrance to Moorehall House. It is proposed to differentiate these tracks from other more recently developed tracks and forestry paths (not on 1839 plan) through subtle use of distinct surfacing materials.
- In addition to the treatment of existing pathways, a new footpath route connecting the car park to the proposed Visitor Centre's main entrance. A longer distance route to south towards the lake should also be provided.

- In terms of forestry management, the site predominantly consists of commercial coniferous forestry plantation, some of which has been clear felled in recent years (see Error! Reference source not found.). Tree species present on the site include Norway spruce *Picea abies* and Sitka spruce *P. sitchensis*, Scot's pine *Pinus sylvestris*, Japanese larch *Larix kaempferi*, ash *Fraxinus excelsior*, beech *Fagus sylvatica*, oak *Quercus* spp. and alder *Alnus glutinosa*.
- It is proposed that conifer plantation should be gradually removed to reinstate the 1839 view corridor to the front of the house. This will also visually 'reconnect' the Hall with the family graveyard at Kiltoom to the southwest. The more recent track leading to lake should also be retained and specimen or native tree planting could be considered in appropriate locations within this view corridor.
- Selective tree clearance is recommended to recreate the view along the 'ride' – the original main access road to Moorehall; however, this will need to be carefully managed.
- Areas of existing woodland (not in line with 1839 plan) will be retained for bat foraging and actively managed for habitat creation. Further linear features, hedgerows and treelines, will be planted to enhance the commuting links for Lesser Horseshoe Bats between Moorehall and Towerhill to the northeast.
- It is recommended that the car park to the south of the house on the lakeshore, be relocated to the location of the proposed new Visitor Centre and that hard standing be restored to the original grassland feature.
- The toilet block is to be retained and closed as a public toilet, but will be internally refurbished. A consideration of alternative potential uses that take account of its function as a night roost for both Lesser Horseshoe and Daubenton's bat should be undertaken.
- All woodland management strategies will adhere to the recommendations in Chapter 5 of the McAnay report (McAnay, VWT 2018) on behalf of the NPWS.

See Figure 11 for proposed strategy for woodlands management at Moorehall.

Figure 11 Moorehall: Woodlands Management Strategy

(see also Appendix 05 for larger scale map)



6.4.6 The Walled Garden

The walled garden, located east of the main house, originally provided food for the household and would have served as a retreat for quiet walks. The circular-plan dovecot, a feature of many Irish houses of the day, has survived at the south-eastern corner of the garden.

The former walled garden provides considerable scope for the development of a community project that links the community with the restoration of the garden area.

As there is limited information of what was previously grown there or the corresponding planting plans, the garden should be redeveloped to support the ecological function of the site.



Detail of 1839 map of Moorehall and formal walled garden to the east (OSI)¹⁵

Artists Impression of what Walled Garden could look like

© Mayo County Council



¹⁵ Ordnance Survey of Ireland – Historic Maps viewer: <http://geohive.maps.arcgis.com/apps/webappviewer/index.html?id=9def898f708b47f19a8d8b7088a100c4>



Artist's impression of what the Stables looked like

© Frank Reilly, 2019¹⁶

The garden should be planted carefully for biodiversity enhancement purposes. This could include the supply of organic vegetables, herbs and/or fruit to the Café in the new Visitor Centre. There should be a prohibition on the use of herbicides within the garden.

The garden contains the following features of note which are significant from a historic perspective and should be developed in line with any future conservation management plan developed for the site:

- The garden's irregular / polygonal shape
- The circular-plan dovecot at the southern corner of the garden.
- Height, method of construction of the walls
- Unique collection of mosses on the western facing exterior wall, which should be retained and protected.

Historically, a stable block was attached to the rear of the walled garden. Just to the north of the garden were the racing stables and yard. The stables once housed the infamous Moore race horses, Coranna, Croagh Patrick and Wolf Dog. The layout of these structures are illustrated below by artist, Frank Reilly:

There is scope to accommodate a sensitively designed, new-build element on the footprint of the original building with direct access to the south

facing walled garden. The proposed stable block building would provide the indoor space to service walled garden activities and small scale events.

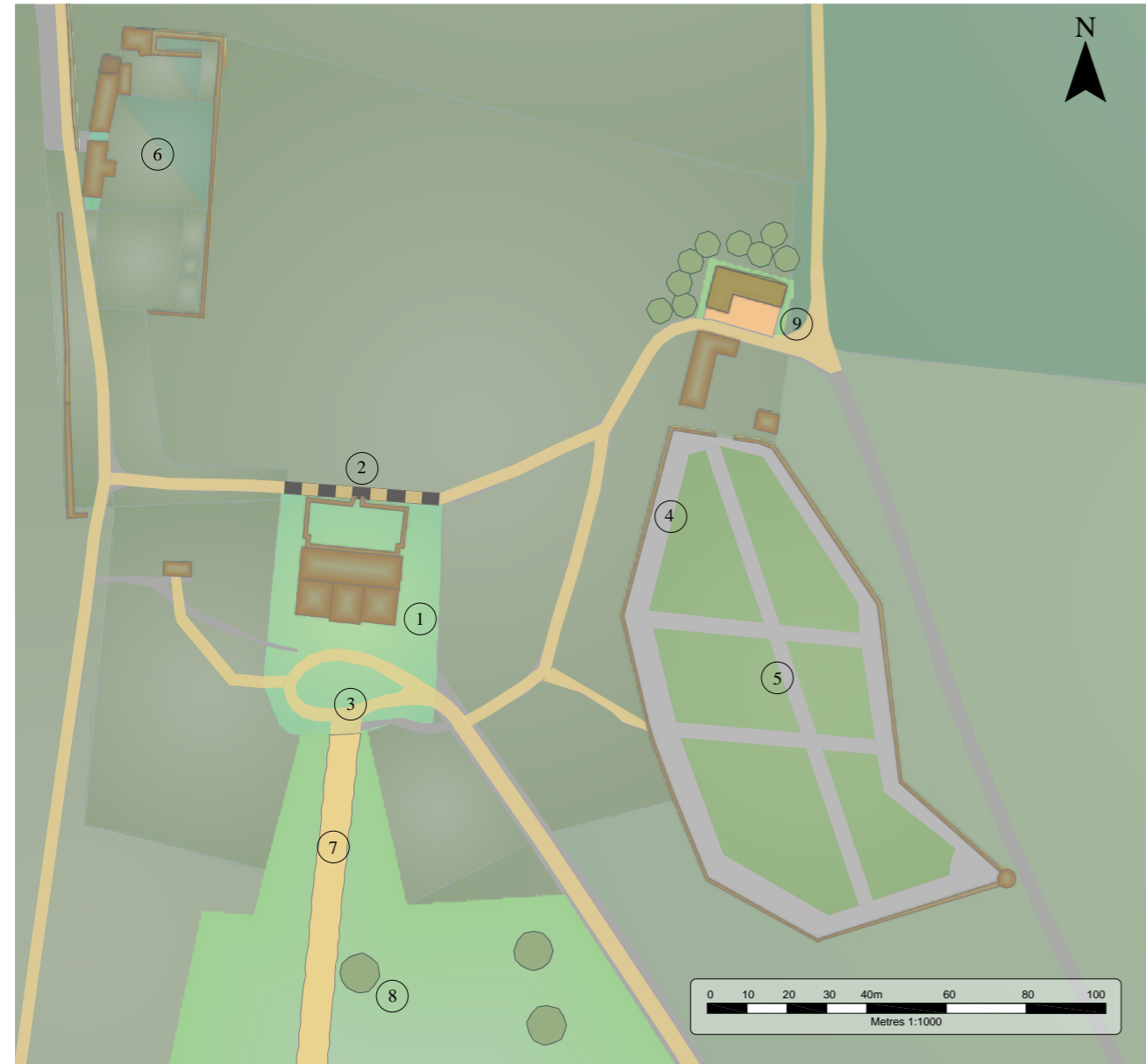
In a manner consistent with the recommended Conservation Management Plan for Moorehall, it is proposed that the following measures are implemented as a result of this masterplan (Figure 12):

- Restoration of boundary wall and dovecot.
- Original pathways to be reinstated (formally and informally).
- Rebuilding of the stable block to the back of walled garden, following the previous footprint and reinstating access to the walled garden from the north. The access door will give way to an outdoor seating and potting area. Potential uses of this block include education or research linked to a biodiversity enhancement strategy.
- Moss wall on the exterior of western boundary wall to be protected. A separate assessment linked to the role of the Research Centre might include a survey of the range of moss, lichens and insects present on the site.
- Planting beds to be re-established in walled garden and used to supply café in the Visitor Centre.

¹⁶ Note: Artist Frank Reilly is the grandson of the last Steward of Moorehall. This worked is based on his father's recollections of the garden as a young man. His account is recorded and can be viewed on www.moorehall.net

Figure 12 Moorehall, Walled Garden, proposed Reinstatement

(see also Appendix 05 for larger scale map)



6.4.7 Restoration of the Boat House and Improved Access to Lough Carra

Lough Carra is a unique ecological and geological asset within the Moorehall masterplan area. It is integral to the overall experience at Moorehall and opportunities to access the lake, Castle Island and other points of interest should be explored. However, given its designated status, careful consideration needs to be given to the introduction of additional activity to this sensitive environment. Subject to appropriate assessment in accordance with the Habitats Directive, the following project should be considered:

- Restoration of the boat house should be considered by Mayo County Council, in agreement with the landowner. This would provide an access point to the Lough, with boating facilities and interpretation points related to Castle Island and

aspects of the lake's unique geology and ecology within the 'Joyce Country and Western Lakes Geopark'.

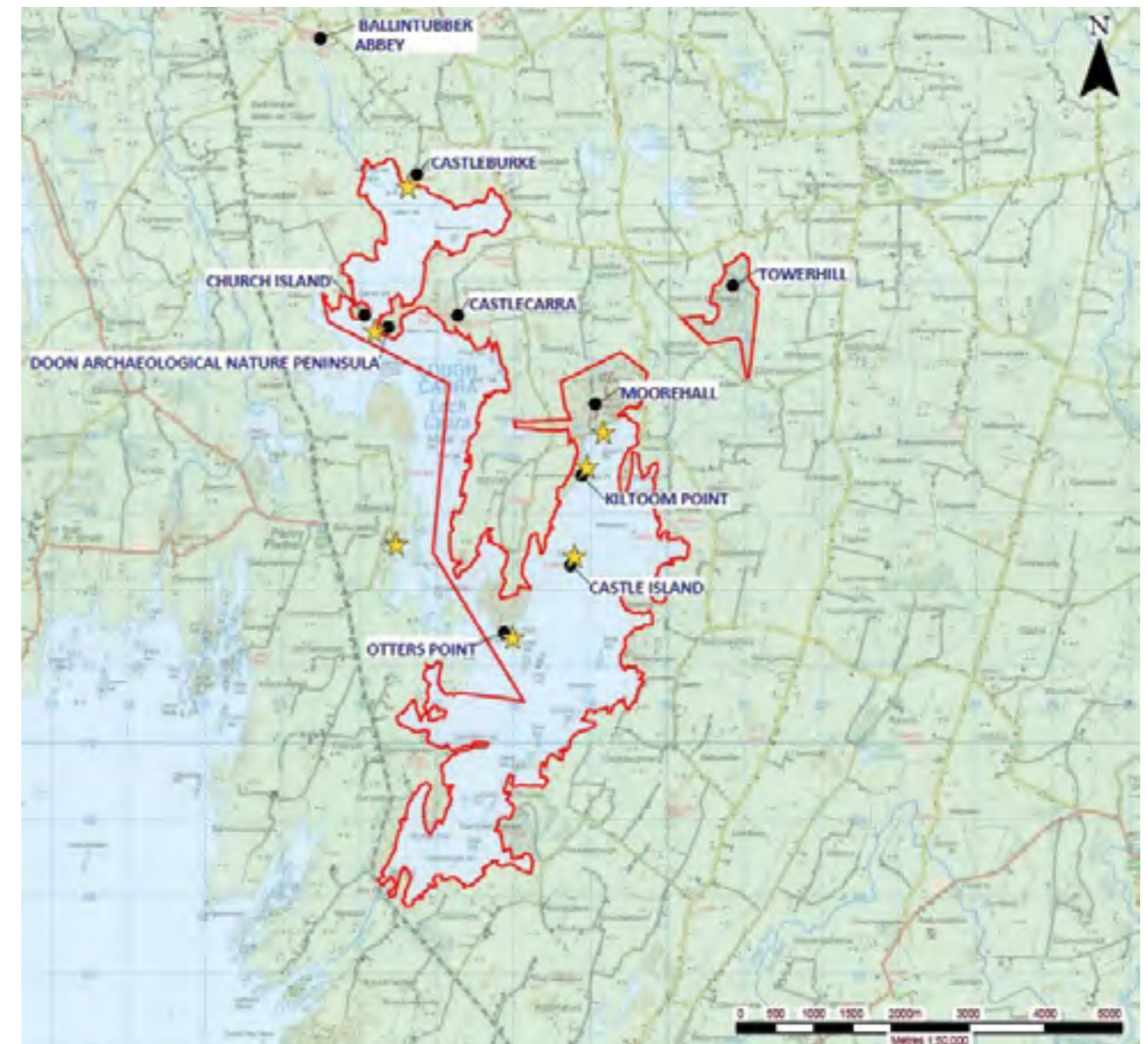
- With the majority of the car park to be removed from the lake shore, a limited number of parking spaces will be retained to facilitate access to the boat house and boating activities on the lake.
- Several small scale pontoons could be provided at key points of interest across the lake e.g. Castle Carra, Castle Bourke, Church Island and Castle Island (see Figure 13).

These proposals will need to be considered in light of introduction of increased disturbance and potential conflict with conservation of species and habitats, in particular breeding waterbirds.

Significant biosecurity measures would also be required. See Conservation Sub-action C3.2: Zebra mussel prevention strategy, from the LIFE Lough Carra application. Relevant proposals must also be subject to Appropriate Assessment.

Figure 13 Proposals for improved access to Lough Carra, on public lands

(see also Appendix 05 for larger scale map)



6.4.8 Access Improvements

Due to the limitations of the local road capacity, it is anticipated that Moorehall will attract mainly independent visitors – car-based individuals/ couples, families, walkers and cyclists.

There is existing road access to Moorehall demesne at the point proposed for the new car park (sited by the Visitor Centre), but it will need the appropriate visibility splays onto the road. Although the road bends in the correct direction to the south, there is a slight kink to the north.

The potential impact of the trimming of vegetation on the access approach will need to be considered at the detailed design stage. The hedgerows of the local road network provide vital habitats and flight lines for the resident bat populations must therefore be retained.

- In order for the bat commuter route between Towerhill and Moorehall to function optimally, continuous vegetation cover is imperative along road ways in the vicinity of the two estates, which includes cover from one side of the road to the other. Any re-design of roads or entrances must maintain hedgerows where there is a span across the road.

The crossing of the main road for the proposed walking trail to Tower Hill (see Figure 11) will require careful design and some signing on the approaches, and so the visual impact of this needs to be considered at the detailed design stage. This also applies to the routes from the north and Ballintubber Abbey, although due regard must also be given to the availability of routes that are not along established roads.

A servicing area for deliveries to the Visitor Centre will be needed that might affect the detailed design of the car park. Electric car and e-bike charging points should also be provided in the new car park, as well as secure, formal cycle parking.

6.4.9 Car Park Capacity

It is noted that the forecast visitor draw at Moorehall is some 90,000 visitors per annum and, whilst the site will be open all year, generally peak days will comprise weekdays during the spring/summer and weekends during the autumn/winter. This therefore comprises an average of about 275 typical visitor days per year, and so an average of some 327 visitors per day (clearly some seasonal variation). Allowing for coach parties (likely to be more during the summer when the numbers will be higher), and an average

car party size of 2.5 people, this equates to some 131 car visits per day on average, but in the summer this will undoubtedly be higher. The 96 car spaces would accommodate this average demand if length of stay was restricted to ensure a regular turnover, but would not allow for some visitors to park all day and undertake the circular walks, nor accommodate peak summer demand, without creating overspill, unless a substantial number of the daily visits were to be by way of coaches.

The capacity of the local road network should be assessed to establish the appropriate design measures to facilitate access to the site and any improvements to the surrounding road network should these be required. Access improvements should avoid removal or damage to hedgerows as these features also act as commuting routes for bat populations.

A transport assessment is also required to determine a strategy to identify an appropriate level of car parking in light of the forecast numbers of visitors, particularly in the summer and that the level of traffic activity through Carnacon is not significant.

6.4.10 Relocation of the Car Park

The proposed relocation of the car and coach park northwards from the present lakeside location to the northern track access point focuses the approach traffic towards the better route from the north into the site and away from the south, which has some lengths on the approach of a poorer standard.

It is recommended that unless there is a specific need to have parking near the lough (fishing/boating or for disabled parking (as below)), there is no benefit in separating the 2 areas of parking to serve the Hall itself, and so the option to remove the existing car parking at the south is preferable.

Nonetheless, the proposed car and coach park is located some distance from the Hall, and whilst this works well in terms of the context, due consideration should be given to:

1. An alternative element of car parking for disabled people within the appropriate distance of the Hall itself, or a suitable means provided of transferring people with mobility impairments from the car/coach park and visitor centre to the Hall site; and
2. For an operational access to the restored walled garden and Hall area for maintenance and import/export of garden/working materials for these areas.

See Figure 14 below for proposals.



Figure 14 Visitor Centre – proposed Car Park and New Routes

(see also Appendix 05 for larger scale map)

6.5 Detailed Design Considerations

Future consideration of this masterplan must recognise that:

- Any tourism infrastructure proposed for the site must be sensitively located in order to prevent disturbance to protected species and associated habitats, subject to Appropriate Assessment.
- Development of the site should only take place on completion of satisfactory assessment in accordance with Article 6(3) of the Habitats Directive.
- Site management, small-scale infrastructure such as signage and seating, together with tree removal, should all be assessed in accordance with this same provision

- The "leave no trace" philosophy should be actively promoted for the site to prevent the degradation of the favourable bat habitats in the general area.
- Active trail management and trail re alignment (particularly in the area close to the maternity roost) should be carried out to prevent unnecessary disturbance to bat colonies.
- Ecologically sensitive hotspots should be identified where activity is actively discouraged and development avoided or minimised. Where activity is incidental to the overall usage of the site it should be actively managed.



7.0 Strategic Actions

7.0 Strategic Actions

The realisation of the vision and spatial strategy for Moorehall will require sensitive design and implementation. To achieve this, five integrated Strategic Actions are proposed, focused on bat and nature conservation, authenticity of the historic environment, strategic linkages and development of a world class visitor experience.

To realise the vision, five Strategic Actions are proposed:

- **Strategic Action 1: Conservation Management Plan for Moorehall and Lough Carra (to protect and enhance habitat for Lesser Horseshoe Bat and other species)**
- **Strategic Action 2: Authenticity and Restoration of key Features of the Historic Environment**
- **Strategic Action 3: Development of the Visitor Experience**
- **Strategic Action 4: Building Strategic Linkages; Interpretation & Signage**
- **Strategic Action 5: Infrastructure Planning & Business Case**

7.1 Strategic Action 1: Conservation Management for Moorehall & Lough Carra (to protect and enhance habitat for Lesser Horseshoe Bat and other species)

Moorehall represents the most northerly range in Europe of the internationally important Lesser Horseshoe Bat (*Rhinolophus hipposideros* Bechstein), which is fundamentally protected by European legislation through its listing on Annex II and Annex IV of the EU Habitats Directive. In Ireland, the species is also protected under the Wildlife (Amendment) Act, 2000.

Updated Conservation Status of Lesser Horseshoe Bat

The Status of EU Protected Habitats and Species in Ireland (Department of Culture, Heritage and the Gaeltacht, 2019) is the third report on the assessment of the status of habitats and species in Ireland.

In relation to the Lesser Horseshoe Bat, it states that

'The lesser horseshoe bat population overall is doing well; monitoring has demonstrated significant increases in numbers in the core areas. Over much of its distribution, both range and the area of suitable habitat have remained stable. In Limerick and North Kerry, however, worrying declines in habitat, and consequently in range, have been observed. These are considered likely to continue without significant intervention. For these reasons, Habitat, Range and their associated Future prospects, which were all considered to be Favourable in the last report, are now considered Inadequate, and the Overall Status of this species is assessed as Inadequate and declining.'

As presented in Section 2 above, Moorehall House, barn and farmyard, as well as neighbouring Towerhill, have been designated as Special Areas of Conservation because of the presence of maternity and hibernation roosts of the Lesser Horseshoe Bat (cSAC 000527). Thus conservation and habitat enhancement lie at the heart of the Masterplan and underpin all of the proposals presented below.

7.1.1 Achieving Nature Reserve Status and Conservation Management Plan

A key objective in the masterplan for Moorehall and Lough Carra, including Towerhill, is to achieve designation of the lands as a Nature Reserve.

In the case of the lands at Moorehall, the woodland adjoining the Moorehall SAC and Lough Carra SPA/ SAC (and Towerhill) ecosystems are of scientific interest, and these sites are likely to benefit if measures are taken for their protection.

What is a Nature Reserve?

A Nature Reserve is an area of importance to wildlife designated by Ministerial Order and protected by legislation. Section 15 2(a) of the Wildlife Act, 1976 (No. 39 of 1976) refers to the characteristics of lands that can be designated as a Nature Reserve. They comprise:

- Habitat or forms the habitat or part of the habitat of one or more species or community of flora or fauna being a species or community which is of scientific interest, or
- Land that includes or forms an ecosystem which is of scientific interest, and that the habitat or ecosystem is likely to benefit if measures are taken for its protection.

The minister must also be satisfied that it is desirable to establish the land as a Nature Reserve, and the proper management of the land as a reserve would not be precluded by any interest of any other person (including a person who is an owner with the Minister) in or over the land.



On the shore of Lough Carra

The designation of a Nature Reserve will be underpinned by an integrated Conservation Management Plan for the Lesser Horseshoe Bat which will identify and support specific bat conservation measures. Specific measures will be proposed for management and conservation activities for other species and habitats within the Masterplan area.

The Plan will:

- Identify and evaluate the features of interest for the site
- Set clear objectives for the conservation of the features of interest
- Describe the site and its management
- identify issues (both positive and negative) that might influence the site; and
- set out appropriate strategies/management actions to achieve the objectives

In developing the Conservation Management Plan, particular reference must be made to the baseline assessments, findings and recommendations of the following reports:

- McAney, Kate (2018). Report on the lesser horseshoe bat at Moorehall, prepared by the Vincent Wildlife Trust for the National Parks and Wildlife Service, Ireland.
- Kelleher, C./ SLR Consulting (2019). Report on the flight paths of the lesser horseshoe bat at Moore Hall, Muckloon, Carnacon, Co. Mayo. Unpublished report for NPWS, Ireland.

- Kelleher, C. (2007). Study of the flight paths of the lesser horseshoe bat at Moore Hall, Muckloon, Carnacon, Co. Mayo. Unpublished report for Coillte Teoranta, Newtownmountkennedy, Wicklow, Ireland.
- Biggane, S. (2005a). Foraging and commuting activity of lesser horseshoe bats at Moorehall maternity colony, Moorehall, Co. Mayo. Unpublished report for NPWS, Dublin, Ireland.

Key findings from these reports are summarised below and detailed recommendations are presented in Appendix 04. The McAney (2018) recommendations in particular will form the basis for critical conservation measures that will be 'front-loaded' and implemented in the early stages of the Moorehall Masterplan Implementation Plan (Chapter 8 below) and through proactive conservation management over the coming decades.

Once designated, the delivery of a Conservation Management Plan will require financial, human and other resources to sustain the ongoing management of the Reserve as well as the delivery of the objectives and actions of the Plan. The Plan will be closely aligned with the established conservation objectives of the Moorehall SAC and the Lough Carra SPA/ SAC and the protection of key features of interest supporting the commuting, foraging and roosting habits of the bats, as identified in the studies and reports on the lesser horseshoe bat at Moorehall.

Key Features of Interest

The Vincent Wildlife Trust report for NPWS (McAney 2018) identified a number of features of interest and conservation measures that will underpin the Conservation Management Plan for Moorehall and Lough Carra.

The main recommendations arising from this report are that:

- the basement of the house must be retained solely as a hibernation site for the horseshoe bats;
- suitable horseshoe bat access points into the basement and flight paths surrounding it must be retained;
- no construction work can be undertaken at the house between the months of October 31st to April 30th;
- mitigation for other protected species must be implemented;
- the barn used as a maternity roost must be preserved and retained solely as such for the bats;
- key flight paths and feeding areas for the bats within the woodland must be retained;
- none of the buildings, structures or woodland used by the bats should be illuminated, including foraging sites adjacent to Lough Carra.
- Continuous Cover Forestry is recommended as the appropriate forestry policy for the habitats of the horseshoe population at Moore Hall; and
- removal of the conifers at the front of the house is carried out on a phased basis so that the bats always have vegetative cover to fly south to the woodland at the lake.

7.1.2 Baseline Assessments

The numbers of bats present at Moorehall and Towerhill are recorded in annual summer bat counts, carried out by the Vincent Wildlife Trust and the NPWS. The data show that the population trend is upwards, rising from 503 recorded individuals in June 2015 to 703 bats in June 2019¹⁷ at the two sites.

Due to the importance of Moorehall and Towerhill to the lesser horseshoe bat at a regional, national and international level, several ecological studies were previously commissioned including a recent survey in 2019, which was prepared to support the conservation and development strategy set out in this Masterplan.

Commuting routes

Commuting routes used by the bats from the barn include woodland edge, hedgerows, walls, treelines and the onsite river. It is important that these features are protected. Hedgerows and treelines form a network of links extending from Moorehall to Towerhill to the north and to and around Lough Carra to the south. They also extend westward to Lake Nagovne.

Foraging areas

The Biggane 2005 study concluded that bats are foraging within a 2-3km radius of the house and barn in broadleaf woodland, mixed woodland, hazel scrub and in lakeside riparian woodland.

The results of the Kelleher/SLR 2019 bat survey confirm the longevity of the species' foraging behaviour and highlight the importance of riparian and broadleaved woodland habitats to foraging Lesser Horseshoe Bats.

Bats from the Moorehall barn maternity roost commuted along watercourses and forest edges and concentrated their foraging along woodland edge habitats. As well as riparian habitats, the bats also focused on well-developed hedgerows, treelines and scrub and it is important that these habitats present within a 4km radius of the maternity roost are protected.

Alternative roosts

Other structures are identified as alternative roosts, that are in favourable condition and should be protected for the bats' continued use. During the 2019 study, additional Lesser Horseshoe night roosts were discovered, including the abandoned garage, public toilet at carpark; and the bridge at Lough Carra.

¹⁷ The surveys note a temporary decrease in 2016 at Moorehall site.

7.1.3 Conservation Objectives for Favourable Habitat Condition

A site-specific conservation objective¹⁸ aims to define the favourable conservation condition of a habitat or species at site level. The key objective of maintaining habitats for the Lesser Horseshoe and other bat

species at Moorehall and Towerhill in favourable condition will contribute to the maintenance of favourable conservation status of those habitats and species at a national level. Specific measures to achieve favourable status are considered below (Table 9):

Table 9 Conservation Objectives for Favourable Habitat Condition

Objectives	Favourable Habitat Condition	Comment / Target
Positive Condition of winter and summer roosts	The condition of both winter and summer roosts comprises a number of elements which may interact, including locational context, landscape connectivity, structural integrity, microclimate, levels of artificial light at night, level of disturbance by humans or predators and risk of catastrophic events, such as flooding or storms.	The target is that there is no decline in the condition of winter or summer roosts.
Condition of Winter Roosts	Suitable sites in winter generally witness low levels of disturbance and have high humidity and stable temperatures. These conditions are typically met in underground structures such as souterrains, cellars, tunnels, ice houses and natural caves (including those selected as habitat 8130 'Caves not open to the public'). Hibernacula may be abandoned or numbers of bats using the site may decline in circumstances when there is a decline in condition.	Examples of decline in condition may include, but are not limited to: <ul style="list-style-type: none"> increased use of an underground site by humans (i.e. increased disturbance) cave or tunnel closure loss of structural integrity (e.g. roof collapse in a souterrain or basement) flooding in a cave system causing entrapment and/or drowning of bats
Condition of Summer Roosts	Suitable sites in summer generally witness low levels of disturbance, have appropriate access points for lesser horseshoe bats and achieve the microclimatic conditions required for raising young. These conditions are typically met in stables, abandoned cottages and farm buildings, attics and large chimneys of ruined buildings, modern boiler houses, sheds and garages. Summer roosts may be abandoned or numbers using the site may decline due to a decline in condition.	Examples of decline in condition may include, but are not limited to: <ul style="list-style-type: none"> increased use of a site by humans (i.e. increased disturbance) loss of structural integrity (e.g. roof deterioration) closure of the lesser horseshoe bat access point(s) predator disturbance (e.g. domestic cat, pine marten) reroofing or redevelopment of the site

Objectives	Favourable Habitat Condition	Comment / Target
Number and Condition of Auxiliary roosts	Lesser horseshoe bat populations will use a variety of roosts during the year besides the main roosts listed above. The bats rely on a network of sites that may include satellite, transitional and night roosts along with summer and winter roost sites, to fulfil their lifecycle requirements within a locality. Availability of night roosts within and close to key foraging areas ensures that these remain suitable for lesser horseshoe bats. A full complement of varied roosting structures is required to maintain populations and facilitate successful reproduction.	The suitability of an auxiliary roost site including locational context, structural integrity, microclimate, levels of artificial light at night (ALAN), level of disturbance by humans or predators and risk of catastrophic events.
Extent of potential Foraging Habitat (Hectares)	Lesser Horseshoe Bats tend to forage in summer in broadleaved woodland and around riparian vegetation. A Core Sustenance Zone (CSZ) refers to the area surrounding a communal bat roost in which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony.	The target is that there is no significant decline in potential foraging habitat within 2.5km of qualifying roosts
Linear features (Kilometres)	Lesser horseshoe bats follow commuting routes from its roost to its foraging grounds and will rarely cross open ground unless it is very dark. Thus, linear features such as hedgerows, treelines and stone walls provide vital connectivity for the species, most importantly within 2.5km around each roost.	The target is that there is no significant loss of linear features within 2.5km of qualifying roosts.
Light pollution (Lux)	Lesser horseshoe bats are very sensitive to light pollution and will avoid brightly lit areas. Artificial light at night at or near roosts may impact bats in a number of ways, for example, delaying emergence time after dusk, causing abandonment of roosts when exits are lit at night and/or reducing reproductive success	The target is that there is no significant increase in artificial light adjacent to qualifying roosts or along commuting routes with 2.5km of the roosts.

Summary of Conservation Management Objectives

In summary, ongoing conservation management measures should ensure that there is:

- ✓ No significant decline in the condition of winter or summer roosts.
- ✓ No significant decline in potential foraging habitat within 2.5km of qualifying roosts.
- ✓ No significant loss of linear features within 2.5km of qualifying roosts.
- ✓ No significant increase in artificial light intensity adjacent to qualifying roosts or along commuting routes within 2.5km of those roosts.

¹⁸ NPWS (2018) Conservation objectives supporting document – Lesser Horseshoe Bat (*Rhinolophus hipposideros*) Ver. 1. Conservation Objectives Supporting Document Series. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland. www.npws.ie/sites/default/files/publications/pdf/Lesser_horseshoe_bat_supporting_document_Jan_2018_V1.pdf

7.1.4 Targeted Interventions for Biodiversity & Conservation

The following recommendations are for bats in general, as well as specific measures to safeguard the site's lesser horseshoe bat colony (although many of the recommendations for the latter species are also

beneficial for other bat species). These measures should be incorporated into the Conservation Management Plan developed for the site complex. A series of project conservation priority measures should be adopted at the earliest stages, with the following considerations prior to undertaking any measures (Table 10).

Table 10 Consideration of Priority Conservation Measures

No	Priority	Considerations prior to Action
1	Moorehall Building Roost Retention/ Enhancement and Maternity Roost Enhancement	Re-roofing Moorehall would prevent further decay of the existing structure and offer excellent roosting opportunities for bats. Access for bats should be retained or included in any repairs to buildings. The attic should be properly insulated to both warm the area and sound-proof any roost from disturbance. Gaps should be left beneath ridge tiles, lead flashing and eaves to encourage future use by bats, while retaining the water seal of the building. Additional measures include timely timber treatment, covering of water tanks; washing, repointing and plastering of key features.
2	Designated Outbuildings/ Barn	Designated bat roosts and favourable habitats to be restored, in line with the conservation management plan. Works will include the provision of artificial hibernation roosts for Vespertilionid species. Public access to the area surrounding the barn is to be prohibited and encouraged elsewhere at less sensitive locations on the site.
3	Linear Landscape Features	Treelines and hedgerows should be retained or enhanced to offer continuous corridors for bats and other wildlife to commute across the site. These should be connected to existing linear features, where possible, to ensure continuity. Native plant species should be used throughout. Native species provide more insect life than foreign varieties. Additional planting of trees would enhance the site for bats and would also serve as platforms for future bat box schemes. Varieties of particular benefit would include pendunculate oak <i>Quercus robur</i> , ash <i>Fraxinus excelsior</i> and birch <i>Betula</i> spp. in dry areas while alder <i>Alnus glutinosa</i> and willow <i>Salix</i> spp. would be suitable on wet areas.
4	Walled Garden Planting Plan – Night-scented Plants	Night-scented plants could be planted as part of landscaping, within scrub or along hedgerows to encourage night-flying insects onto the site to act as prey items for bats. A list of suggested plant species is given in Appendix 3.
5	Changes to existing trails / New Walks & Trails	The alteration or creation of trails within the Moorehall Estate will be undertaken in consideration of identified bat commuting routes and foraging areas to ensure bats will not be negatively impacted. The Vincent Wildlife Trust (2018) bat report recommends redirecting of existing trail by the barn so trail users are further from the building. This would be beneficial.
6	Bat Box Scheme	Erect c. 20 bat boxes on onsite trees to offset any loss of existing or potential roost sites during works, for Daubenton's bats or other species – (noting that Lesser Horseshoe Bats do not use bat boxes). 'Schwegler' woodcrete or concrete bat boxes have been proven to be acceptable alternatives for bats and they are readily occupied.
7	Bridges, Culverts & Tunnels	Any repointing or pressure grouting of bridges, culverts or the servants' tunnel should only proceed after an inspection of the structure for bats. Crevices within these structures should be left open for bat use where possible.

No Priority

8	Tree Felling	Any mature tree which requires felling should first be assessed for bat use. Trees, which are to be removed, should be felled during the spring months of March, April, May or autumn months of September, October or November (avoids the periods when the bats are most likely to be present) Any trees showing crevices, hollows etc. should be removed while a bat specialist is present to deal with bats found, for release at dusk. Any ivy-covered trees which require felling should be left lie for 24 hours to allow any bats beneath the cover to escape overnight. Felled timber should be retained within woodland to encourage invertebrates
9	No introduction of artificial Lighting	Artificial lighting should not be introduced as it has been shown to deter bat species from foraging. It should particularly be avoided adjacent to any bat roosting sites
10	Building Repair Timing on works in buildings harbouring bats	Any work should be undertaken (Nov-March) during winter months as bat numbers are fewer in buildings. Moorehall basement is a hibernation roost so any works need to be undertaken when these bats are absent. The basement is also used by Daubenton's (Room 3) and brown long-eared (Room 2) bats, so presence of these species also need to be considered when planning any works.
11	Building Demolition	Any demolition should be done with expectation that bats may be found. Caution should be exercised during the removal of roofing material as bats may be underneath even in winter. An experienced bat specialist should be on-hand during these operations to deal with any bats found. If discovered, the animals should be retained in a box until dusk and then released onsite.
12	Monitoring	Any mitigation measures incorporated into the development plan should be monitored for effectiveness in perpetuity and, based on the results, alterations and/or enhancements should be undertaken

Considerations prior to Action

7.1.5 Targeted Conservation Measures for Lough Carra

A series of targeted measures are recommended to enhance the ecological integrity of Lough Carra SPA and SAC, and to support the complex of habitats and species within and surrounding the lake. These include:

- The installation of a number of nesting rafts on the lake to create better nesting opportunities for ground nesting lake birds, in particular the Common Gull;
- Vegetation management on some small islands and rocky shoals to create better nesting opportunities for ground nesting lake birds, in particularly Common Gull;
- The construction of a number of bird hides at agreed (with the NPWS) and discreet locations, to

allow visitors and bird enthusiasts to appreciate the importance of Lough Carra in relation to breeding and wintering waterbirds;

- Calcareous grassland management including management of scrub encroachment on important grassland areas, especially on the lakeshore;
- Woodland management on the islands, including the removal of exotic and invasive species, and the opening of the canopy to the develop ground and shrub layers;
- The installation of an array of different bird boxes to support breeding avifauna around Lough Carra.

These measures, to be implemented in combination with the proposals at Moorehall, will enhance the overall ecological functionality of the combined sites for Lesser Horseshoe Bat, other bat colonies and a range of other species.



Mixed woodland at Moorehall

7.1.6 Strategic Action 1: Project Priorities

The following projects should be prioritised for conservation purposes:

Moorehall SAC – targeted conservation measures

1. Preparation and adoption of Conservation Management Plan (CMP)
 2. Targeted interventions for Biodiversity Enhancement & Conservation Measures
- Moorehall building enhancement of hibernation and maternity roosts
 - Restoration and enhancement of outbuildings as favourable bat roosts and habitats
 - Retention and enhancement of linear landscape features
 - Suitable planting of Walled Garden with night scented plants
 - Alteration of tracks and trails in consideration of bat commuting routes
 - Develop bat box scheme (c. 20 boxes) to offset any loss of roost sites.
 - Sensitive treatment of bridges, culverts and tunnels to optimise bat use
 - Assessment of mature tree stands for selective felling in accordance with CMP

- Avoid lighting on site as it deters bat activity, particularly near roosting sites
- Building repairs or demolition in accordance with the Conservation Management Plan
- 3. Any mitigation measures in the development plan should be monitored for effectiveness in perpetuity and, based on the results, alterations and/or enhancements should be undertaken.

Lough Carra SPA/ SAC – targeted conservation measures

4. Targeted measures to enhance the Lake's ecological integrity
- The installation of a number of nesting rafts on the lake;
 - Vegetation management on islands and rocky shoals for enhanced nesting opportunities;
 - The construction of a number of bird hides at agreed, discreet locations;
 - Calcareous grassland & scrub management on important grassland areas & lakeshore;
 - Woodland management on the islands, removal of invasive species; opening of the canopy
 - Installation of an array of different bird boxes to support breeding avifauna around Lough Carra.

7.2 Strategic Action 2: Retain Authenticity & features of Historic Environment

One of the strategic objectives is to retain the authenticity while restoring key features of Moorehall and its historic environment.

The approach in the Masterplan Strategy has been informed by a review of the historic landscape and appraisal of key features of the site (see Chapter 6 above). It is strongly recommended that the management strategies for both natural and cultural heritage within the future Nature Reserve at Moorehall and Lough Carra should be aligned to lead the development of an integrated heritage attraction.

7.2.1 Preparation of a Conservation Management Plan

A conservation management plan is a document which sets out the significance of a heritage asset, and how that significance will be retained in any future use, management or alteration, and how that will be managed. Based on the guiding principles set out in this masterplan, a conservation management plan for Moorehall and its demesne, including Towerhill, should be developed to identify detailed management measures.

They are particularly useful for sites with more than one type of asset or value, for example:

- new building in a heritage setting
- a habitat, landscape or open space, with recreation and heritage
- a museum or archive in a historic building
- a historic building or monument in its wider urban or rural context

A single conservation management plan would bring all relevant considerations together. The plan should address the following items:

- a management strategy for a building, habitat, landscape or urban park
- new work such as object conservation, repair, landscape restoration, habitat creation or treatment
- new design
- maintenance
- day to day operations

The plan will be developed based on a detailed building survey of the features on the site.

7.2.2 Partial Restoration of Moorehall & Outbuildings

The historic Georgian house at Moorehall is the key cultural heritage asset within the masterplan site and its basement is the principal roosting habitats for the protected lesser horseshoe bat colonies.

A full building survey would be required prior to any detailed designs for proposed interventions. The building survey itself must comply with the requirements of the Habitats Directive.

A conservation management plan will be required prior to commencement of the design work for the following projects.

The priority intervention at Moorehall is the repair of the roof, which is essential to the maintenance of habitat for the Lesser Horseshoe Bat. Re-roofing would prevent further decay of the existing structure and would offer further roosting opportunities.

Detailed designs should be also prepared to facilitate limited visitor access to the hall interior and balcony. Access would require innovative interpretation, including access via a staircase to the balcony to see the historic view of lake.

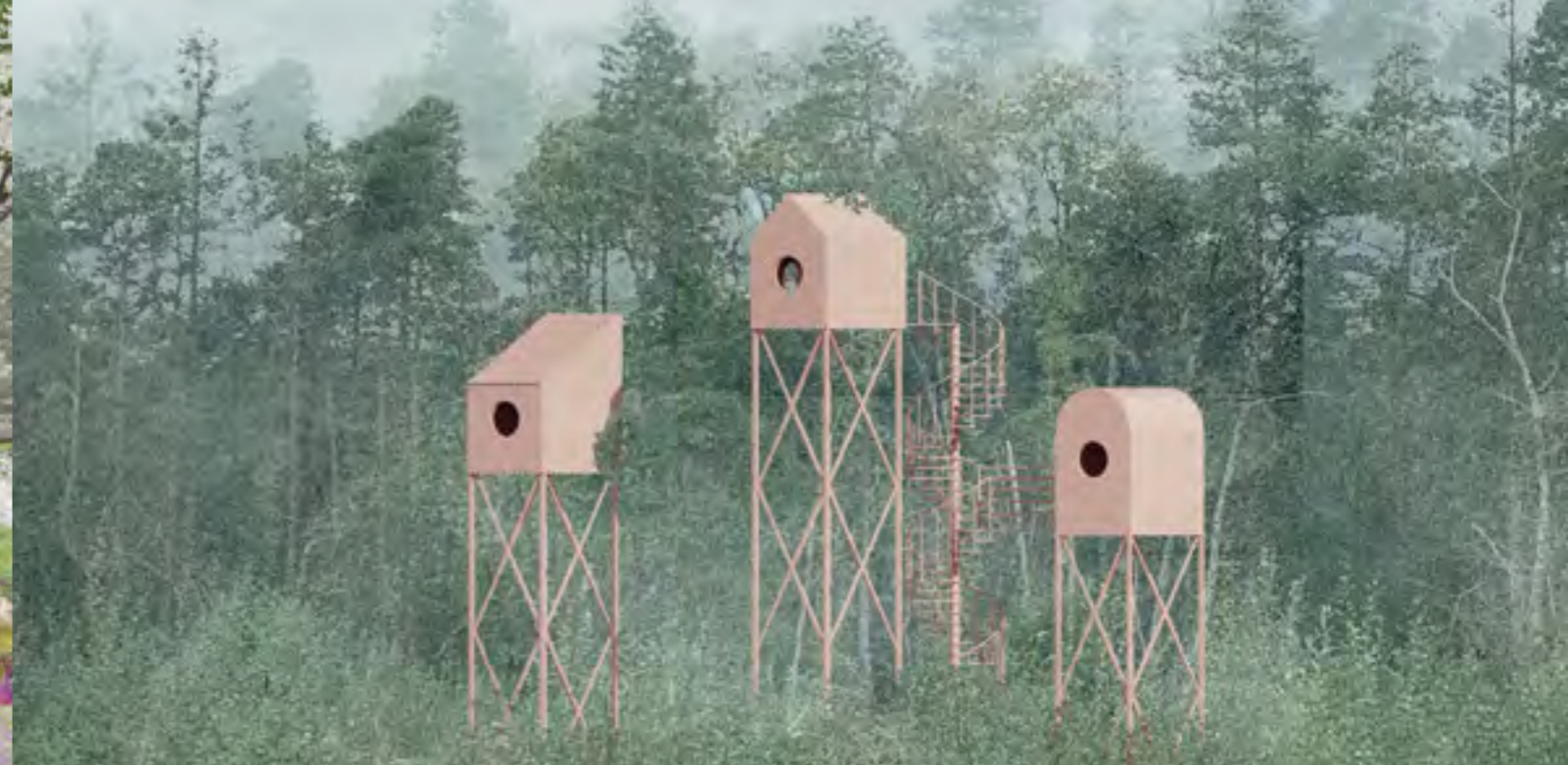
Former outbuildings designated as areas for bat roosts habitats are to be restored for this purpose only, in line with the conservation management plan prepared for the historic structures and features within the site. Such works will include the provision of artificial hibernation roosts for Vespertilionid species.

Access to the area surrounding the designated barn (granary) outbuilding is to be minimised and encouraged elsewhere at less sensitive locations on the site.



Above and right: Artist's impression of restored Walled Garden at Moorehall

© Mayo County Council



Above and right: Artist's impression of bird watching towers at Moorehall

© Mayo County Council

7.2.3 Restoration of the Historic Landscape

The historic landscape in the immediate environs of Moorehall has the potential to be restored through sensitive refurbishment within the context of conservation and protection of bat roosting habitats and foraging grounds.

The following landscape design principles are recommended for ongoing development of Moorehall demense:

- Prioritise the restoration of existing tracks / paths following routes from 1839 (subject to requirements of bat conservation measures); and appropriate surface treatments to be agreed.
- Reinstatement of the viewing corridor from the house to the lake, by gradual removal of conifers.
- Re-surface existing/ more recently developed used tracks / forestry paths (not on 1839 plan), particularly where these are linked to the long distance 'Lost Treasures Trail' walking route.
- Develop technical and environmental feasibility study in relation to indicative Tower Hill trail route.

As the proposals for the development of the site progress, further work is required to ensure that the management and appropriate development or restoration of these historic features is consistent with the relevant planning policy.

7.2.4 Strategic Action 2: Project Priorities

The following projects should be prioritised for the historic environment:

1. Carry out a survey of historic built elements on the site
2. The preparation of a conservation management plan and detail design proposals for the restoration/conservation of the following historic features:
 - House, walled garden, avenues, farmyard, view corridor
 - Historic landscape – returning some parts of Moorehall environs to original layout
3. Carry out a detailed tree survey to be undertaken by a qualified arboriculturist.
4. Prepare a detailed planting Plan, involving a phased strategy for tree clearance (based on bat conservation requirements) and selective clearing of the view corridor to the front of the house, selective clearance of trees along the main entrance
5. Apply for licence under the Forestry Act 2014 for tree felling in the area in front of the house and identify areas where compensatory replanting is possible and prepare planting plans for same.
6. Designation of the site as a Nature Reserve by Ministerial Order.

7.3 Strategic Action 3: Develop & Enhance the Visitor Experience

7.3.1 Developing the Visitor Infrastructure

Due to the rural location of Moorehall in an area of minimal visitor infrastructure, it is considered appropriate to develop a Visitor Centre to act as a focal point for visitor services. A preferred site was identified to the rear of the site to the northeast of the House. This will allow:

- Development of an appropriately sized visitor centre with associated car parking and play facilities.
- Avoidance of adverse impacts on the visual setting of Moorehall House, its associated buildings and structures and to facilitate the reinstatement of the view from the House to the lake;
- Avoidance of impact on the ecologically sensitive areas of existing forestry which will be retained; and
- Provision of a site in closer proximity to the village of Carnacon that improves the likelihood and feasibility of developing physical linkages with the village.

The new Visitor Centre will be easily accessible from an adjacent (new) car park entrance and will accommodate a range of multi-purpose spaces:

- Interpretation that explores links with the Moores

and key events in wider Irish history will also highlight the significance of the site to children and their families.

- Opportunities to support national and transnational partnerships particularly stronger Irish/French linkages and cross border peace projects.
- Cultural & Literary Space
- Year round exhibitions providing a range of interpretation materials; and
- Access to local guides who are knowledgeable about different aspects of the site and its history.
- Interpretation that explores links with the Moores and key events in wider Irish history will also highlight the significance of the site to children and their families.
- Options for non-weather dependent indoor activities.

The Visitor Centre will allow visitors to enjoy superb interpretation with world class audio-visual displays and exhibitions.

Visitor services such as parking, food/ café, WC and meeting rooms will ensure that visitors' practical needs are met, while providing guidance and signposting to all the features to be enjoyed at Moorehall and Lough Carra.

7.3.2 Experience Development Framework

A 'Moore Hall inspired' thematic and experiential interpretative framework has been developed (section 4.1) to highlight the distinctive qualities of Moore Hall and to contextualise the types of experience that visitors should find there. The resulting themes are rooted in the vision and qualities that make Moore Hall special.

Three major themes that best embody the unique sense of the place were developed through the consultation process. The three themes are:



These are supported by Inspirers which colour the thematic context and activities that create meaningful experiences.

Fáilte Ireland's Experience Development Framework model, based on international best practice, was used to define specific recommendations for visitor experiences (see *Moorehall is a place of discovery and innovation which, from the moment you arrive, will invite you to explore its treasures of natural and cultural heritage, immersed in the pathways of history while savouring the wonders of nature – an altogether unforgettable experience!*).

Three core Destination Experience Themes and six related inspirers were presented in an outline Thematic Framework in Section 4.1, which is summarised below:

The destination experience themes are devised to embody the unique sense of Moorehall and Lough Carra– its scale, environment, history and culture.

These themes and inspirers should be embedded in all future experience development and communication of the brand promise:

Moorehall is a place of discovery and innovation which, from the moment you arrive, will invite you to explore its treasures of natural and cultural heritage, immersed in the pathways of history while savouring the wonders of nature – an altogether unforgettable experience!

Primary Themes



7.3.3 Linking Opportunities to Experiences at Moorehall

Based on the opportunities available to be enjoyed at Moorehall and Lough Carra by the target visitor segments (see Chapters 2, 3 above), five overarching experiences were identified, linked to the three defining interpretative themes above.

The inspiring elements will support the development of a detailed interpretative plan for the site. These key visitor experience opportunities are presented below in Table 13.

Table 11 Opportunity Experience Matrix for Moorehall

Thematic Experience	Key Opportunity	Compelling & Memorable Experiences	Comment
Conservation and Management of Site WN	<ul style="list-style-type: none"> Implement a range of Conservation measures to support nature conservation Develop a Conservation Management Plan to ensure proactive conservation of species and habitats. Develop a series of nature-based tourism and educational experiences. Establish a national Nature Reserve to ensure long term security of the bat species, while encouraging awareness and education about these incredible species. 	<ul style="list-style-type: none"> ✓ Opportunities to learn more about protected species – at Moore Hall and Lough Carra – bats, bat habitats through guided bat walks or seasonal bat counts. ✓ Observe bats 'virtually' from indoor location (non-weather dependent). ✓ Enhance habitat by critical emplacement of bat boxes and bunkers in key locations. ✓ Guided seasonal tours to key bat and bird observation sites. ✓ Birdwatching from bird hides and boat trips at Lough Carra and surrounding woodlands 	<ul style="list-style-type: none"> • For conservation purposes, visitors to be excluded from basement and farmyard habitats. • Propose replanting of farmyard with (potted) bat-friendly species that will not overtop the buildings – allow young bats security upon emergence. • Recommendations for bat bunkers/ bat boxes in key locations to enhance habitat • Training of guides to take seasonal tours to key bat observation sites.

Thematic Experience

Opportunity 2: Cultural History of Moore Family, House & Gardens

JBIT
TAL

Key Opportunity

- Moorehall Demesne
 - Development of new-build Visitor Centre
 - Re-roofing to conserve fabric of house and protection of basement habitats for bats.
 - Consideration of authentic restoration of drawing room on ground floor, based on photographic evidence as a 'Big House' experience.
 - Consider emplacement of steel staircase to first floor Balcony to provide views to lake.

- Walled Garden as a separate experience to house
 - Restore dovecot
 - Emplace pathways
 - Plant with bat friendly native species, based on arboricultural advice
 - Consider local engagement re. recreation of the vegetable garden (based on local memory)

Opportunity 3: Natural History & Beauty of Lough Carra

WN
TAL

- Embrace highest level of nature conservation measures, with particular reference to water quality on Lough Carra
- Consider provision of rafts on lake to support gull populations
- Management of island vegetation re. invasive species
- Predator control
- Guided boat trips to historic sites & islands
- Bird hides on shore and woodlands

Compelling & Memorable Experiences

- Excellent visitor centre with compelling interpretation to promote the story of Moorehall and the Moore family in the context of Irish history.
- Guided tours of house and wooded demesne; its historic landscaping and layout
- Literary links of Moore Family to Irish literary revival
- National Centre conveying the story of the ancestral 'Big House' and its particular way of life
- Cultural centre to tell the story of the 'Year of the French' and to host Franco-Irish gatherings and conferences in collaboration with the French Embassy and other French institutions based in Ireland

- Restoration of the Walled Garden as a haven of biodiversity; traditional plants and pathways; dovecot
- Explore features of historic landscape such as mature trees, old stone wall, outbuildings
- Guided walks through garden on plant species, learn about bats and biodiversity measures;
- Hear the garden's history; the people who designed it and those who worked here.

- Boat trips on Lough Carra to Kiltoom Point, Castle Island, Otters Point, castles
- Guided boat trips to key points of interest such as Kiltoom Point, Castle Carra, Church Island and Otters Point
- Explore the Doon Peninsula and meet the Hunter Gatherer
- Boat trips to many castles and islands along the lake
- Link Lough Carra experiences to the wider 'lake district' of the Joyce Country and Western Lakes Geopark
- Birdwatching at Lough Carra from safe hides

Comment

- Appropriate Assessment required prior to works
- Focus on the authentic attributes of the site
- Align to original layout as much as possible
- Minimise disturbance of existing site features such as mature trees, old stone wall, outbuildings

- Conservation measures to be elaborated in Conservation Management Plan for Natura 2000 sites at Moorehall and Lough Carra
- Build links to the Joyce Country and Western Lakes Geopark

Thematic Experience

Opportunity 4: The Enchanted Forest

JBIT
WN

Key Opportunity

- Creation of Recreation Park within the forest
- Use of network of recreational tracks for walking, cycling, nature exploration etc
- Develop recreational trail links to Towerhill and other 'bat' places
- Commission Sculptures to be dotted throughout the forest in key locations

Compelling & Memorable Experiences

- Short loops walks and trails within Moorehall demesne
- Walks and trails to Kiltoom Point, Towerhill (tower and mill) and Carnacon village
- Longer trails with off-road walking and cycling options to Ballintubber Abbey and local heritage sites
- Moorehall as a 'discovery point' on the Cong to Westport 'Lost Treasures Trail'
- Sensitively designed recreation park in forest estate:
 - Network of themed walking trails to enjoy the site's complex natural and cultural heritage (e.g. bats, family lore, plants and tree species);
 - Sculptural trails based on aspects of the estate's nocturnal wildlife (bats, owls, badgers etc);
 - Family-friendly adventure activities such as tree-top walks and discovery activities at Kiltoom and Derrinrush Wood (with Coillte);
 - Connectivity to Doon Forest, an area of 'enchanted' native woodlands on the northern shores of Lough Carra, in concert with the landowner.
- Development of walk/cycle Greenway to Towerhill demesne to the Old Mill within the estate, with links to guided nocturnal bat walks.

Opportunity 5: Creation of Destination – People & Places

TAL

- Link key heritage attractions in environs of Moorehall
- Connect strongly to Lost Treasures Trail
- Develop inter-ticketing of attractions
- Work to develop food, accommodation and visitor services in the catchment with service providers

- Guided shuttle bus trips to local heritage attractions including Ballintubber Abbey, Museum of Country Life, Aughagower, Ballinrobe
- Options for food and drink must be improved locally
- Accommodation options need to be enhanced
- Bespoke packages for groups developed in partnership with local providers
- Provide shuttlebus pick-up service for long distance walkers to and from accommodation.

Comment

- Consultations will be required with local community and private landowners to develop linkages in wider catchment of Moorehall, Carnacon and Towerhill.
- Walks and trails to be diverted from bat sensitive sites.
- No emplacement of artificial lighting at bat sensitive sites.

- Limited food, drink and accommodation options require to be addressed with local service providers
- Ballinacorney House offers excellent accommodation
- Pure Activities could offer tailored guided trips.
- Consider bike hire/ e-bikes to/ from Carnacon, Castlebar, Ballinrobe, Ballintubber and Moorehall.



Artist's impression of a pontoon on Lough Carra
© Mayo County Council

7.3.4 Experiences based on Thematic Framework

Building on the opportunity matrix above (Table 12), several thematic experiences were defined that may be appropriate, given the sensitivities of the natural and historic environments at Moorehall and Lough Carra.

A series of thematic experiences to showcase the beauty and unique character of Moorehall and Lough Carra that could be tailored specifically for key audiences are presented below.

A detailed Interpretation Plan will be required to train personnel and local guides in the delivery of such experiences.

Theme 1: Wild Nature @ Moorehall Experiences



Appropriate Experiences

- ✓ Learning about Nature and understanding its vulnerability
- ✓ Understanding Importance of Conservation
- ✓ Immersing in the natural environment

Experience Theme 1

WILD NATURE @ MOORE HALL

HERO Products

- Orientation & guide at the Visitor Centre
- Watching Bats on video in real time
- Guided Bat tours & talks at Moorehall & Towerhill
- Participating in Bat counts / Night bat walks
- Nature watching on the demesne grounds
- Hiking through the Nature Reserve along trails
- Exploring the biodiversity of the Walled garden
- Taking a guided boat trip around Lough Carra
- Bird Watching on Lough Carra
- Walk and forage on the Carra lakeshore
- Learn about trees in the Forest School
- Explore the Doon peninsula and meet the Hunter Gatherer
- Follow the Sculpture Trail through the Enchanted Forest

Supporting Experiences

- Visit Ballintubber Abbey and be intrigued by its story
- Walk through Nature at Doon Peninsula
- Take a hike to the tower at Towerhill
- Go for a dip in the Lake

Ancillary Experiences

- Enjoy a pint at Hughes of Carnacon, a traditional country pub
- Share traditional songs and music at the Carra Lodge

Theme 2: Journey Back in Time Experiences



Appropriate Experiences

- ✓ The old way of life
- ✓ Linking communities along the lake edge
- ✓ Journey of discovery – trail
- ✓ Experiences that awaken the senses
- ✓ Experiences that provoke thought, discovery meaning

Experience Theme 2 JOURNEY BACK IN TIME @ MOORE HALL

HERO Products	<p>Orientation & guide at the Visitor Centre</p> <p>Delve into history at Moorehall</p> <p>Walk through the ruins at Moorehall and experience the sense of loss</p> <p>Meet George Moore and hear of his fascinating life</p> <p>Meet President Moore and hear his tragic story</p> <p>Stories of the Moores and their impact on the Literary Renaissance and the evolution of the Irish nation</p> <p>1798 Rebellion and President John Moore</p> <p>Read a George Moore book</p> <p>See the original Death Mask of George Moore at the Visitor Centre and his first edition books</p> <p>Go back in time with VR technology, experience an older way of life</p> <p>Walk to the Moore family graves at Kiltoom Cemetery by the lakeshore</p> <p>Enjoy the viewing point from restored balcony at Moorehall</p> <p>Explore the Moorehall and Towerhill demesnes</p> <p>Take a visit to the Old Mill at Towerhill</p> <p>Take a boat trip to visit George Moore's Grave at Castle Island</p> <p>Literary Tour combined with boat trip to Castle Island</p> <p>Visit to Ballintubber Abbey and overnight at Ballinafad or Ballintubber</p>
Supporting Experiences	<p>Visit Ballintubber Abbey and be intrigued by the story of the Abbey and its pilgrim heritage</p> <p>Visit Burriscarra Abbey</p>
Ancillary Experiences	<p>Visit the National Folk Collection at Turlough House Country Life Museum</p> <p>Enjoy a pint and good food at the Carra Lodge</p> <p>Share traditional songs and music at the Carra Lodge</p>

Theme 3: Discover Treasures Almost Lost Experiences



Appropriate Experiences

- ✓ Encouraging calmness reflection and creativity
- ✓ Featuring arts inspired or rooted in place
- ✓ Thought provoking

DISCOVER TREASURES ALMOST LOST @ MOORE HALL

Experience Themes	
HERO Products	<p>Orientation & guide at the Visitor Centre</p> <p>Delve into history at Moorehall – walk through the restored ruins</p> <p>Walk through the Tunnel behind Moorehall</p> <p>Explore the restored Farm at Moorehall with AR technology</p> <p>Explore Lough Carra and learn its secrets</p> <p>Explore Burriscarra</p> <p>Find the ancient rath at Ballintubber</p> <p>Meet St. Patrick at Ballintubber Abbey Visitor Centre</p>
Supporting Experiences	<p>Visit Ballintubber Abbey and be intrigued by its story of pilgrims through the centuries</p>
Ancillary Experiences	<p>Stay a night at Ballinafad House</p> <p>Visit the National Museum of Country Life, Turlough House</p> <p>Meet food producers at the Walled Garden</p> <p>Walk the Tóchar Phádraig to climb Croagh Patrick</p> <p>Visit Aughagower and Cong Abbeys</p> <p>Visit the National Folk Collection at Turlough House</p> <p>Enjoy a pint and food at the Carra Lodge</p> <p>Share traditional songs and music at the Carra Lodge</p>

7.3.5 Strategic Action 3: Priority Projects

1. Consider the development of a world class, innovative Visitor Centre, subject to servicing and requirements of the integrated Conservation Management Plan
2. Restoration of key elements of Moorehall, house, garden, farm, historic tracks and trails subject to requirements of the integrated Conservation Management Plan
3. Refinement of the Experience Opportunity framework to inform detailed Thematic Interpretation Plans
4. Development of linkages with Towerhill, Ballintubber Abbey, Burriscarra Abbey and other historic attractions
5. Work with local service providers to provide excellent ancillary experiences.

7.4 Strategic Action 4: Improving Linkages, Interpretation & Signage

Moorehall is located inland from Mayo's Wild Atlantic Way and an alternative strategic proposition is required to draw visitors into the area. To achieve this, compelling visitor experiences must be developed, supported by excellent services and linkages to the wider area, to connect Moorehall to a larger visitor base.

7.4.1 Development of Visitor Hubs

To address the tourism infrastructural deficits, tourism hub towns should be identified to service Moorehall's visitor needs. Both Castlebar and Ballinrobe have the potential to perform as hubs and anchor the visitor experience, while functioning as a touring base for visitors.

Tourism destination town

A tourism destination town is where a visitor can overnight, and in which a cluster of products, services, activities and experiences are offered, as well as intangible elements such as character, image and identity.

In tandem with the development of Moorehall, it is important that measures are introduced to improve the performance of 'visitor hubs' in closest proximity to the site. By providing linkages from these hub towns, it is possible to make the Moorehall experience easier to access, particularly from an overseas visitor perspective.

7.4.2 Improving Linkages

Improved transport access and recreational links to the Moorehall site are key issues for sustainable management of the site. As well as planning for car/coach access, the strategy should focus on increasing options for sustainable transport such as local bus, cycling, e-biking and walking.

Connectivity to other heritage sites and services in the wider locality will be paramount in creating a sustainable 'destination'. Consideration should be given to a shuttle bus service linking various sites along the proposed Lost Treasures Trail from visitor hub towns, which would offer a means of promoting Moorehall as a discovery point to more general visitors. It is noted that there is no bus service currently serving Ballintubber Abbey either, but a link to this and Moorehall from, for example, Castlebar, might be sustainable given current visitor projections.

There is scope to improve recreational access to and from Moorehall by the development of a network of on-site and local trails, as well as long-distance walking/ cycling routes. Development of walking and cycling connectivity at Moorehall-Lough Carra-Towerhill, Carnacon, Ballintubber Abbey, Doon and Rusheen, with links to the Lost Treasures Trail where possible, will create new experience opportunities and offer a full day's outing.

Access to Lough Carra for guided boat trips could offer educational nature-based experiences, with interpretation of the natural and cultural history of the lake, particularly in the context of the proposed Moorehall Nature Reserve and the Joyce Country & Western Lakes Geopark.

The management team should also work with local activity providers to develop a 'basket' of accredited 'Moorehall' services such as walks leaders, e-biking, guiding, boating and storytelling.

The development of recreational trails will require in-depth consultations with local community actors and landowners in the wider vicinity.

7.4.3 Validating the Interpretation Framework

Interpretation refers to on-site communication designed to enable visitors to appreciate and understand the unique qualities of Moorehall and its 'spirit of place'. It should stimulate awareness of the unique features of the site, as well as curiosity to discover more.

Interpretation may be used strategically to invite visitors to experience the special cultural and natural qualities of Moorehall and the lake, while providing information and relevant insights. Good interpretation should influence how visitors understand Moorehall and Lough Carra in its complexity, and will contribute profoundly to making the place both distinctive and memorable. Strategically, it is important to supplement this with interpretation that presents the wider (landscape) perspective of Lough Carra and the UNESCO Geopark.

Based on the emerging experience framework being devised for Moorehall, detailed thematic interpretation plans will be required to create meaningful experiences, combining activity and interpretation themes.

Training in delivery of the interpretation themes and framework will be required for key staff. Engagement and training of local guides would provide truly authentic stories and memories of the Big House experience.

7.4.4 Lough Carra links to the candidate UNESCO Geopark

Developing strong links from Lough Carra to the wider 'lake district' of the candidate Joyce Country and Western Lakes Geopark provides an opportunity for Moorehall to be positioned as part of this more strategic cluster. Lakes and their shorelines provide very attractive environments and opportunities to overlook and be active beside or on the water. Such experiences sit at the heart of motivations for many visitors.

It is worth drawing some comparisons between the Geopark and the Lake District National Park in England, which is a hugely popular destination for tourists with its stunning natural landscape and association with Wordsworth and Beatrix Potter. This approach is strongly linked to the suggested approach regarding the need for destination hub development. The Geopark's UNESCO designation and brand should be used to set Moorehall and Lough Carra within a wider geological, social, cultural and economic context, with scope for community engagement.

7.4.5 Signage

An integrated low impact signage strategy will be required to signpost visitors to the relatively remote location of Moorehall from each of the main feeder routes to the site (N5/N84/ N60). This should be in line with Mayo County Council's signage strategy. Appropriately located and branded signage will direct the visitor to Moorehall, as well as subsidiary signage to direct access to activities, trails and boat hire.

7.4.6 Online Signposting

There is a considerable amount of online reference material relating to Moorehall and the Moore family, but very little information in relation to the practicality of accessing the site; activities; attractions or accommodation in the surrounding area.

A dedicated 'Moorehall' website will be required to provide information on such primary tourist information, as well as information on seasonal conservation measures, activities such as bat walks; maps of recreational trails within and adjacent to the site; and contact details for activity operators.

Potential domain names www.Moorehall.ie/ www.Moorehallnaturereserve.ie and other similar variations (.com/ .net) etc should be secured by Mayo County Council as soon as possible.

7.4.7 Strategic Action 4: Priority Projects

1. Work with destination hub towns of Castlebar and Ballinrobe to identify visitor servicing requirement and sustainable transport links where feasible.
2. Develop improved linkages from Moorehall to wider visitor heritage attractions through creation of recreational walking and cycling / e-cycling trails, in consultation with local communities.
3. Design a detailed Interpretation Plan to inform experience development and engagement with visitors
4. Develop and refine the Interpretation Framework for Moorehall and Lough Carra in its wider context.
5. Training of staff and guides in use of the Interpretative Framework
6. Create linkages with the candidate UNESCO Joyce Country & Western Lakes Geopark with specific reference to the unique geology and ecology of Lough Carra
7. Devise an appropriate branded signage strategy in line with Mayo County Council guidelines.
8. Create dedicated website for the Moorehall and Lough Carra Nature Reserve (name to be confirmed) to signpost visitors to the site. MCC to lock down the domain names as soon as possible.
9. Prepare a transport assessment / sustainable transport strategy based on the projected visitor numbers of 90,000 per annum.



Artist's impression of car park at Moorehall

© Mayo County Council

7.5 Strategic Action 5: Infrastructure, Servicing and Business Model

This initiative focuses on the practicalities of implementation identified in this Masterplan. It sets out what needs to be considered in order to develop a viable approach to project development and long term management of Moorehall as a natural and cultural heritage asset in County Mayo.

7.5.1 Infrastructure Plan

A robust infrastructure plan needs to be developed to anticipate and meet the needs of visitors to the site.

Water & Wastewater

Due the predominantly unserved nature of the site, water supply and wastewater are important considerations that should be assessed prior to commissioning architectural drawings. This is to ensure that the new build elements of the masterplan comply with the requirements of the Mayo County Development Plan 2016-2021 in relation to water and wastewater (see Section 5.3 above) .

It must be demonstrated that proposed developments such as the Visitor Centre and related servicing will not have significant adverse effects on water quality or water quantity in the area, particularly Lough Carra, and can provide a potable water supply in accordance with EU Drinking Water standards.

Car Parking

It is noted that the forecast visitor draw at Moorehall is some 90,000 visitors per annum and, whilst the site will be open all year, generally peak days will comprise weekdays during the spring/summer and weekends during the autumn/winter. This therefore comprises an average of about 275 typical visitor days per year, and so an average of some 327 visitors per day (clearly some seasonal variation). Allowing for coach parties (likely to be more during the summer when the numbers will be higher), and an average car party size of 2.5 people, this equates to some 131 car visits per day on average, but in the summer this will undoubtedly be higher. The 96 car spaces would accommodate this average demand if length of stay was restricted to ensure a regular turnover, but would not allow for some visitors to park all day and undertake the circular walks, nor accommodate peak summer demand, without creating overspill, unless a substantial number of the daily visits were to be by way of coaches.

On this basis, a transport assessment is required to determine an appropriate strategy to focus visits by coach, and to identify an appropriate level of car parking in light of the forecast numbers of visitors, particularly in the summer. Otherwise, it cannot be demonstrated that the current level of parking is adequate i.e. 96 car spaces, and that the level of traffic activity through Carnacon is not significant.

7.5.2 Determining the Business Model

To ensure the long term sustainability of the Moorehall project, it is proposed that the commissioning team develop robust costings and operating model to ensure effective management of the site for future generations.

The financial viability of the Moorehall project will require detailed costings of the proposals contained in the Masterplan.

A number of assessments have been identified that are required prior to commissioning of any capital works including Conservation Management Plans for the site (bat habitats and the historic house and demesne); structural surveys of Moorehall house; and detailed site servicing studies for a Visitor Centre (water supply, waste water, parking, traffic management), among others. All must be carried out prior to commissioning of detailed designs for any elements.

The operational model must be considered at an early stage in the development process to ensure viability of the Moorehall and Lough Carra visitor attraction. Key questions include how the site will be managed, staffed and resourced on an ongoing basis? Will it be managed as a Mayo Local Authority historical and amenity asset, or as a Nature Reserve by NPWS? Fáilte Ireland have developed useful guidance¹⁹ for operational management models for Local Authority historical attractions and assets, which examines issues of capital costs, restoration, conservation, curation and day-to-day management of the attraction as a visitor facility.

The key requirement is to ensure financial viability and sustainability in advance of detailed architectural designs being prepared. This analysis should be carried out in consultation with the local community and will inform the detailed design process by helping to define the right mix of activities and spatial requirements particularly within the new visitor centre hub.

Once completed, it is recommended that detailed costings for each of the capital projects proposed in the Masterplan be commissioned from experts in the historic/ conservation architecture field.

A Business Plan should be commissioned to identify:

- Optimal operational model to be adopted
- Operational management and maintenance costs;
- Capital development & constructions costs, including design fees, levies, taxes, etc;
- Staffing requirements, including seasonal adjustments;
- Revenue options (admission income, car parks charges, guiding and membership and visitor centre income streams such as retail/merchandising, café/ catering, events and equipment rentals).

7.5.3 Strategic Action 5: Priority Projects

1. Assess servicing options for new build elements in the masterplan.
2. Preparation of a detailed site Infrastructure Plan
3. Consider the capital costing requirements
4. Consider and agree the preferred operational model in collaboration with the community
5. Prepare a business case for shortlisted proposals based on this model.
6. Establish potential revenue streams
7. Develop an integrated Business Plan for Moorehall

¹⁹ Fáilte Ireland (2018). Review of Operating Models for Local Authority Visitor Attractions. Report prepared by SLR Consulting on behalf of Fáilte Ireland.

An aerial photograph of a small, wooded island in a body of water. The island is covered in dense green trees and has a small house with a red roof and a cleared field in the center. The water around the island is a mix of dark blue and light green, indicating varying depths and vegetation. A topographic map overlay is visible in the upper left quadrant of the image, showing contour lines in white and yellow. The text "8.0 Implementation Plan" is overlaid in the upper right quadrant in a white, sans-serif font.

8.0 Implementation Plan

8.0 Implementation Plan

Implementation of the recommendations of the Masterplan is critical for the long term ecological functionality of the internationally important Moorehall, Lough Carra and Towerhill designated sites for Lesser Horseshoe Bat and other species and habitats. This will underpin the assignment of the integrated site complex as a national Nature Reserve. Priority actions will be ‘front-loaded’ at the earliest stages of implementation, and others will be implemented over the lifetime of the Masterplan and beyond, to ensure the delivery of the Conservation Management objectives.

8.1 Priority Actions

Priority actions are those that require to be ‘front-loaded’ at the earliest stages of implementation to secure the habitats of internationally protected bat species. These should be incorporated into a larger Conservation Management Plan, but will be delivered

irrespective of plans regarding the conservation interest of the entire complex (see Strategic Actions, 8.2 below). Specific priority actions for Moorehall (Table 11) and Lough Carra (Table 12) are presented below.

Table 13 Priority Actions for Lough Carra

Nesting Rafts to support bird species on Lough Carra	<ul style="list-style-type: none"> Install of a number of nesting rafts on the lake to create better nesting opportunities for ground nesting lake birds, in particular, the Common Gull;
Vegetation Management of Islands/ Shoals	<ul style="list-style-type: none"> Vegetation management on some small islands and rocky shoals to create better nesting opportunities for ground nesting lake birds, in particularly Common Gull;
Grassland Management	<ul style="list-style-type: none"> Calcareous grassland management including management of scrub encroachment on important grassland areas, especially on the lakeshore;
Woodland Management	<ul style="list-style-type: none"> Woodland management on the islands, including the removal of exotics and invasive species and the opening of the canopy to the develop the ground and shrub layers;
Birdwatching/Educational Measures	<ul style="list-style-type: none"> The construction of a number of bird hides at agreed (with the NPWS) and discreet locations, to allow visitors and birds enthusiast to appreciate the importance of Lough Carra in relation to breeding and wintering waterbirds;

Table 14 Priority Actions for Moore Hall

Moorehall House Restoration/enhancement of the basement of the house	<p>Proposals will integrate the hibernation requirements of bat colony and will recognise limitations on the timing of any works.</p> <ul style="list-style-type: none"> Monitoring of temperature, humidity, air flows in basement over one year, prior to design of detailed works. Restoration/enhancement will address water ingress, structural integrity of the basement Maintenance of all flight paths to Room 6, re-plastering of ceiling where required, Installation of bat boxes as alternative roosts prior to and during any construction work (for other bat species) Use of passive detectors as part of a year-long study of the horseshoe bats to provide information on the activities of the bats in advance of any works.
Moorehall Farmyards & Barns Enhancement of the barn/granary	<p>Proposals will recognise limitations on the timing of any work during the sensitive breeding season.</p> <ul style="list-style-type: none"> Detailed plan to develop the entire farmyard for bat conservation. Additional access and security measures will be delivered at the barn (granary) Securing of farmyard wall and selective planting of internal courtyard to create additional habitat for bats Walks and trails will be diverted away from the farmyard and farm buildings and this area will be developed solely as a refuge for bat species.
Retention, Enhancement & Security of underground passages at Moorehall	<ul style="list-style-type: none"> Retention and enhancement, including security measures for the internal underground passage. Retention and enhancement, including security measures for the external underground passage.
Reroofing of Moore Hall House.	<p>Action must be developed gradually to integrate the hibernation requirements of the bat colony and will recognise the limitations on the timing of any works.</p> <ul style="list-style-type: none"> Reroofing of Moorehall house to address water ingress into the basement, to prevent arch collapse and deterioration of the winter roosting site. Create new roosting opportunities for bats under re-roofed house
Provision of new Hibernation Roosts	<ul style="list-style-type: none"> Provision of new underground hibernation roosts Provision of new overground hibernation roosts
Protection of Commuting & Foraging routes	<ul style="list-style-type: none"> Protect and enhance existing commuting routes, in particular commuting routes between Moorehall and Towerhill Maintain linear features to protect and enhance foraging routes within 4km of Moorehall and Lough Carra
Emplacement of Data-loggers in Roost Sites to measure and monitor habitat condition	<ul style="list-style-type: none"> Installation of monitoring equipment (incl. cameras) and data loggers into roost sites (monitoring temperature, humidity & noise).

8.2 Action Plan

The Action Plan for Implementation sets out the key measures to be achieved over the lifetime of the Masterplan, linked fundamentally to the conservation objectives for Moorehall, Lough Carra and Tower Hill. The Plan (Table 13) also captures the Priority Actions for implementation within defined timeframes.

Table 15 Implementation Plan for Strategic Actions

	Responsibility	Timeframe		
		S	M	L
Timeframe : Short = 1-2 years; Medium = 3-5 years; Long = 5-10 years				
Strategic Action 1: Conservation Management for the Lesser Horseshoe Bat				
1.1 Develop detailed Conservation Management Plan to protect and conserve bat colonies, in support of Nature Reserve status	NPWS			
1.2 Implement targeted interventions for Biodiversity Enhancements to support and enhance Bat habitats				
1.3 Implement detailed Project Conservation Measures as set out in the Masterplan				
1.3.1 Moorehall – Roost retention/enhancement: Restoration of key elements of Moorehall House (roof, basement), barn and farmyard to enhance bat habitats and ecology (with restricted visitor access to key bat hibernation and roosting zones):	MCC, with NPWS			
<ul style="list-style-type: none"> • Re-roofing of Moorehall House to prevent further decay of the existing structure and to offer enhanced roosting opportunities for bats. Access for bats should be retained or included in any repairs to buildings. • Attic should be properly insulated to both warm the area and sound-proof any roost from disturbance. Gaps of 12 to 20mm should be left beneath ridge tiles, lead flashing and eaves to encourage future use by Vespertilionid bats. These can be provided while retaining the water seal of the building. • Rhinolophid bats need larger access holes through which they can fly directly therefore an opening of at least 100mm x 300mm should be included to facilitate this species' access to the roof space. • Consider Towerhill ruin and outbuildings as an integral part of bat conservation in respect of Moorehall colonies. 				

	Responsibility	Timeframe		
		S	M	L
1.3.2 Moorehall Farm Outbuildings	MCC / NPWS			
<ul style="list-style-type: none"> • Former outbuildings designated as areas for bat roosts and favourable bat habitat to be restored in line with the conservation management plan, to include the provision of artificial hibernation roosts for Vespertilionid species. • Rebuilding of farm walls and suitable bat-friendly plantings to be part of the works. • Public access to the designated barn and farmyard to be avoided and encouraged elsewhere at less sensitive locations on the site. 				
1.3.3 Linear Landscape Features	MCC/ Coillte / NPWS			
<ul style="list-style-type: none"> • Linear landscape features such as treelines and hedgerows should be retained or enhanced to offer continuous corridors for bats and other wildlife to commute across the site. • These should be connected to existing linear features, where possible, to ensure continuity. • Native plant species should be used throughout as native species provide more insect life than foreign varieties. • Additional planting of trees would enhance the site for bats and would also serve as platforms for future bat box schemes. Varieties of particular benefit would include pedunculate oak Quercus robur, ash Fraxinus excelsior and birch Betula spp. in dry areas while alder Alnus glutinosa and willow Salix spp. would be suitable on wet areas. 				
1.3.4 Walled Garden Planting Plan – Night-scented and pollinator friendly plants	Mayo County Council/ / NPWS / Local Community			
<p>Night-scented and pollinator friendly plants could be planted as part of landscaping, within scrub or along hedgerows to encourage night-flying insects onto the site to act as prey items for bats. A list of suggested plant species is given in Appx 3.</p>				
1.3.5 Changes to Existing Trails and Provision of New Walks and Trails	Mayo County Council/ / NPWS / Local Community / Coillte			
<p>The alteration of existing or creation of new walks and trails within the Moorehall Estate will be undertaken in consideration of identified bat commuting routes and foraging areas to ensure these will not be negatively impacted. The Vincent Wildlife Trust bat report recommends redirecting the existing trail by the barn so trail users are further from the building.</p>				
1.3.6 Bat Box Scheme: a box scheme could be erected on onsite trees to offset any loss of existing or potential roost sites for Daubenton's bat and other species. 'Schwegler' woodcrete or concrete bat boxes have been proven to be acceptable alternatives for bats and they are readily occupied. It is suggested that 20 such boxes should suffice.	Mayo County Council/ / NPWS			
<p>Consider creation of hibernation bunkers elsewhere on the site, including the old Ice House.</p>				
1.3.7 Bridges, Culverts and Servants' tunnel: Any repointing or pressure grouting of bridges, culverts or the servants' tunnel should only proceed after an inspection of the structure for bats. Crevices within these structures should be left open for bat use where possible.	Mayo County Council/ / NPWS			

	Responsibility	Timeframe
<p>1.3.8 Tree Felling (must align with recommendations of VWT (McAney 2018)recommendations)</p> <ul style="list-style-type: none"> Any mature tree which requires felling should first be assessed for bat use. Trees, which are to be removed, should be felled during the spring months of March, April, May or autumn months of September, October or November. Felling during the spring or autumn months avoids the periods when the bats are most likely to be present. Any trees showing crevices, hollows etc. should be removed while a bat specialist is present to deal with any bats found. Such animals should be retained in a box until dusk and then released onsite. Care should be taken when removing branches as removal of loads may cause cracks or crevices to close, crushing any animals within. These cracks should be wedged open prior to load removal. Any ivy-covered trees which require felling should be left lie for 24 hours after cutting to allow any bats beneath the cover to escape overnight. If health and safety is not compromised, any dead trees or snags should be allowed to stand. Felled timber should be retained within woodland to encourage invertebrates. 	Mayo County Council/ NPWS	
1.3.9 Lighting: Lighting _ gcf be avoided as it has been shown to deter some bat species from foraging. It should especially be avoided adjacent to any bat roosting sites.	MCC	
1.3.10 Building Repair Timing: Any work on buildings harbouring bats should be undertaken within the winter months (Nov-March) lessening impacts to bats. Moorehall is a lesser horseshoe bat hibernation roost so any works on the cellar area need to be undertaken when these bats are absent. As the cellar area is also used by Daubenton's (Room 3) and brown long-eared (Room 2) bats, the presence of these species also need to be considered when planning any works. It may be possible to undertake any works on a phased basis by avoiding or temporarily sectioning off areas in use by bats so they remain undisturbed.	MCC	
<p>1.3.11 Building Demolition</p> <ul style="list-style-type: none"> Any demolition should be done carefully with the expectation that bats may be found. Caution should be exercised during the removal of roofing material as bats may be underneath even in winter. An experienced bat specialist should be on-hand during these operations to deal with any bats found. If discovered, the animals should be retained in a box until dusk and then released onsite. 	MCC	
1.3.12 Monitoring: Any mitigation measures incorporated into the development plan should be monitored for effectiveness in perpetuity and, based on the results, alterations and/or enhancements should be undertaken.	MCC / NPWS	
1.4 Based on EU LIFE measures for Lough Carra, Implement conservation measures for ecology, water quality and habitats	NPWS	

	Responsibility	Timeframe
1.4.1 Implement enhanced LIFE measures for conservation of Lough Carra's unique environment, working with local stakeholders and the candidate UNESCO Joyce Country and Western Lakes Complex GeoPark	NPWS/ MCC	
1.4.2 Implement measures for predator control	@BI E	
1.4.3 Implement seasonally appropriate reed mowing and vegetational management of islands and shoals	NPWS	
1.4.4 Emplace of nesting rafts to support the protected gull population on the lake.	NPWS	
1.4.5 Consider suitable nature trails and walks to showcase the unique geology and ecology of Lough Carra (see Rec. 3.3.4 below)	NPWS with MCC/ Coillte	
1.4.6 Emplace bird hides to promote birdwatching and understanding of Lough Carra's bird species and habitats.		

Strategic Action 2: Retain the Authenticity & restore Key Features of the Historic Environment

2.1 Carry out a survey of historic built elements on the site at Moorehall.	MCC	
2.2 Prepare a Conservation Management Plan for restoration/ conservation of historic environment that is fully aligned with the CMP for bat conservation.	MCC	
2.3 Carry out a detailed tree survey to be undertaken by a qualified Arboriculturalist	Arboricul'ist/ MCC	
2.4. Prepare a detailed Planting Plan, involving a phased strategy for tree clearance and selective of the view corridor to the front of the house, selective clearance of tree along the main entrance	Arboricul'ist/ NPWS/ MCC Conservation Architect	
2.5 Apply for licence under the Forestry Act		
2.6 Identify areas where compensatory replanting is possible and prepare planting plans for same.		
Design and implement a Native Woodlands Scheme to enhance native biodiversity at Moorehall.		
2.7 Restoration of the Walled Garden based on the historical design and planting scheme.	MCC with NPWS	
2.8 Designation of the site as a Nature Reserve by ministerial order.	NPWS	

Strategic Action 3: Develop the Visitor Experience (where this is compatible with SAC designation and subject to Appropriate Assessment)

3.1 The Creation of a strategic partnership of Mayo County Council, NPWS and Coillte for integrated future management of the forest estate and proposed recreation park.	MCC/ NPWS/ Coillte	
3.2 Consider design options for a Visitor Centre at proposed location in north of site with related servicing/ parking/ access Visitor Centre to showcase the fascinating and complex history of the Moore family and tapestry of stories, linked to the unique role of the 'Big House' in Ireland's history, as well as landownership, famine, revolution and the flowering of Irish literary renaissance.	MCC with NPWS	
3.3 Using the Experience Opportunity framework, create compelling Experiences & Activities, based on identified Themes (and subject to AA for relevant proposals):	MCC / NPWS	



	Responsibility	Timeframe		
3.3.1 Bat conservation: learning and awareness experiences, from introduction and interpretation at the proposed Visitor Centre to guided walks in key locations, seasonally adjusted based on conservation objectives.	NPWS with MCC/ Fáilte Irl	■	■	■
3.3.2 Interpretation of Moore Family and historic house; connections to key points in Irish history; linked to development of integrated Interpretative Framework for Moorehall and Lough Carra	MCC with Fáilte Ireland	■	■	■
3.3.3 Develop the Walled Garden as a distinctive experience of a historical garden and sensory displays of traditional species	MCC	■	■	■
3.3.4 Develop a Recreational Park, subject to requirements of integrated Conservation Management Plan and AA for key proposals	MCC/ NPWS/ Coillte	■	■	■
• Network of themed trails to enjoy the site's complex natural and cultural heritage (e.g. bats, family lore, plants and tree species)	MCC/ NPWS	■	■	■
• Develop walking and nature trails through state owned lands at Lough Carra and Coillte lands at Towerhill Wood (68 hectares),	NPWS/ Coillte	■	■	■
• Develop new recreational greenway from Moorehall to Towerhill with visitor trails to the Old Mill	MCC/ Coillte/ landowners	■	■	■
• Develop lands at Derrinrush Wood at Otter Point (28 hectares) which could facilitate an extended shoreline walk past Kiltoom Point with stunning viewpoint across Lough Carra; discovery points for nature watching	MCC/ NPWS/ Coillte	■	■	■
• Develop the Enchanted Forest experience with sensitively designed treetop walks at Kiltoom/ Otters Points (subject to AA)	NPWS/ Coillte	■	■	■
3.4. Create a Sculpture Trail throughout the demesne, using local materials to showcase features of the Nature Reserve (bats, otters, gulls, badgers, owls, etc). and Moore family history	NPWS/MCC	■	■	■
3.5 Provide access to Lough Carra for guided boat trips; ecology, geology, historical castles and houses (subject to measures recommended in Rec. 1.4 above)	NPWS/ MCC with GeoPark	■	■	■
3.5.1 Identify pontoon sites and develop at appropriate locations for safe boat access and egress		■	■	■
3.5.2 Provide training for local guides and ghillies in visitor management and interpretation of Lough Carra: ecology and history		■	■	■
3.6 Develop connectivity to Doon Forest, an area of 'enchanted' native woodlands on the northern shores of Lough Carra, in concert with the landowner.		■	■	■

Strategic Action 4: Strategic Linkages, Signage and Interpretation

4.1 Work with destination hub towns of Castlebar and Ballinrobe, and Carnacon/ Ballintubber, to identify visitor servicing requirement and sustainable transport links where feasible	MCC	■	■	■
4.2 Develop improved linkages from Moorehall to wider visitor heritage attractions through creation of recreational walking and cycling / e-cycling trails, in consultation with local communities, including Ballintubber Abbey, Burriscarra, and other historic attractions in the destination – in consultation with local community and landowners as appropriate.	MCC	■	■	■

	Responsibility	Timeframe		
4.3 Design a detailed Interpretation Plan to inform experience development and engagement with visitors; Refine the Interpretation Framework for Moorehall and Lough Carra in its wider context	MCC/ Fáilte Ireland	■	■	■
4.4 Training of staff and local guides in use of the Interpretative Framework	MCC/ NPWS	■	■	■
4.5 Create linkages with the candidate UNESCO Joyce Country & Western Lakes Geopark with specific reference to the unique geology and ecology of Lough Carra (see Recommendation 1.4 above)	NPWS/ MCC	■	■	■
4.6 Devise an appropriate branded signage strategy in line with Mayo County Council guidelines	MCC/ Fáilte Ireland	■	■	■
4.7 Create dedicated website for the Moorehall and Lough Carra Nature Reserve (name to be confirmed) to signpost visitors to the site. MCC to lock down the domain names for website as soon as possible.	NPWS/ MCC MCC	■	■	■
4.8 Prepare a transport assessment / sustainable transport strategy based on the projected visitor numbers of 90,000 per annum.	MCC	■	■	■

Strategic Action 5: Infrastructure Servicing and Operational Model

5.1 Assess servicing options for new build elements in the masterplan and carrying out percolation tests if required.	MCC	■	■	■
5.2 Prepare an integrated Infrastructure Plan	MCC	■	■	■
5.3 Consider and agree the preferred Operational Model in collaboration with the community – consider a formal strategic alliance among Mayo County Council, NPWS and Coillte and local community stakeholders.	MCC/ LEADER / NPWS	■	■	■
5.4 Prepare a Business Case for shortlisted proposals based on this model.	MCC/ LEADER / NPWS	■	■	■
5.5 Establish potential revenue streams	MCC/ LEADER / NPWS	■	■	■
Monitoring & Evaluation of Implementation Plan – annually		■	■	■

9. Next Steps

There are several stages to advance prior to securing consent for the projects identified in this Masterplan.

The following tasks are required:

- I. Carry out statutory Public Consultation in accordance with the requirements of the SEA Directive,
- II. Review submissions on the Public Consultation of the Draft Masterplan,
- III. Finalise the Masterplan on the basis of an agreed set of changes;

- IV. Identify Proposed Operating Model and prepare detailed costings and business case with respect to Masterplan Proposals;
- V. As a conclusion of Task IV, identify a shortlist of Phase 1 Projects;
- VI. For Phase 1 Projects, prepared detailed architectural designs and further studies as required. Further studies include completion of building surveys, supervised by a qualified conservation architect, Tree Survey and method statement carried out by a qualified arboriculturist with ecological expertise as well as a conservation management plan which will guide the management and development of the site in the longer term.



Artist's impression of picnic area

© Mayo County Council



Artist's impression of new visitor centre

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Appendices



Stone Park

M O O R I O R D A N
M O O R E H I L L

Mayre Hall

Appendix 01

Feedback from Community Consultation Events, Carnacon, Co Mayo

Carnacon Workshops – Carnacon Community Centre and Carnacon National School 24th June 2019

Site Name	Map	Inputs	Comments
Carnacon Community Workshop Evening Session			
Moorehall	1	Camping/hammocking, education, photography, historical research, architecture, nature walks, biodiversity	Potential activities
Moorehall	1	Children for walks, orienteering, canoeing, sailing, kayaking, fishing, storey telling, horse drawn caravan tours	Potential activities
Moorehall	1	Balance between all activities, impact on LHB impact on commuting routes, missed opportunity by not using house for interpretive centre.	Concerns
Moorehall	1	Developed beyond consolidation (LHB), lack of facilities.	Concerns
Walled Garden	1	Walled garden – 1) research original plant veg, fruit, flowers varieties. (local knowledge). 2) source and replant with such. Good study and much more interesting the common varieties we see every day. 3) seasonally sell produce to fund local charities and garden maintenance	History – ideas
Moorehall		Camp site, walking trails, H2O activities, planned activities and talks, guided walks for all aspects, in river management of Annie's River.	Potential activities
Moorehall	1	Bike and car park, toilet area, benches, native woodland scheme, LHB and Lough Carra	Potential activities
Moorehall	2	Concerns regarding overdevelopment of the site	Concerns
Moorehall	2	Low on cosmetics and high on the wilderness	Ideas
Moorehall	2	Restoration without overdoing it.	Ideas
Moorehall	2	Increases in human traffic – cyclists, cars	Concerns
Moorehall	2	Signage!!	Concerns
Moorehall	2	Walking the dog	Current activities
Lough Cara	2	Swimming spot, regularly used	By the dock close to the Moorehall property
Lough Cara	2	Fishing – gone lower regularly?	Last three words hard to translate
Moorehall/Lough Cara	2	Research	School groups who regularly go there
Moorehall	2	Official cycling	Potential activities
Moorehall	2	Future local history project	Potential activities
Moorehall	2	Still generations alive who remember the house	History
Moorehall	2	How best to restore the gardens	History

Site Name	Map	Inputs	Comments
Moorehall/Lough Cara usage	2	Walking/cycling trails and other local attractions	Potential activities
Moorehall	2	Not a site on its own	comment
Moorehall	2	Our Irish Heritage	History
Moorehall	2	Campsite, locality, employment	Potential activities
Moorehall	2	Linkages to lane attractions Ballintubber, etc	Connections with surrounding area
Moorehall	2	Good interpretation	Potential activities
Moorehall	2	All year access and seasonal uses	Potential activities
Moorehall	2	Links with other local attractions	Connections with surrounding area
Moorehall Activities	2	Schools programming- art, history, environment, English/irish, biology and sciences – for Primary, Secondary and Tertiary levels	Potential activities
Moorehall	2	Hostel Accommodation to hold people locally.	Potential activities
Moorehall Usage	3	Use it as part of the educational awareness programme in the new booklet which we're printing and distributing to all the primary schools in the L. Carra catchment	Potential activities
Moorehall Usage	3	N.B. a limit on where people are allowed to go. Control trek access to sensitive areas. Ensuring that structures are put in place.	Concerns
Castle Island	3	Castle island, Moore's grave is a disgrace. Graveyard in Killtoon – Moore family graveyard to be restored.	Concerns
Moorehall Activities	3	To take groups of people including children, societies and schoolchildren to see the various bio-diversity attractions. To walk and enjoy the environment during all seasons of the year.	Potential activities
Moorehall Usage	3	Used for photography, leisure walking, explore with the children, the house, the forestry and the lake.	Current activities
Moorehall Usage	3	For the peace and tranquillity and our conscious(ness) of the history associated with the home (appreciate George's literary descriptions). Enjoy the lake for fishing (fly-fishing)	History
Lough Carra	3	Opportunity to develop the historical aspect of the entire lake – interpretive (enter castles, causeways, crannogs, bronze age fortified wall, priests cave, including Sean na Sagent (sp?). Broadband	History
Moorehall Activities	3	6 miles each way. Man prepared to put 2 boats in the lake with electric motors for trips from Moorehall down to Ballintubber Abbey with stops at Moores Island and Church Island	Potential activities
Moorehall	3	Sensitively positioned driving- like Kylemore Abbey. Walled garden and building, local employment	develop Moorehall like Kylemore Abbey
Moorehall Activities	3	All the leisure pursuits mentioned earlier. Enticement by the placement activities, in different locations around the site to lead people on.	Potential activities
Connectivity	3	Opportunity to tie in with the geopark project (a link which could be developed)	Potential connection



Site Name	Map	Inputs	Comments
Lough Carra	3	Boats: Invasive Species and inappropriate motors- bylaw to permit the loud purr of an engine	Concerns
Moorehall	3	1) Litter problem – litter bins not being emptied 2) Disturbance to bats- swallow roosts, starling roosts 3) To develop the site sensitively in terms of its tourist potential and protecting species issue with dog fouling and vandalism. 4) Water quality issue in the lake. Do not know where the sewage is being discharged. 5) Interpretive centre located in or near the house (on the site).	Concerns
Moorehall Activities	4	Recreational – playground (joining house), link to Ballintubber Abbey, as a day tour.	Potential activities
Moorehall	4	Local Access/ Priority – car park fit for purpose. Concerns: Lighting, (cctv), vandalism, dogs (not in control), hidden cameras (infrared). Dangers: House Structure., signage.	Concerns
Moorehall Activities	4	Walking, cycling, swimming, tour of house. Kiltoom tour, visit Castle Island (George Moore's resting place), boat, picnics, courting in the tunnel, walk Connors island when too shallow. Ghosts, photography, scare in the woods at Halloween, fundraiser.	Potential activities
Moorehall Activities	5	Walking all year round, cycling	Current Activities
Moorehall	5	Maintenance works carried out to quality standard and not left alone. Roads need upgraded and maintained and surfaced from Ballinrobe to Castlebar, need M&R orientation to site.	Concerns
Moorehall	5	How are you going to cut out vandalism? Playground, café, beech tree, access from Ballinrobe. Free wifi on site.	Concerns, Potential activities
Walled Garden	5	Mountain Biking (natural forest floor and A20 maintenance track)	Potential activities
Moorehall	5	Opps: balanced sustainable development each area and theme	Comment
Moorehall	5	Walking/chilling out	Current activities
Moorehall	5	Explore ruins and garden	Current activities
Moorehall	5	Balanced development targets – historical and preservation aspects and level of intervention	Concerns
Moorehall Activities	5	Continuation of mountain biking	Current activities
Moorehall Activities	5	Kayaking, swimming, picnic, fishing	Potential activities
Moorehall Activities	5	Possible overuse/ excessive tourist numbers, possible camping / carbreakers?(illegible)	Concerns
Connectivity	5	Geopark interpretation panel	Potential connections
Moorehall	5	Rubbish/dumping and other damage	Concerns
Lough Carra	5	Eutrophication of Lake	Concerns

Site Name	Map	Inputs	Comments
Carnacon National School Public Consultation			
Moorehall	6	More bins	Concerns
Moorehall	6	Frank the fish	Comment
Moorehall	6	Playground	Potential activities
Moorehall	6	Build some toilets	Infrastructure
Moorehall	6	Build a new pigeon house	Infrastructure
Moorehall Activities	6	Saturday/Christmas markets, coffee shop, market at stables.	Potential activities
Moorehall	6	You should have a playground	Potential activities
Moorehall	6	Have a sign telling people not to kill the fish in the lake.	Signage
Moorehall	6	tour booklet to look at learn about animals	Potential activities
Moorehall	6	Conservatory to look at fish	Infrastructure
Moorehall	6	Telescope underwater	Infrastructure
Moorehall	6	Boat rental	Potential activities
Moorehall	7	Advertise Kiltoom more	Signage
Moorehall	7	Holiday homes because we get a lot of tourists	comment
Moorehall	7	A playground for kids	Potential activities
Moorehall	7	Install places where people have to pick up their dogs poo! Around the whole area	Concern
Moorehall	7	Put fences around the paths	Infrastructure
Moorehall	7	There used to be a swing by the carpark	Potential activities
Moorehall	7	A place that provides rented boats and fishing rods	Potential activities
Moorehall	7	Picnic areas, toilets, family areas and facilities in the walled garden	Potential activities
Moorehall	7	Clean the toilets	Concern
Moorehall	7	A little place full of benches	Infrastructure
Moorehall	7	Plant apple trees in wall garden and a bench to sit and look at the view at the lake	Potential activities
Moorehall	7	Create a proper camping site	Potential activities
Moorehall	7	Have fact signs at the house, lake, gates, boat house, and any other landmark that is interesting	Signage
Moorehall	7	Full restoration of the house This English Heritage document provides details of projects where bats can be integrated and protected in heritage structures that are being restored.	Comment
Moorehall	7	Camping site, full on, no electricity	Potential activities
Moorehall	7	Please try and stop the litter.	Concern
Moorehall	7	Install bins around the whole area.	Concern

Appendix 02 – Planning Policy Context

Regional Spatial & Economic Strategy 2020-2032

The RSES for the Northern and Western Region is grounded in the UN Sustainable Development Goals 2030 and in the EU Green Deal. Relevant objectives include:

- (a) to support working with relevant landholders and recreational/tourism agencies to increase access to the Countryside and our Coastal areas, and to ensure maintenance and access to the existing network of trails, paths, etc. and
- (b) to support the maintenance of, and enhanced access to state lands, such as National Parks, Forest Parks, Waterways together with Monuments and Historic Properties, for recreation and tourism purposes. A key element of the tourism strategy will be activity tourism, particularly in rural areas, National Park's, uplands, coasts and rivers.

Other relevant topics addressed in the RSES include landscape (5.3), natural heritage (5.4), natural assets (5.5) and nature networks including greenways, bogs and peatways (5.8).

Mayo County Development Plan 2014 – 2020

The Mayo County Development Plan 2014 – 2020 sets out the following policy considerations, relevant to the development of Moorehall.

Tourism Objectives

In relation to tourism, the following County Development Plan objectives are stated:

TM-02 It is an objective of the Council to support and promote sustainable tourism development, accessible to all throughout the County and to work in partnership with tourism organisations, and adjoining Local Authorities where necessary, in securing the development of tourism enterprises and infrastructure in suitable locations where it can be demonstrated that the development will not have significant adverse effects on the environment, including the integrity of the Natura 2000 network, residential amenity or visual amenity.

TM-02 It is an objective of the Council to ensure that tourism related accommodation such as holiday homes, hotels, caravan/camping parks etc., are located within existing settlements where there is existing infrastructure provision to service the development and where they can contribute to maintenance of essential rural services, unless it is proposed to reuse an existing structure outside

a settlement and in such cases where it can be demonstrated that the development will not have significant adverse effects on the environment, including the integrity of the Natura 2000 network, residential amenity or visual amenity.

TM-03 It is an objective of the Council to continue to provide where possible, or encourage the provision of, walkways and cycleways throughout the county where it can be demonstrated that the development will not have significant adverse effects on the environment, including the integrity of the Natura 2000 network or visual amenity, and to promote the County as a premier walking/cycling destination in the Country.

Landscape Design

As well as being a site designated for the protection of the Lessor Horseshoe Bat, Moorehall is principally a historic landscape that requires sensitive restoration. The following policies of the Mayo County Development Plan 2014-2020 apply:

- **LP-01** It is an objective of the Council, through the Landscape Appraisal of County Mayo, to recognise and facilitate appropriate development in a manner that has regard to the character and sensitivity of the landscape and to ensure that development will not have a disproportionate effect on the existing or future character of a landscape in terms of location, design and visual prominence.
- **LP-02** It is an objective of the Council that all proposed development shall be considered in the context of the Landscape Appraisal of County Mayo with reference to the four Principal Policy Areas shown on Map 3A Landscape Protection Policy Areas and the Landscape Sensitivity Matrix (Figure 3), provided such policies do not conflict with any specific objectives of this Plan.
- **LP-03** It is an objective of the Council to protect the unique landscape of the County which is a cultural, environmental and economic asset of inestimable value.

Views and Prospects

VP-01 It is an objective of the Council to ensure that development does not adversely interfere with views and prospects worthy of preservation and protection as outlined on Map 4, or on the views to and from places and features of natural beauty or interest (e.g. coastline, lakeshores, protected structures, important historic sites) when viewed from the public realm. Relevant views and scenic routes identified in the County Development Plan are identified in Figure 5.

Natural Heritage

NH-01 It is an objective of the Council to protect, enhance, conserve and, where appropriate restore:

- Candidate Special Areas of Conservation, Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas and proposed National Heritage Areas, Statutory Nature Reserves, Ramsar Sites and Biogenetic Reserves, including those listed in the Environmental Report documenting the Strategic Environmental Assessment of this plan and any modifications or additional areas that may be so designated during the lifetime of the plan.
- Natural habitats and plant and animal species identified under the Habitats Directive, Birds Directive, Wildlife Act and the Flora Protection Order, or any other relevant legislation that may be implemented during the lifetime of the plan.
- Features of natural interest and amenity, which provide a unique habitat for wildlife including ecological networks (including ecological corridors and stepping stones), riparian zones, hedgerows, stone walls and shelterbelts.
- Bogs, fens and turloughs listed in the Environmental Report documenting the Strategic Environmental Assessment of this plan.
- g) Surface waters, aquatic and wetland habitats and freshwater and water dependent species through the implementation of all appropriate and relevant Directives and transposed legislation.
- h) Trees or groups of trees protected under Tree Preservation Orders listed in the Environmental Report documenting the Strategic Environmental Assessment of this plan, as well as trees and woodlands of particular amenity and nature conservation value, or which make a valuable contribution to the character of the landscape, a settlement or its setting.

NH-04 It is an objective of the Council to fully integrate wildlife and biodiversity considerations into all areas of the Council's roles and responsibilities and into all its works and operations.

NH-05 It is an objective of the Council to increase awareness of the importance of the natural heritage of the County and to promote education, knowledge and pride in our natural heritage.

NH-06 It is an objective of the Council to support the implementation of the National Biodiversity Plan.

NH-07 It is an objective of the Council to promote best practice in the control of invasive species in the carrying out of both local authority and private development.

NH-08 It is an objective of the Council to assist in the control of native and non native invasive or harmful species which represent a serious threat to our environment, fresh water systems and lakes.

NH-09 It is an objective of the Council to utilise appropriate opportunities to enhance and create wildlife habitats where they arise.

Architectural Heritage

It is an objective of the Council to protect buildings and structures included in the Record of Protected Structures (RPS) which forms part of the Mayo County Development Plan. Moorehall is identified within this plan as a protected structure and the following projects apply:

AH-03 It is an objective of the Council to ensure that any development, modification, alteration, or extension affecting a Protected Structure and/or its setting is sensitively designed and sited and is appropriate in terms of the proposed materials, scale, density and layout, impact on historic features and junction with the Protected Structure and would not detract from the special interest, character and setting of the Protected Structure.

AH-04 It is an objective of the Council to promote and improve the understanding of the architectural heritage of Mayo.

AH-08 It is an objective of the Council to require that proposals for development within historic gardens, demesnes and estates include an appraisal of the designed landscape prior to the initial design of any development, so that this evaluation informs the design and respects the built heritage and horticultural elements of the site.

AH-10 It is an objective of the Council to promote the sympathetic maintenance and re-use of vernacular built heritage and to encourage the retention of original fabric such as windows, doors, renders, pub/shop-fronts, roof coverings and interiors etc.

AH-11 It is an objective of the Council to promote the sympathetic maintenance of traditional features and other built heritage such as stone walls and other elements such as post-boxes, water pumps, paving etc.



AH-13 It is an objective of the Council to promote a high quality built environment by encouraging excellence in design (both rural and urban); and innovative design and site layout solutions that address concerns of environmental sustainability, with regard to matters such as energy efficiency, use of materials etc.

The Planning Application Process

Where a project is being progressed by the Local Authority, planning permission is applied for under Part 8 of the Planning and Development Regulations 2001-2015, and the procedure is set out in Part 11, Section 179 of the Planning and Development Act 2000 as amended. However the provisions for part 8 do not apply for development identified as part of this Masterplan.

The main difference between a Part 8 and a Part 10 comes down to whether the development will require an EIAR. Projects which would likely have significant effects on the environment would be subject to a Part 10 irrespective of the size of the project and the Part 8 process would not apply.

An application under Part 10 is an "application for approval" to An Bord Pleanála, i.e. an application to the Board by a local authority for approval of proposed development to which section 175 of the Act applies. Section 175 states that

S 175.—(1) Where development belonging to a class of development, identified for the purposes of section 176 (development which may have significant impacts on the environment), is proposed to be carried out—

(a) by a local authority that is a planning authority, whether in its capacity as a planning authority or in any other capacity, or

(b) by some other person on behalf of, or jointly or in partnership with, such a local authority, pursuant to a contract entered into by that local authority

Whether in its capacity as a planning authority or in any other capacity, within the functional area of the local authority concerned (hereafter in this section referred to as "proposed development"), the local authority shall prepare, or cause to be prepared, an F591[environmental impact assessment report] in respect thereof.

consultation with the Board needed in this instance to obtain guidance on what documentation will be needed for this Part 10. Precluded from the Part 8 process include any maintenance or repair to a protected structure.

Applications for approval for Local Authority Developments made to An Bord Pleanála under 177AE

Similarly if Appropriate Assessment is required, applications for approval for Local Authority Developments must made to An Bord Pleanála under 177AE of the Planning and Development Act, 2000, as amended. When considering a proposal under section 177AE, An Bord Pleanála must have regard to:

- the likely effects on the environment of the proposed development,
- the likely consequences for proper planning and sustainable development in the area in which it is proposed to situate the development, and
- the likely significant effects of the proposed development on a European site.

Expectations in relation to the plans/particulars to be lodged and the level of detail to be provided with the plans/particulars will be proportionate to the scale and complexity of the proposed development and characteristics of the receiving environment. For all cases, An Bord Pleanála expects that the project is accurately described in drawing and written form and its full implications relating to all relevant considerations including any mitigation measures proposed are clearly set out in the documentation.

An Bord Pleanála may:

- approve with or without modifications;
- approve in part only with or without modifications; and
- refuse to approve.

An Bord Pleanála may attach conditions as it sees appropriate including in relation to the construction, financing or provision of a facility or service constituting a community gain.

On receipt of An Bord Pleanála's decision, the local authority is required to make a copy of the decision and the Natura Impact Statement available for public inspection and/or purchase.

Information required by An Bord Pleanála under plans, particulars and other considerations is set out in Guidelines for Local Authorities issued by the ABP²⁰.

Plans:

The nature and extent of the proposed development should be fully described in drawing form including provision of

- site location plan
- scaled site layout plan,
- plans, elevations and sections of all aspects of the proposed development for which approval is sought:
- Insofar as is relevant to the application for approval being made and having regard to the specific requirements as set out in s. 177AE, note should be taken of the provisions of articles 23 and 83 of the Planning and

Development Regulations, 2001 (as amended) concerning plans, drawings and maps lodged.

- Where the application relates to proposed development remote from a recognised settlement, the site location map should identify the location of the proposed development site relative to the nearest identifiable settlement.
- Details in relation to proposed plant, infrastructure or equipment (for example proposals for waste water treatment facilities or water pipelines) should be provided as far as possible. This should include plans and elevations (including in the context of the structures to which they may be affixed), sections and technical specifications.
- Construction methodology statements describing the full extent of all aspects of the proposed development including location of any site compounds, car parking, materials storage areas, lagoons etc. and mitigation measures where proposed.

Particulars: Effects on the environment of the proposed development include:

- full description of proposed development including details of construction and operational phases and impacts, likely emissions and/or discharges, phasing, and any mitigation measures proposed;
- protected Structures, Architectural Conservation Area (ACA), archaeological sites or ancient monuments or other built heritage etc. immediately impacted upon or in vicinity whose setting might be affected;
- impact on other designated sites such as Natural Heritage Areas;
- adequacy of the public or other water supply;

- public sewerage facilities and capacity to facilitate the proposed development;
- availability and capacity of surface water drainage facilities and any history of flooding relevant to the site;
- flood risk assessment in accordance with The Planning System and Flood Risk Management – Guidelines for Planning Authorities (November 2009);
- hydrological/hydrogeological assessment of project;
- assessment under the Water Framework Directive and associated regulations including any capacity of receiving waters to assimilate any additional discharge loadings in accordance with water quality standards and objectives;
- assessment of landscape status and visual impact, as appropriate;
- carrying capacity and safety of road network serving the proposed
- development;
- the likely significant impact arising from the proposed development, if carried out including impacts on amenities of properties in vicinity;
- air, odour and noise emission assessments; and
- any Special Amenity Area Order (SAAO) which may be affected by the proposed development. The likely consequences for proper planning and sustainable development in the area in which it is proposed to situate the development
- justification for the project;
- main Development Plan provisions relating to the subject site and surrounding area including any relevant Core Strategy provisions;
- relevant planning history relating to the subject site and the surrounding area;
- relevant national, regional and local policies; and
- description of use of adjoining, abutting or adjacent lands. The likely significant effects of the proposed development on a European site (the Natura Impact Statement – NIS)

²⁰ pleanala.ie/publications/2013/aaenglish.pdf

Appendix 03

List of night-scented plant species to attract bats.

The following selection of native and non-native garden plant species produce their scent at night and so attract night-flying invertebrates as a food source for bats.

Bedding plants

Nottingham catchfly	<i>Silene nutans</i>
Night-scented catchfly	<i>S. noctiflora</i>
Bladder campion	<i>S. vulgaris</i>
Night-scented stock	<i>Matthiola bicornis</i>
Sweet rocket	<i>Hesperis matronalis</i>
Evening primrose	<i>Oenothera biennis</i>
Tobacco plant	<i>Nicotiana affinis</i>
Cherry pie	<i>Petasites hybridus</i>
Soapwort	<i>Saponaria officinalis</i>

Scented herbs

Chives	<i>Allium spp.</i>
Borage	<i>Borage officinalis</i>
Lemon balm	<i>Melissa officinalis</i>
Marjoram	<i>Origanum vulgare</i>
Mint	<i>Mentha spp.</i>

Climbers

European honeysuckle	<i>Lonicera caprifolium</i>
Italian honeysuckle	<i>L. etrusca superba</i>
Japanese honeysuckle	<i>L. japonica halliana</i>
Native honeysuckle	<i>L. periclymenum</i>
White jasmine	<i>Jasminium officinale</i>
Dogrose	<i>Rosa canina</i>
Sweetbriar	<i>R. rubiginosa</i>
Field rose	<i>R. arvensis</i>
Ivy	<i>Hedera helix</i>
Bramble	<i>Rubus spp. v</i>

Appendix 04

Recommended Conservation Measures to support the Lesser Horseshoe Bat at Moorehall and Lough Carra.

Recommended Conservation Measures to support the Lesser Horseshoe Bat at Moorehall and Lough Carra

The following sections provide details of features of interest and specific conservation measures that should be considered in planning and in advance of detailed design any works for Moorehall and Lough Carra.

Features of Interest

The report on the lesser horseshoe bat at Moorehall by the Vincent Wildlife Trust (McAney 2018) for NPWS identified a number of features of interest and conservation measures that can support these features of the site. The main recommendations arising from this report are that:

- the basement of the house must be retained solely as a hibernation site for the horseshoe bats;
- suitable horseshoe bat access points into the basement and flight paths surrounding it must be retained;
- no construction work can be undertaken at the house between the months of October 31st to April 30th;
- mitigation for other protected species must be implemented;

- the building used as a maternity roost must be retained solely as such for the bats; key flight paths and feeding areas for the bats within the woodland must be retained; and none of the structures or woodland used by the bats should be illuminated.
- Continuous Cover Forestry is recommended as the appropriate forestry policy for the habitats of the horseshoe population at Moore Hall; and
- the removal of the conifers at the front of the house is carried out on a phased basis so that the bats always have vegetative cover to fly south to the woodland at the lake.

The management plan will also protect the commuting, foraging and roosting habits of the bats. These features of interest are identified by the Kelleher/SLR study (2019) which are detailed below and shown overleaf in Figure A.

Baseline Assessments

The numbers of bats present at Moorehall and Towerhill are recorded in annual summer bat counts, carried out by the Vincent Wildlife Trust and the NPWS. The data presented below show that the population trend is upwards (apart from a temporary decrease in 2016 at Moorehall).

Summer Bat Counts at Moorehall and Towerhill

Year	Date	Moorehall	Towerhill	Total
2015	16-Jun	158	385	543
2016	27-Jun	80	561	641
2017	07-Jun	145	489	634
	28-Jun	124	416	540
2018	30-May	247	376	623
	25-Jun	162	459	621
2019	10-Jun	111	298	409
	25-Jun	187	516	703

*Source: Vincent Wildlife Trust. These counts are based on the consideration that the two sites are one from the bats' perspective



Due to the importance of Moorehall and Towerhill to the lesser horseshoe bat at a regional, national and international level, several ecological studies were previously commissioned including one more recent survey in 2019, which was prepared to support the conservation and development strategy set out in this Masterplan.

Previous Ecological Studies

Radio tracking study by Biggane (2005)

Radio transmitters were fitted to six adult female bats, captured as they flew away from the barn (or granary), and their movements were then tracked from dusk to dawn over a 4-5 night period. All the bats initially flew away from the barn in a westerly direction using a number of different sheltered commuting routes, before dispersing. None of the bats flew over open ground; instead they flew close to stonewalls, scrub edge, lake edge, treelines and hedgerows.

All six bats were found foraging within a 2-3km radius of the barn in broadleaf woodland, mixed woodland, hazel scrub and in lakeside riparian woodland. Four of the bats foraged within the woodland at Moorehall, but two bats undertook longer flights to the north-west, with one bat foraging along the edge of mixed woodland and riparian habitat less than 2km east of Ballintubber village.

The Biggane (2005) study made the following recommendations that remain relevant to the colony at Moorehall:

- All commuting routes to the south linking the colony to Lough Carra should be maintained;
- Commuting routes must be retained if/when felling takes place in woodland lying to the west of the barn;
- All foraging areas south-west and north of the roost should be maintained.

Coillte Study (Kelleher, 2007)

This detector study found similar results to Biggane's 2005 study and reiterated the importance of woodland edge (both deciduous and conifer), hedgerows, treelines and walls to the bats.

The general mitigation measure recommended arising from this detector study was that vegetation along five (5) identified commuting routes should be retained or planted and that a 20m buffer zone be retained to protect conifer trees from being blown over by wind following clear felling. An alternative

suggestion was to completely clear-fell conifers from an area but to replant with fast-growing alder that should be at least 3m high at time of planting to provide the bats with ample shelter. It was also stated that the timing of these operations was critical and should be undertaken between the months of October-February, when the horseshoe bats are less active. Specific recommendations were made for retaining or enhancing certain sections of routes and some of these were followed during the felling operations that took place in 2009.

Radio-Telemetry Study of the Lesser Horseshoe Bat Colony at Moorehall (Kelleher & SLR Consulting, (2019)

A radio-telemetry study of the lesser horseshoe bat colony at Moorehall was carried out over three time periods in 2019: (i) August 27 and 28, (ii) September 6 and 7 and (iii) September 16, 17, 18 and 19.

The aim of this study was to gain up to date knowledge of bat movements across the site following clear-felling of some areas in recent years. It also aimed to complement past studies of on-site commuting routes and foraging areas due to the passage of time, so that mitigation measures to safeguard this protected species and other bats onsite could be included within the current development plans.

The Kelleher/SLR study (2019) also confirmed details of the commuting, foraging and roosting habits of the bats (see maps Figure A and Figure B overleaf) which are detailed below.

Commuting routes

Commuting routes used by the bats from the barn include woodland edge, hedgerows, walls, treelines and the onsite river. It is important that these features are protected. Hedgerows and treelines form a network of links extending from Moorehall to Towerhill to the north and to and around Lough Carra to the south. They also extend westward to Lake Nagovne.

Foraging areas

The results of the 2019 bat survey at Moorehall are very much in line with those of previous studies, confirming the longevity of this species' behaviour and highlighting the importance of riparian and broadleaved woodland habitats to foraging Lesser Horseshoe Bats. The findings are similar to previous studies of the species (Bontadina et al. 2002; Schofield et al. 2002, Biggane 2003, 2004 and 2005 and Kelleher 2004 and 2007).

Bats from the barn maternity roost commuted along watercourses and forest edges and concentrated their foraging along woodland edge habitats. As well as riparian habitats, the bats also focused on well-developed hedgerows, treelines and scrub and it is important that these habitats present within a 4km radius of the maternity roost are protected.

Alternative roosts

Each of the structures identified as alternative roosts are in favourable condition and should be protected for the bats' continued use. During the study, additional Lesser Horseshoe night roosts were discovered. These are detailed in the table below.

Additional Lesser Horseshoe night roosts

Name/ Locality	ITM Coordinates
Abandoned Garage	518421, 773927
Toilet	518912, 774079
Bridge	518888, 774041

Figure A: Mapped results of Bat Survey (Kelleher & SLR Consulting, Aug-Sept. 2019)

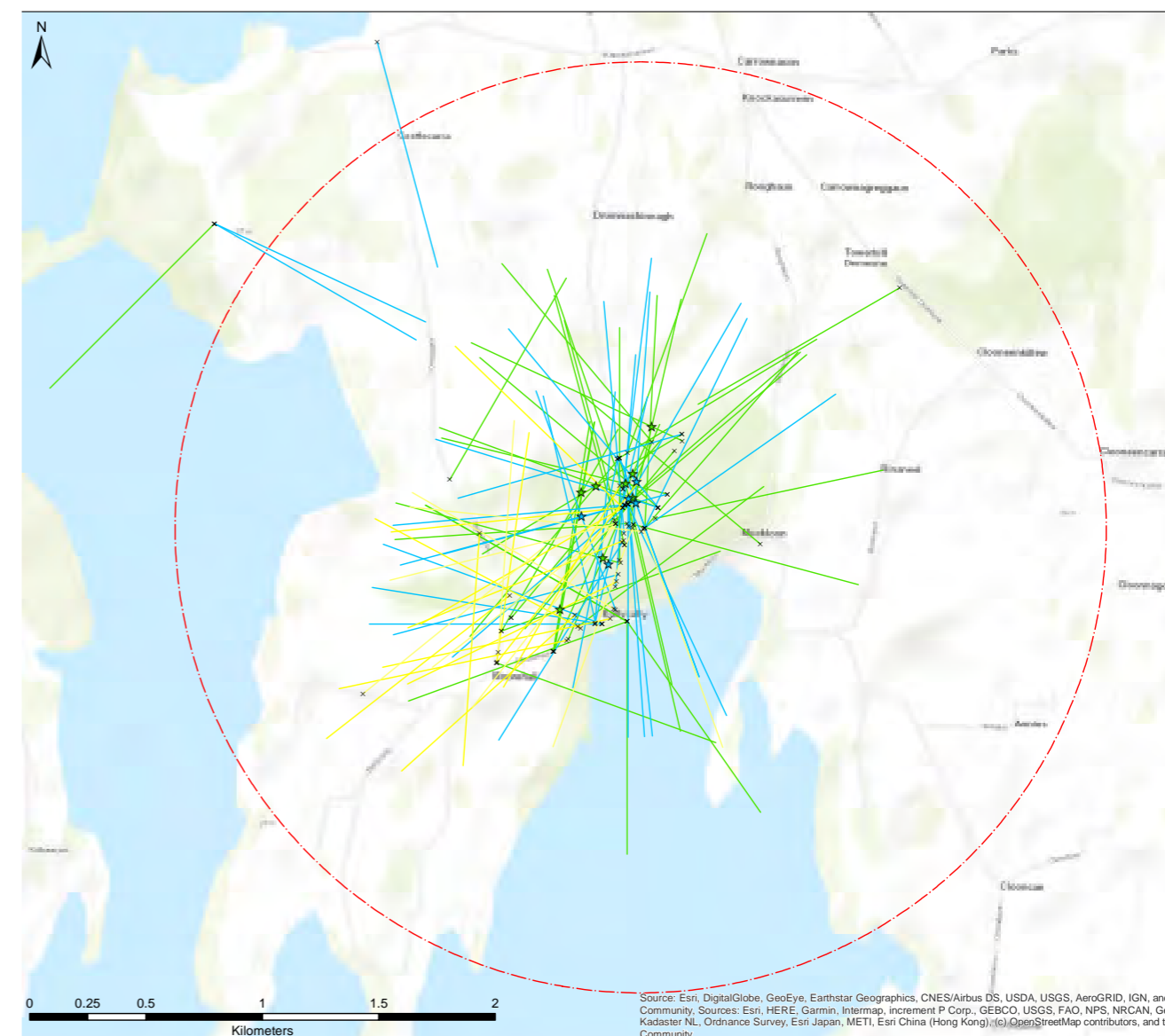
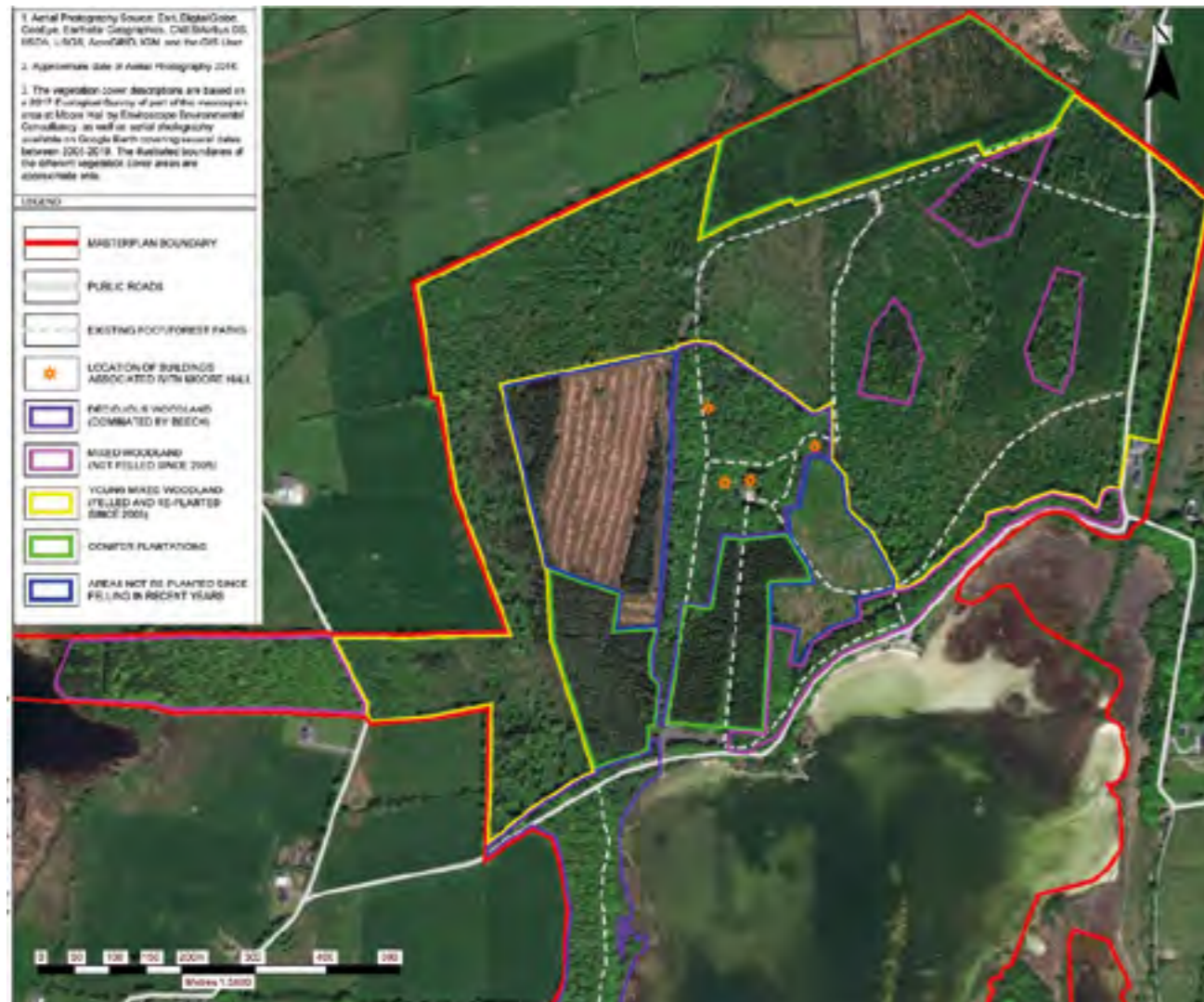


Figure B Existing Landscape showing Important Bat Features



Conservation Objectives and Management Considerations

A site-specific conservation objective²¹ aims to define the favourable conservation condition of a habitat or species at site level. The maintenance of habitats and species within sites at favourable condition will contribute to the maintenance of favourable conservation status of those habitats and species at a national level. The key objective at Moorehall is the conservation of the specific habitat conditions for the Lesser Horseshoe and other bat species.

The condition of both winter and summer roosts comprises a number of elements, any of which may interact, and which include locational context,

landscape connectivity, structural integrity, microclimate, levels of artificial light at night, level of disturbance by humans or predators and risk of catastrophic events, such as flooding or storms.

- ✓ The target is that there is no decline in the condition of winter or summer roosts.

²¹ NPWS (2018) Conservation objectives supporting document – Lesser Horseshoe Bat (*Rhinolophus hipposideros*) Ver. 1. Conservation Objectives Supporting Document Series. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Dublin, Ireland. https://www.npws.ie/sites/default/files/publications/pdf/Lesser_horseshoe_bat_supporting_document_Jan_2018_V1.pdf

Condition of Winter Roosts

Suitable sites in winter generally witness low levels of disturbance and have high humidity and stable temperatures. These conditions are typically met in underground structures such as souterrains, cellars, tunnels, ice houses and natural caves (including those selected as habitat 8130 'Caves not open to the public'). Hibernacula may be abandoned or numbers of bats using the site may decline in circumstances when there is a decline in condition. Examples of decline in condition may include, but are not limited to:

- increased use of an underground site by humans (i.e. increased disturbance)
- cave or tunnel closure
- loss of structural integrity (e.g. roof collapse in a souterrain)
- flooding in a cave system causing entrapment and/or drowning of bats

Condition of Summer Roosts

Suitable sites in summer generally witness low levels of disturbance, have appropriate access points for lesser horseshoe bats and achieve the microclimatic conditions required for raising young. These conditions are typically met in buildings, for example stables, abandoned cottages and farm buildings, attics of large houses, large chimneys of ruined buildings, modern boiler houses, sheds and garages. Summer roosts may be abandoned or numbers using the site may decline in circumstances when there is a decline in condition. Examples of decline in condition may include, but are not limited to:

- increased use of a site by humans (i.e. increased disturbance)
- loss of structural integrity (e.g. roof deterioration)
- closure of the lesser horseshoe bat access point(s)
- predator disturbance (e.g. domestic cat, pine marten)
- reroofing or redevelopment of the site

Number and Condition of Auxiliary roosts

Lesser horseshoe bat populations will use a variety of roosts during the year besides the main roosts listed above. The bats rely on a network of sites that may include satellite, transitional and night roosts along with summer and winter roost sites, to fulfil their

lifecycle requirements within a locality. Transitional roosts may be used after hibernation but prior to occupation of the maternity roost. Alternative day roosts used by a colony are known as satellite roosts; these are typically used by individuals or small clusters (Schofield, 2008). Night roosts are often situated in home core range areas and are used by the bats to minimise commuting distances between foraging bouts. Availability of night roosts within and close to key foraging areas ensures that these remain suitable for lesser horseshoe bats. A full complement of varied roosting structures is required to maintain populations and facilitate successful reproduction.

Condition in this instance refers to the suitability of an auxiliary roost site to host s. It comprises a number of elements including locational context, structural integrity, microclimate, levels of artificial light at night (ALAN), level of disturbance by humans or predators and risk of catastrophic events.

Extent of potential Foraging Habitat (Hectares)

Lesser Horseshoe Bats tend to forage in summer in broadleaved woodland and around riparian vegetation (Bontadina et al., 2002; Biggane, 2003). In 2016, the Bat Conservation Trust (BCT) carried out a review of literature pertaining to mean and maximum bat foraging distances (BCT, 2016). In their review, a Core Sustenance Zone (CSZ) refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. For the BCT review, Lesser Horseshoe Bat data was available from 83 radio-tracked individuals from four separate studies. The weighted average maximum foraging distance for Lesser Horseshoe Bats was 2.02km. The BCT noted that for Annex II species there is justification for increasing the CSZ to reflect use of the landscape by all bats in a population. Some researchers have found that Lesser Horseshoe Bats normally forage in woodlands/scrub within 2.5km of their roosts (Bontadina et al., 2002); thus, for each roost, a 2.5km zone is considered an appropriate distance to foraging areas for the purpose of the current SSCO targets. The 2.5km zone around each known roost is mapped and potential foraging grounds within the zone are identified and mapped for each SAC using the Forestry Inventory and Planning System (FIPS) (2007/2012) spatial dataset.

- ✓ The target is that there is no significant decline in potential foraging habitat within 2.5km of qualifying roosts.



Linear features (Kilometres)

This species follows commuting routes from its roost to its foraging grounds. Lesser horseshoe bats will rarely cross open ground and are particularly averse to doing so unless it is very dark (e.g. Schofield, 2008). Consequently, in order to link roosting and foraging sites, linear features such as hedgerows, treelines and stone walls provide vital connectivity for this species, most importantly within 2.5km around each roost (Schofield, 2008). Linear features such as tree lines are also sometimes used for foraging by lesser horseshoe bats (Bontadina et al., 2002).

- ✓ The target is that there is no significant loss of linear features within 2.5km of qualifying roosts.

Light pollution (Lux)

Lesser horseshoe bats are very sensitive to light pollution and will avoid brightly lit areas. Artificial light at night at or near roosts may impact bats in a number of ways, for example, delaying emergence time after dusk, causing abandonment of roosts when exits are lit at night and/or reducing reproductive success (e.g. Stone, 2013). Lesser horseshoe bats have been found to avoid commuting along routes lit with artificial light at levels as low as 3.7 lux emanating from energy efficient LED lights (Stone et al., 2012).

- ✓ The target is that there is no significant increase in artificial light adjacent to qualifying roosts or along commuting routes with 2.5km of the roosts.

Summary of Conservation Management Measures

In summary, ongoing conservation management measures at Moorehall should ensure that there is:

- ✓ No significant decline in the condition of winter or summer roosts.
- ✓ no significant decline in potential foraging habitat within 2.5km of qualifying roosts.
- ✓ no significant loss of linear features within 2.5km of qualifying roosts.
- ✓ no significant increase in artificial light intensity adjacent to qualifying roosts or along commuting routes within 2.5km of those roosts.
- ✓ no significant increase in artificial light intensity adjacent to qualifying roosts or along commuting routes within 2.5km of those roosts.

Updated Conservation Status of Lesser Horseshoe Bat

The Status of EU Protected Habitats and Species in Ireland (Department of Culture, Heritage and the Gaeltacht, 2019) is the third report on the assessment of the status of habitats and species that Ireland. In relation to the lesser horseshoe bat it states that

- ✓ 'The population overall is doing well; monitoring has demonstrated significant increases in numbers in the core areas. Over much of its distribution, both range and the area of suitable habitat have remained stable. In Limerick and North Kerry, however, worrying declines in habitat, and consequently in range, have been observed. These are considered likely to continue without significant intervention. For these reasons, Habitat, Range and their associated Future prospects, which were all considered to be Favourable in the last report, are now considered Inadequate, and the Overall Status of this species is assessed as Inadequate and declining.

Targeted Interventions for Biodiversity Enhancement

The following recommendations are for bats in general, as well as specific measures to safeguard the site's lesser horseshoe bat colony (although many of the recommendations for the latter species are also beneficial for other bat species). These measures should be incorporated into the management plan developed for the site:

- Moorehall roost retention/enhancement
- Bridges, Culverts and Servants' tunnel
- Building demolition
- Hibernation Site
- Bat Box Scheme
- Tree Felling
- Linear Landscape Features
- Changes to Existing Trails and Provision of New Walks and Trails
- Night-scented plants
- Lighting
- Monitoring

Project Conservation Priorities

The following details should be considered in planning and designing of any works in the vicinity of Moorehall house, barn and farm buildings, Towerhill and Lough Carra.

1. Moorehall Building Roost Retention/ Enhancement and Maternity Roost Enhancement

Re-roofing Moorehall would be beneficial for bats as it would prevent further decay of the existing structure and it would offer excellent roosting opportunities for bats. Access for bats should be retained or included in any repairs to buildings. The attic should be properly insulated to both warm the area and sound proof any roost from disturbance. Gaps of 12 to 20mm should be left beneath ridge tiles, lead flashing and eaves to encourage future use by vespertilionid bats. These can be provided while retaining the water seal of the building.

Rhinolophid bats need larger access holes through which they can fly directly therefore an opening of at least 100mm x 300mm should be included to facilitate this species' access to the roof space.

Planks of wood should be mounted on cellar walls to allow bats to squeeze behind them. These are standard fittings provided within hibernation sites, both natural and artificial, to enhance their favourability for Vespertilionid species that prefer squeezing into tight spaces.

Provision of cavity blocks and/or timbers with chainsaw cuts into which bats can squeeze would further encourage bat use.

Timber Treatment

1. Any timber treatment operations e.g. within roof spaces, should be carried out during the winter months – November to March.
2. Bat safe poisons should be used throughout and any bats discovered during spraying operations should not be sprayed directly.
3. Should bats be discovered during spraying operations, then the work should cease immediately. An experienced bat specialist should then be consulted.
4. The contractor should ensure that only bat safe, pre-treated timbers are used during renovations to roof spaces.

Water Tanks

- Any water tanks located onsite especially within roof spaces should be permanently covered to prevent accidental drowning of bats.

Pressure washing, Repointing and Re-plastering

- Any pressure washing or repointing between stones or re-plastering of buildings or stone walls should follow an inspection of the crevices involved to ensure no bats are present within them. A colony of soprano pipistrelles numbering at least 88 bats was identified roosting within the upper western side of the façade of Moorehall during the latest on-site surveys. The crevice used by the bats to access the wall at this location should be retained.

2. Outbuildings

Former outbuildings designated as areas for bat roosts and favourable bat habitat are to be restored for this purpose, in line with the conservation management plan. Such works will include the provision of artificial hibernation roosts for Vespertilionid species. Access to the area surrounding the designated barn outbuilding is to be minimised and encouraged elsewhere at less sensitive locations on the site.

3. Linear Landscape Features

- Linear landscape features such as treelines and hedgerows should be retained or enhanced to offer continuous corridors for bats and other wildlife to commute across the site.
- These should be connected to existing linear features, where possible, to ensure continuity.
- Native plant species should be used throughout. Native species provide more insect life than foreign varieties.
- Additional planting of trees would enhance the site for bats and would also serve as platforms for future bat box schemes. Varieties of particular benefit would include pendunculate oak *Quercus robur*, ash *Fraxinus excelsior* and birch *Betula* spp. in dry areas while alder *Alnus glutinosa* and willow *Salix* spp. would be suitable on wet areas.



4. Walled Garden Planting Plan – Night-scented Plants

Night-scented plants could be planted as part of landscaping, within scrub or along hedgerows to encourage night-flying insects onto the site to act as prey items for bats. A list of suggested plant species is given in Appendix 3.

5. Changes to Existing Trails and Provision of New Walks and Trails

- The alteration of existing or creation of new walks and trails within the Moorehall Estate will be undertaken in consideration of identified bat commuting routes and foraging areas to ensure these will not be negatively impacted. The Vincent Wildlife Trust bat report recommends redirecting the existing trail by the barn so trail users are further from the building. This would be beneficial.

6. Bat Box Scheme

A bat box scheme could be erected on onsite trees to offset any loss of existing or potential roost sites for other bat species, such as Daubenton's bats, roosting in the basement of the house. 'Schwegler' woodcrete or concrete bat boxes have been proven to be acceptable alternatives for bats and they are readily occupied.

It is suggested that 20 such bat boxes should suffice.

7. Bridges, Culverts and Servants' tunnel

Any repointing or pressure grouting of bridges, culverts or the servants' tunnel should only proceed after an inspection of the structure for bats. CrEVices within these structures should be left open for bat use where possible.

8. Tree Felling

- Any mature tree which requires felling should first be assessed for bat use.
- Trees, which are to be removed, should be felled during the spring months of March, April, May or autumn months of September, October or November. Felling during the spring or autumn months avoids the periods when the bats are most likely to be present.
- Any trees showing crevices, hollows etc. should be removed while a bat specialist is present to deal with any bats found. Such animals should be retained in a box until dusk and then released onsite.

- Care should be taken when removing branches as removal of loads may cause cracks or crevices to close, crushing any animals within. These cracks should be wedged open prior to load removal.
- Any ivy-covered trees which require felling should be left lie for 24 hours after cutting to allow any bats beneath the cover to escape overnight.
- If health and safety is not compromised, any dead trees or snags should be allowed to stand.
- Felled timber should be retained within woodland to encourage invertebrates.

9. Lighting

Lighting should be avoided as it has been shown to deter some bat species from foraging. It should especially be avoided adjacent to any bat roosting sites.

10. Building Repair Timing

Any work on buildings harbouring bats should be undertaken within the winter months – November to March – as bat numbers are then known to be fewer in buildings – lessening impacts to these animals however, Moorehall is a lesser horseshoe bat hibernation roost so any works on the cellar area need to be undertaken when these bats are absent. As the cellar area is also used by Daubenton's (Room 3) and brown long-eared (Room 2) bats, the presence of these species also need to be considered when planning any works. It may be possible to undertake any works on a phased basis by avoiding or temporarily sectioning off areas in use by bats so they remain undisturbed.

11. Building Demolition

- Any demolition should be done carefully with the expectation that bats may be found.
- Caution should be exercised during the removal of roofing material as bats may be underneath even in winter.
- An experienced bat specialist should be on-hand during these operations to deal with any bats found.
- If discovered, the animals should be retained in a box until dusk and then released onsite.

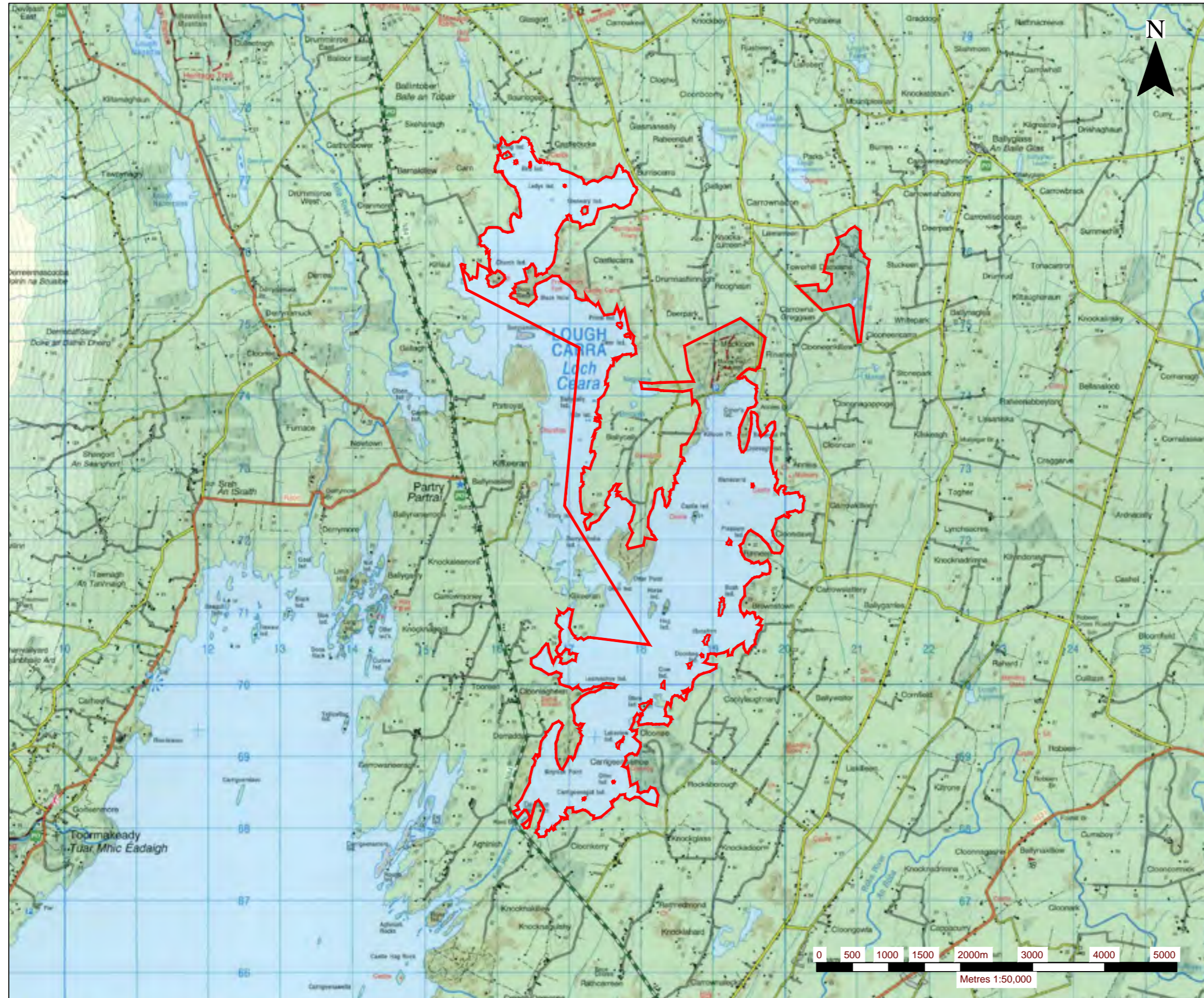
Monitoring

Any mitigation measures incorporated into the development plan should be monitored for effectiveness in perpetuity and, based on the results, alterations and/or enhancements should be undertaken.

Appendix 05

A3 map series for Moore Hall Masterplan

Figure 1 The Moorehall Masterplan Boundary



- NOTES
1. Ordnance Survey Ireland Licence No. SU 0000719
(C) Ordnance Survey & Government of Ireland
 2. Extract from OSi Discovery Series Sheet No's. 38

<p>MAYO COUNTY COUNCIL COILLTE & STATE</p> <hr/> <p>LANDS AT MOORE HALL, CARNACON, CO. MAYO</p> <hr/> <p>MASTERPLAN BOUNDARY</p> <hr/> <p>FIGURE 1</p>	
Scale 1:50,000 @ A3	Date MARCH 2019

Figure 5 Moorehall Masterplan Wider Area: Environmental Designations and Features

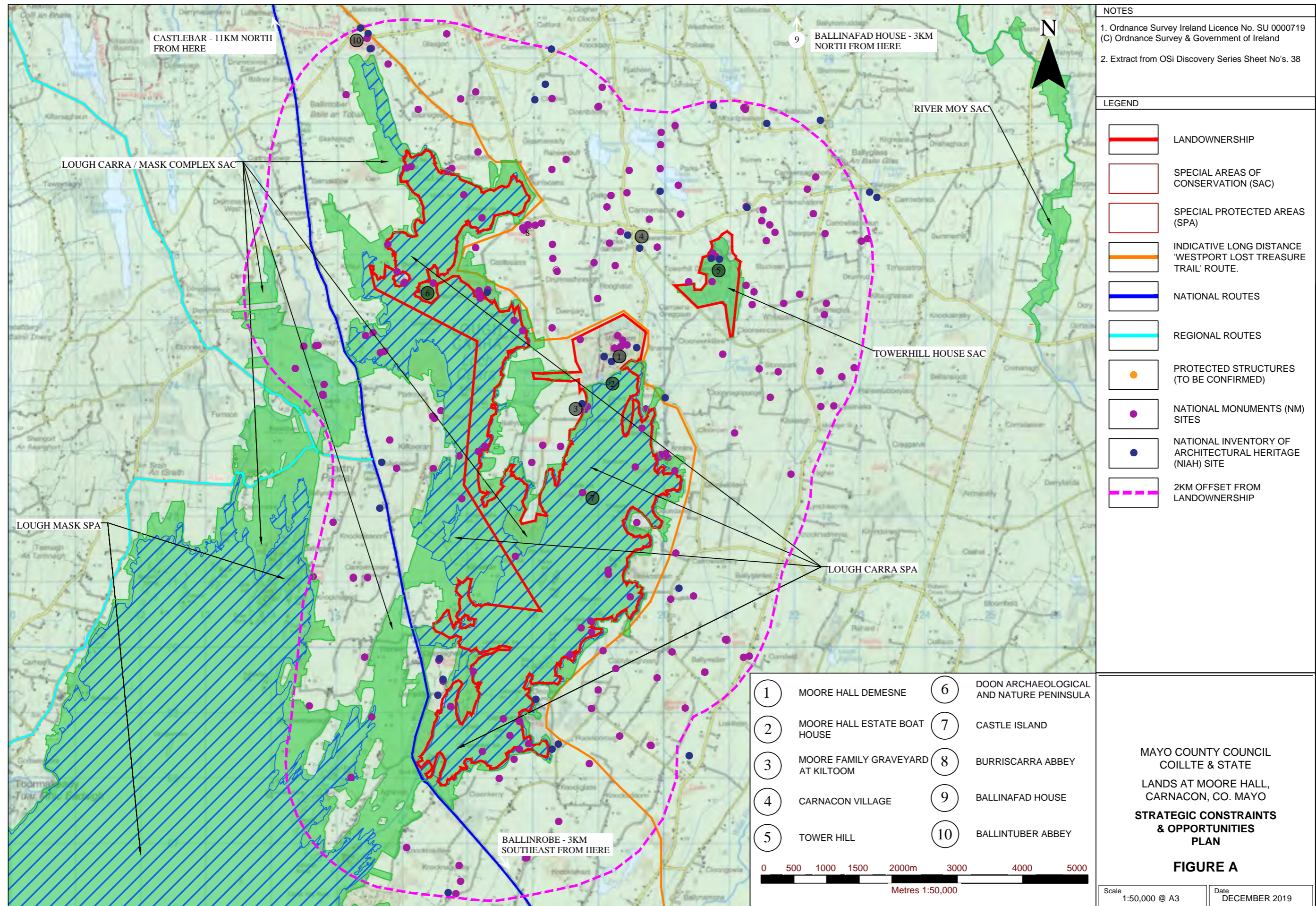


Figure 6 Moorehall: Environmental & Conservation Features

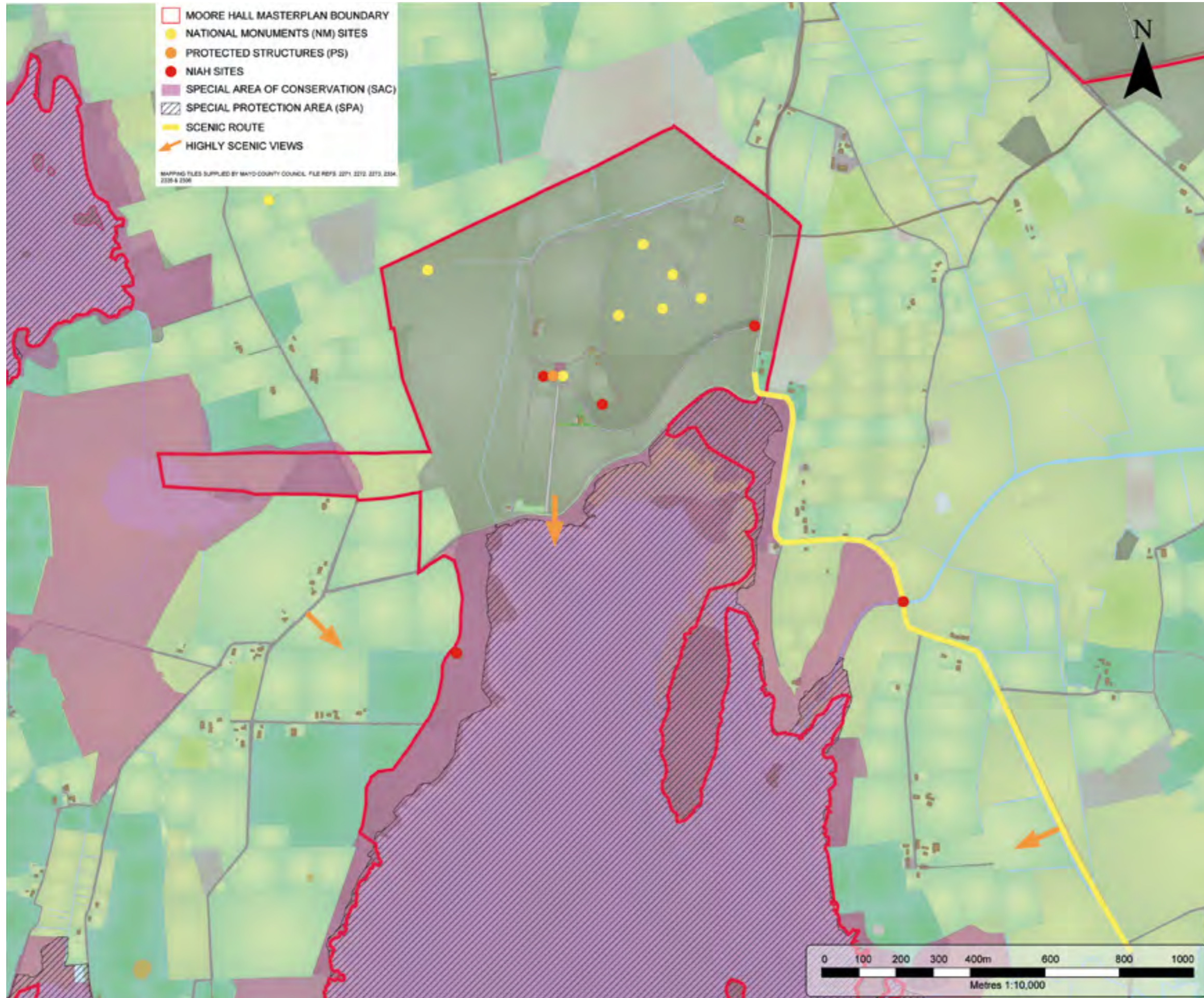


Figure 7 Record of Monuments & Places

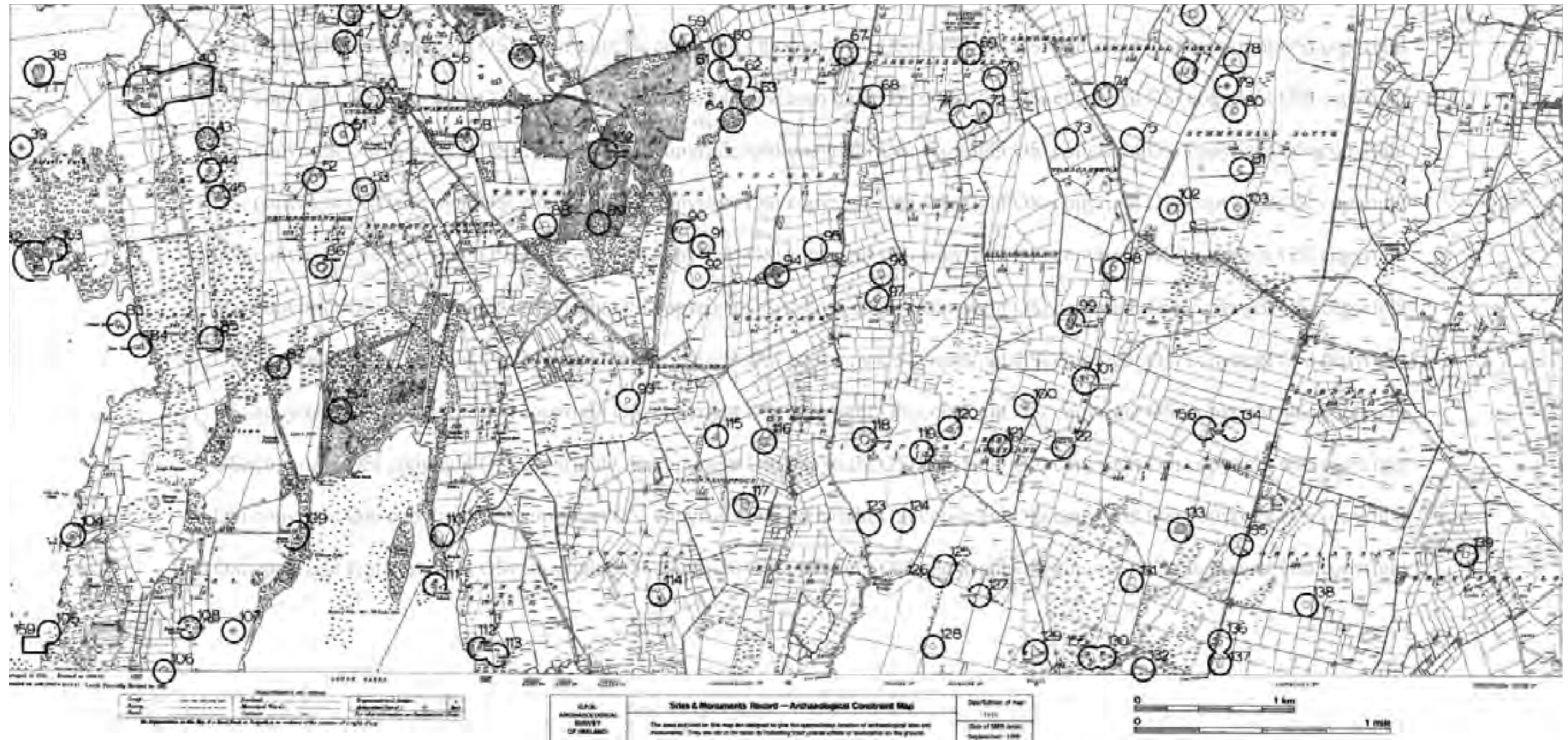


Figure 8 Existing Landscape Vegetation Units

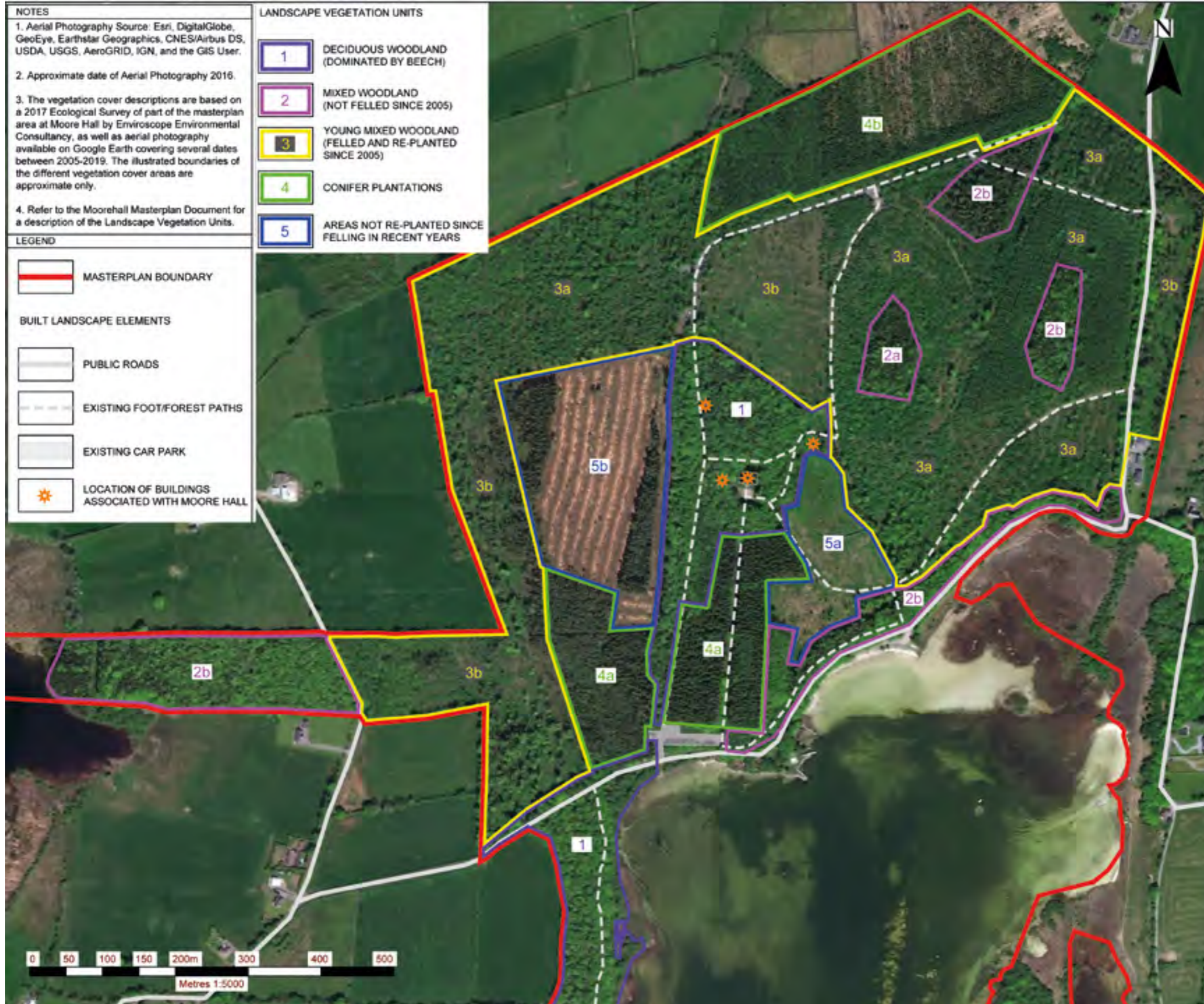


Figure 10 Preferred Masterplan Strategy



MAPPING TILES SUPPLIED BY MAYO COUNTY COUNCIL. FILE REFS: 2271, 2272, 2273, 2334, 2335 & 2336

OPTION 2 - RESTORATION WORKS & PROPOSALS

- Moore Hall and Lake Ownership Boundary
- Existing used tracks / paths following routes from 1839.
- Existing more recent used tracks / forestry paths (not on 1839 plan).
- Proposed new footpath route connecting car park to main entrance / 'ride' and longer distance route to south.
- Proposed new footpath routes establishing 1839 routes.
- Indicative Tower Hill trail route.
- Indicative long distance 'Westport Lost treasure Trail' route.

- 1 Moore Hall - new roof and limited access to hall interior and balcony with view of lake. Conservation management plan to be prepared and implemented.
- 2 Tunnel to rear of hall to be cleaned and drained.
- 3 New tracks / walkways established reflecting 1839 route network and including grand entrance to hall.
- 4 Walled garden, restoration of boundary wall and round corner building. Stable block to the back of walled garden to be reinstated in accordance with conservation management plan, for potential use as a research centre. Trees already cleared around buildings. Pathways still to be reinstated. Moss wall on the exterior of western boundary wall to be protected.
- 5 Planting beds to be re-established in walled garden and used to supply cafe in visitor centre.
- 6 Former outbuilding designated as area for bat roosts and habitat. Buildings to be restored for this purpose in line with conservation management plan.
- 7 Conifer plantation to be gradually removed to reinstate the 1839 view corridor. This will also visually 'reconnect' hall with family graveyard to southwest. More recent track leading to lake to be retained.
- 8 Landscape treatment around existing car park to be considered to screen parked cars / campervans whilst respecting 1839 view corridor from hall. Toilet block to be internally refurbished, including consideration of alternative potential uses.
- 9 Trees to be cleared to recreate along the 'ride' - original main access to hall.
- 10 New car park and toilet block to be developed using existing access.
- 11 New pathway to be created connecting new car park with the 'ride' and main gateway entrance and southwards to longer distance route.
- 12 Boat house restored in accordance with conservation management plan, with access. Cars to potentially use existing car park for access.
- 13 Specimen tree planting where appropriate.
- 14 Area of woodland retained (not in line with 1839 plan) for bat foraging and actively managed for habitat creation.
- 15 Option 1 potential new visitor centre - developed adjacent to entrance car park. To include cafe with produce from walled garden / estate, and information centre.
- 16 Option 2 potential new visitor centre - developed to north of walled garden. To include cafe with produce from walled garden / estate, and information centre.

MOORE HALL, COUNTY MAYO

ILLUSTRATIVE MASTERPLAN

OPTION 2 - RESTORATION & OTHER NEW BUILD PROPOSALS

FIGURE F

Scale 1:5000 (A3)	Date NOVEMBER 2020
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Figure 11 Moorehall: Woodlands Management Strategy



NOTES

MAPPING TILES SUPPLIED BY MAYO COUNTY COUNCIL. FILE REFS: 2271, 2272, 2273, 2334, 2335 & 2336

WOODLAND STRATEGY - KEY FEATURES

- Moore Hall and Lake Ownership Boundary
- Woodland areas that were clear in 1839. Woodland to be retained due to bats / wildlife.
- Woodland areas that were clear in 1839. Woodland to be partially cleared to create better routes.
- Woodland areas that were clear in 1839. Woodland to be cleared to recreate view from hall, for restoration of walled garden, and for new car park.
- Woodland areas that will remain - for proactive management for wildlife purposes.
- Existing tracks and paths within Moore Hall estate.
- 1839 View Corridor from Hall to Lake

Figure 12 Moorehall, Walled Garden, proposed Reinstatement of the Central Viewing Corridor



NOTES

MAPPING TILES SUPPLIED BY MAYO COUNTY COUNCIL. FILE REFS: 2271, 2272, 2273, 2334, 2335 & 2336

OPTION 2 - RESTORATION WORKS & PROPOSALS - HALL & GARDENS AREAS

- Moore Hall and Lake Ownership Boundary
- Existing used tracks / paths and proposed new paths / tracks.

- ① Moore Hall - new roof and limited access to hall interior and balcony with view of lake. Conservation management plan to be prepared and implemented.
- ② Tunnel to rear of hall to be cleaned and drained.
- ③ New tracks / walkways established reflecting 1839 route network and including grand entrance to hall.
- ④ Walled garden, restoration of boundary wall and round corner building. Stable block to the back of walled garden to be reinstated in accordance with conservation management plan, for potential use as a research centre. Trees already cleared around buildings. Pathways still to be reinstated. Moss wall on the exterior of western boundary wall to be protected.
- ⑤ Planting beds to be re-established in walled garden and used to supply cafe in visitor centre.
- ⑥ Former outbuilding designated as area for bat roosts and habitat. Buildings to be restored for this purpose in line with conservation management plan.
- ⑦ Conifer plantation to be gradually removed to reinstate the 1839 view corridor. This will also visually 'reconnect' hall with family graveyard to southwest. More recent track leading to lake to be retained.
- ⑧ Specimen tree planting where appropriate.
- ⑨ Option 2 potential new visitor centre - developed to north of walled garden. To include cafe with produce from walled garden / estate, and information centre.

MOORE HALL, COUNTY MAYO

ILLUSTRATIVE MASTERPLAN

OPTION 2 - HALL & GARDENS

FIGURE I

Scale 1:1000 (A3)	Date NOVEMBER 2020
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Figure 13 Lough Carra, key Points of Interest

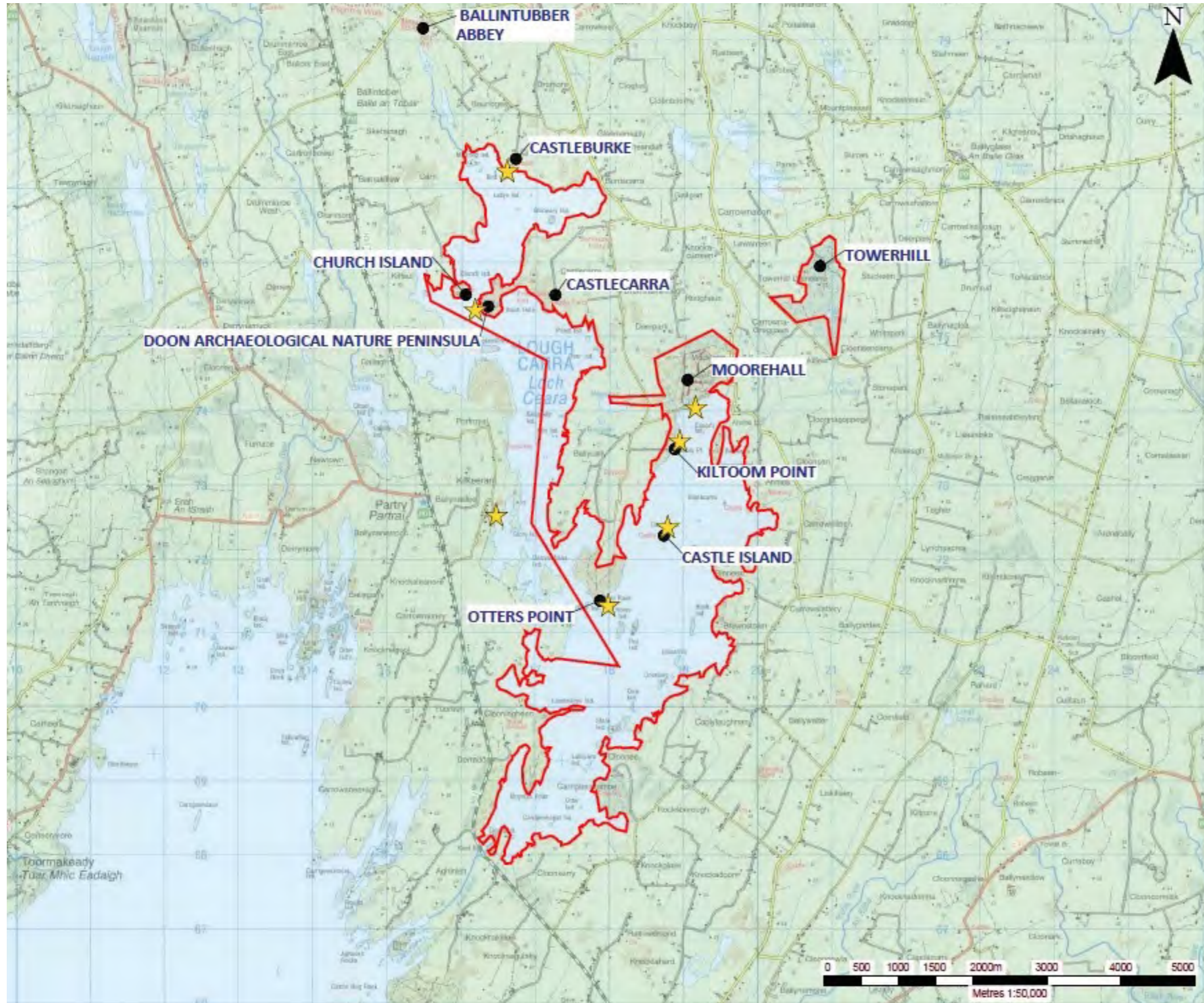


Fig 14 Visitor Centre – Proposed car park, new routes



Artist's impression of pontoon on Lough Carra

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& Wildlife Service and Coillte

