13. ARCHAEOLOGY AND CULTURAL HERITAGE

13.1 Introduction

This section of the rEIAR assesses the potential direct and indirect effects of the peat extraction and ancillary activities at the Application Site on the surrounding archaeological and cultural heritage landscape. The Application Site is the subject of a Substitute Consent Application to An Coimisiún Pleanála, in accordance with Section 177E (Application for Substitute Consent) of the Planning and Development Act 2000 (as amended) and under Part 19 of the Planning and Development Regulations, 2001 (as amended).

The assessment is based on both a desktop review of the available cultural heritage and archaeological data and a comprehensive programme of field walking of the Application Site. An assessment of potential effects, including the Peat Extraction Phase, the Current Phase and the Remedial Phase of the Project is included. Cumulative effects are also addressed.

13.1.1 Statement of Authority

This chapter of the rEIAR has been prepared by Miriam Carroll of Tobar Archaeological Services Ltd. Miriam Carroll graduated from University College Cork in 1998 with a Masters degree in Methods and Techniques in Irish Archaeology. She is licensed by the Department of Housing, Local Government and Heritage (DHLGH) to carry out excavations and is a member of the Institute of Archaeologists of Ireland. Miriam has been working in the field of archaeology since 1994 and has undertaken numerous projects for both the private and public sectors including excavations, site assessments (EIAR) and surveys. Miriam Carroll is a director of Tobar Archaeological Services Ltd which has been in operation for over 20 years.

13.1.1.1 Limitations

- There is no photographic evidence available from 1988 to review the baseline conditions of the bogs on the ground. Aerial images from 1973 to 2020 are included in Appendix 4-4 of this rEIAR. As detailed in Section 4.4.1 and 4.6 peat extraction maps for the years 1988, 1995, 2004 and 2020 are presented and illustrate peat extraction and ancillary activities over time.
- Peatland surveys at the Application Site commenced in 1993 therefore resulting in a lack of information on archaeological finds and features therein from 1988 to 1993.
- Limitations specifically relating to fieldwork are outlined in Section 13.2.3.1 below.

13.1.2 Location

The Application Site comprises Lemanaghan Bog, which is part of the Boora Bog Group. The Application Site comprises an area of 1,111 hectares (ha) within which bog drainage works began in 1950 followed by the commencement of peat extraction and ancillary activities from 1960. The Application Site is located 3km to the northeast of Ferbane, 7.8km southwest of Clara, and 8.7km south of Moate. The Application Site measures approximately 5.5km in length from north to south, and approximately 6.9km from east to west, at its widest point. The Application Site is connected by rail link to the Bellair South Bog to the north and to the Blackwater Bog Group to the west. The R436 Regional Road passes along much of the southern boundary. The N62 National Road skirts the most western point of the Application Site. The L7002 local road passes through the northern part of the Application Site and cuts off the northernmost sector. The current main access points to the Application

Site include an existing entrance off the N62 National Road and along the R436 into the Lemanaghan Works adjacent to the south of the Application Site. Please see Figure 13-1 below for the Application Site location.

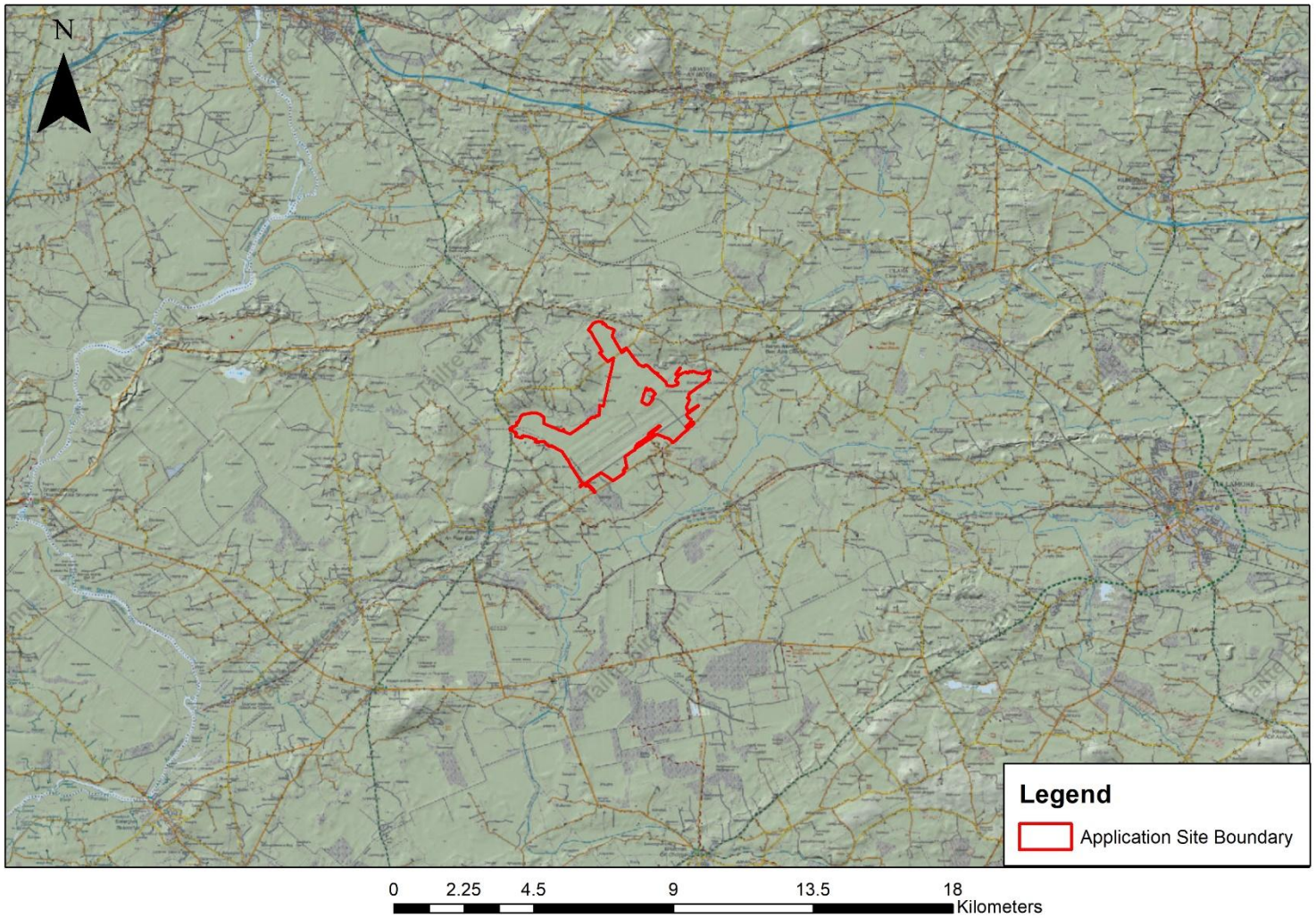

Figure 13.1: Applicant Site location map.

13.1.3 Legislation and Guidance

The chapter has been prepared in compliance with all relevant EIA legislation including Annex (IV) 4 of the EIA Directive 2011/92/EU as amended by Directive 2014/52/EU, which outlines the items that should be included in an EIAR. This is further described in Chapter 4 Description of the Development, Section 4.1.2.

13.1.3.1 Current Legislation

Archaeological monuments are safeguarded through national and international policy, which is designed to secure the protection of the cultural heritage resource. This is undertaken in accordance with the provisions of the European Convention on the Protection of the Archaeological Heritage (Valletta Convention). This was ratified by Ireland in 1997.

Both the National Monuments Acts 1930 to 2004, and relevant provisions of the Cultural Institutions Act 1997 are the primary means of ensuring protection of archaeological monuments, the latter of which includes all man-made structures of whatever form or date. There are a number of provisions under the National Monuments Acts which ensure protection of the archaeological resource. These include the Register of Historic Monuments (1997 Act) which means that any interference to a monument is illegal under that Act. All registered monuments are included on the Record of Monuments and Places (RMP).

The Record of Monuments and Places (RMP) was established under Section 12 (1) of the National Monuments (Amendment) Act 1994 and consists of a list of known archaeological monuments and accompanying maps. The Record of Monuments and Places affords some protection to the monuments entered therein. Section 12 (3) of the 1994 Amendment Act states that any person proposing to carry out work at or in relation to a recorded monument must give notice in writing to the Minister (Environment, Heritage and Local Government) and shall not commence the work for a period of two months after having given the notice. All proposed works, therefore, within or around any archaeological monument are subject to statutory protection and legislation (National Monuments Acts 1930-2004).

The term 'national monument' as defined in Section 2 of the National Monuments Act 1930 means a monument *'the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto'*. National monuments in State care include those which are in the ownership or guardianship of the Minister for Arts, Heritage and the Gaeltacht. Section 5 of the National Monuments Act (1930) allows owners of other national monuments to appoint the Minister for the Arts, Heritage and the Gaeltacht or the relevant local authority as guardian of such monuments, subject to their consent. This means in effect that while the property of such a monument remains vested in the owner, its maintenance and upkeep are the responsibility of the State. Some monuments are also protected by Preservation Orders and are also regarded as National Monuments. National Monuments also include (but not so as to limit, extend or otherwise influence the construction of the foregoing general definition) every monument in Saorstát Éireann to which the Ancient Monuments Protection Act, 1882, applied immediately before the passing of this Act, and the said expression shall be construed as including, in addition to the monument itself, the site of the monument and the means of access thereto and also such portion of land adjoining such site as may be required to fence, cover in, or otherwise preserve from injury the monument or to preserve the amenities thereof.

The Historic and Archaeological Heritage and Miscellaneous Provisions Act 2023 will replace the existing National Monuments Acts (1930-2014) when it is brought into force by Ministerial Order. The majority of provisions of the Act have not yet come into force. One Commencement Order relating to Sections 1-6 and Section 7 insofar as relates to the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999 (other than section 5) came into effect on the

31 May 2024. These provisions relate to World Heritage Property in the State, inventories, the protection of certain records, the promotion of heritage, and the issuing of statutory guidance. Certain related and supporting provisions concerning implementation and enforcement are also commenced (www.archaeology.ie/news). The provisions now in force allow for the establishment and maintenance of inventories of relevant things of archaeological interest, architectural heritage, and wrecks of archaeological or historic interest. This bolsters the status of existing inventories recording sites of archaeological, historic and architectural interest, both on land and under the sea. It also ensures that legal protection is afforded to certain records or archaeological objects in the event that a person or company in possession of such records is no longer in a position to maintain them, which further strengthens existing practices (https://www.gov.ie/).

Under the Heritage Act (1995) architectural heritage is defined to include *'all structures, buildings, traditional and designed, and groups of buildings including street-scapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest, together with their setting, attendant grounds, fixtures, fittings and contents...'*. A heritage building is also defined to include *'any building, or part thereof, which is of significance because of its intrinsic architectural or artistic quality or its setting or because of its association with the commercial, cultural, economic, industrial, military, political, social or religious history of the place where it is situated or of the country or generally'.*

13.1.3.1.1 Granada Convention

The Council of Europe, in Article 2 of the 1985 Convention for the Protection of the Architectural Heritage of Europe (Granada Convention), states that *'for the purpose of precise identification of the monuments, groups of structures and sites to be protected, each member State will undertake to maintain inventories of that architectural heritage'.* The Granada Convention emphasises the importance of inventories in underpinning conservation policies.

The National Inventory of Architectural Heritage was established in 1990 to fulfil Ireland's obligations under the Granada Convention, through the maintenance of a central record, documenting and evaluating the architectural heritage of Ireland. Article 1 of the Granada Convention establishes the parameters of this work by defining 'architectural heritage' under three broad categories of Monument, Groups of Buildings, and Sites:

Monument: all buildings and structures of conspicuous historical, archaeological, artistic, scientific, social or technical interest, including their fixtures and fittings;
Group of buildings: homogeneous groups of urban or rural buildings conspicuous for their historical, archaeological, artistic, scientific, social or technical interest, which are sufficiently coherent to form topographically definable units;

Sites: the combined works of man and nature, being areas which are partially built upon and sufficiently distinctive and homogenous to be topographically definable, and are of conspicuous historical, archaeological, artistic, scientific, social or technical interest.

The Council of Europe's definition of architectural heritage allows for the inclusion of structures, groups of structures and sites which are considered to be of significance in their own right, or which are of significance in their local context and environment. The National Inventory of Architectural Heritage (NIAH) believes it is important to consider the architectural heritage as encompassing a wide variety of structures and sites as diverse as post boxes, grand country houses, mill complexes and vernacular farmhouses.

13.1.3.1.2 Turf Development Act 1998

Section 56 of the Turf Development Act 1998 pertains to the protection of the environment and archaeological heritage. It mandates that both the Company (formed under the Act) and its subsidiaries ensure their activities are conducted in a manner that appropriately safeguards these aspects. This

includes avoiding damage to the environment and preserving archaeological sites found within their operational areas.

13.1.3.2 Relevant Guidance

The aforementioned 1998 Act was in accord with the development of *Agreed Principles for the Protection of Wetlands Archaeology in Bord na Móna Bogs* (1998) between the Minister for Arts, Heritage and the Gaeltacht, the National Museum of Ireland and Bord na Móna. The Agreed Principles set out 10 standards within which archaeology in the Bord na Móna peatlands were managed. Five Archaeological Liaison Officers were spread across the Bord na Móna Bog Groups and received training on how to deal with and report finds. Since 1998, all archaeological surveys were funded by Bord na Móna. The surveys have been accompanied by an annual programme of selective archaeological excavation and paleo-environmental analysis. By 2013, 64,000 of the c. 80,000-hectare land holdings of Bord na Móna had been subject to archaeological survey.

Bord na Móna's peat extraction and ancillary activities, and impact on archaeology is also governed under the 2012 Code of Practice agreed between the then Department of Arts, Heritage and the Gaeltacht, the National Museum of Ireland and Bord na Móna (Appendix 13-5). The Code includes a commitment by Bord na Móna to finance a balanced and cost-effective approach to archaeological investigation, excavation, post excavation and mitigation, and details the procedure to be followed if a suspected object is discovered. The Code of Practice has been implemented on all bogs operated by Bord na Móna and its contents are integrated into staff induction training. Prior to 2012, Agreed Principles for the Protection of Wetland Archaeology in Bord na Móna bogs were in place before they were updated and codified into the current Code of Practice.

All peatland surveys, assessment surveys and re-assessment surveys as well as any archaeological excavations within the Application Site were undertaken on all bogs operated by Bord na Móna as a result of the aforementioned Code of Practice.

13.1.4 County Development Plan

Specific policies regarding built heritage including archaeology, industrial heritage and monastic sites are detailed in the Offaly County Development Plan 2021-2027 which can be found in Appendix 13-1. Section 2.2.3 in Chapter 2 Background of this rEIAR also provides a summary of historic County Development Plans for County Offaly dated from 1967 onwards.

13.1.5 Scoping & Consultation

The scope for this assessment has been informed by consultation with statutory consultees, bodies with environmental responsibility and other interested parties as outlined in Section 2.4 of Chapter 2 of the rEIAR.

Scoping for the Project was undertaken originally in August 2022 and again, due to the passage of time, in June 2024.

Regarding archaeological heritage, a scoping request was sent to the Department of Housing, Local Government and Heritage on the 30th August 2022 and again on the 21st June 2024 with a follow up sent on the 20th September 2024. No response has been received to date.

A scoping request was sent to The Heritage Council on the 30th August 2022, and again on the 21st June 2024 with a follow up email on the 20th September 2024. No response has been received to date.

Further detail on scoping is provided in Section 2.4 in Chapter 2 of the rEIAR.

Consultation also took place with the Bord na Móna consultant archaeologist, Dr. Charles Mount, who produced a summary of archaeological surveys and investigations undertaken within the Application Site for the Project (See Appendix 13-3).

13.1.6 Project Description

This chapter reports the findings of an assessment of any likely significant effects on Cultural Heritage which may have occurred or are occurring as a result of Bord na Móna's peat extraction and ancillary activities at Lemanaghan Bog (the 'Application Site') during the three Project phases since 1988. Chapter 4 provides a full description of the elements of the Project which are the baseline as of July 1988, the activities from July 1988 to the cessation of peat extraction and ancillary activities in June of 2020, the management of the Application Site since June 2020, and the activities relating to historic peat extraction and ancillary activities intended to be carried out into the future. As reported in Chapter 4, the assessments in this rEIAR address the environmental effects of peat extraction and ancillary activities occurring at the Application Site. The assessments in this chapter will determine any likely significant effects that occurred on Cultural Heritage (or are likely to occur) during three differing timeframes termed 'phases' (as described in Chapter 4):

- **Peat Extraction Phase:** The likely significant effects on cultural heritage which may have occurred as a result of peat extraction and ancillary activities at the Application Site from July 1988 to the cessation of peat extraction in June 2020 (July 1988 – June 2020);
- **Current Phase:** The likely significant effects on cultural heritage which may have occurred during the management of the Application Site since June 2020 (June 2020 to present); and,
- **Remedial Phase:** The likely significant effects on cultural heritage that are likely to occur as a result of the activities intended to be carried out at the Application Site into the future.

13.2 Methodology

The assessment of the archaeology, architecture and cultural heritage of the Application Site included Geographical Information Systems (GIS) mapping and desk-based research followed by field inspection. A desk-based study of the Application Site was initially undertaken in order to assess the Cultural Heritage potential of the area and to identify constraints or features of archaeological/cultural heritage significance within the Application Site.

13.2.1 Geographical Information Systems

GIS are a computer database which captures, stores, analyses, manages and presents data that is linked to location. GIS includes mapping software and its application with remote sensing, land surveying, aerial photography, mathematics, photogrammetry, geography and tools that can be implemented with GIS software. GIS was used to manage the datasets relevant to the archaeological and architectural heritage assessment and for the creation of all the maps in this section of the report. This involved the overlaying of the relevant archaeological and architectural datasets on georeferenced aerial photographs and road maps (ESRI), where available. The integration of this spatial information allows for the accurate measurement of distances of a development from archaeological and cultural heritage sites and the extraction of information on 'monument types' from the datasets. Areas of archaeological or architectural sensitivity may then be highlighted in order to mitigate the potential negative effects of a development on archaeological, architectural and cultural heritage.

13.2.2 Desktop Assessment

The below sources were consulted as part of the desktop assessment for the Application Site and are discussed in the following sections.

- The Record of Monuments and Places (RMP);
- The Sites and Monuments Record (SMR);
- National Monuments in State Care County Offaly;
- The Topographical Files of the National Museum of Ireland;
- First edition Ordnance Survey maps (Tailte Éireann);
- Second edition Ordnance Survey maps (Tailte Éireann);
- Third edition Ordnance Survey Map (Record of Monuments and Places);
- Down Survey maps (www.downsurvey.tcd.ie);
- Aerial photographs (copyright of Tailte Éireann);
- Excavations Database;
- National Inventory of Architectural Heritage (NIAH);
- Record of Protected Structures (Offaly County Development Plan);
- Previous archaeological surveys and assessments carried out on or near to the Application Site (various); and
- Archaeological inventory of County Offaly.

13.2.2.1 Record of Monuments & Places, Sites & Monuments Record and National Monuments

A primary cartographic source which also provided baseline data for the assessment was the Sites and Monuments Record (SMR) and Record of Monuments and Places (RMP) for County Offaly. All known recorded archaeological monuments are indicated on 6-inch Ordnance Survey (OS) maps and are listed in these records. The SMR/RMP is not a complete record of all monuments as newly discovered sites may not appear in the list or accompanying maps. In conjunction with the consultation of the SMR and RMP the electronic database of recorded monuments and SMRs can be accessed at www.heritagedata.maps.arcgis.com.

A review of all National Monuments in State Care and those subject to Preservation Orders was undertaken as part of the assessment in order to ascertain any potential effects on their setting as a result of the peat extraction and ancillary activities.

13.2.2.2 Cartographic Sources and Aerial Photography

The 1st (1840s) and 2nd (1900s) edition OS maps for the Application Site were consulted, where available, as was Tailte Éireann aerial photography.

13.2.2.3 Topographical Files - National Museum of Ireland

Details relating to finds of archaeological material and monuments in numerous townlands in the country are contained in the topographical files held in the National Museum of Ireland. In order to establish if any new or previously unrecorded finds had been recovered from the Application Site, these files were consulted for every townland within same. The bogs database, also held in the National Museum of Ireland was also consulted for finds or items recovered from the Application Site.

13.2.2.4 Archaeological Inventory Series

Further information on archaeological sites may be obtained in the published County Archaeological Inventory series prepared by the Department of Housing, Local Government and Heritage. The archaeological inventories present summarised information on sites listed in the SMR/RMP and include

detail such as the size and location of particular monuments as well as any associated folklore or local information pertaining to each site. The inventories, however, do not account for all sites or items of cultural heritage interest which are undiscovered at the time of their publication. Many sites have been discovered since the publication of the Inventory Series which have now been added to the Sites and Monuments Record.

13.2.2.5 Record of Protected Structures

The Record of Protected Structures (RPS) for County Offaly was consulted for the schedule of buildings and items of cultural, historical or archaeological interest. The Offaly County Development Plan 2021-2027 also outlines policies and objectives relating to the protection of the archaeological, historical and architectural heritage landscape of the county. The digital dataset for Protected Structures was downloaded from ArcGIS online and added to the Project GIS mapping used for the creation of figures in this chapter.

13.2.2.6 Excavations Database

The Excavations Database is an annual account of all excavations carried out under excavation license. The database is available online at www.excavations.ie and includes excavations from 1985 to 2025. This database was consulted as part of the desktop research for this assessment to establish if any archaeological excavations had been carried out within or near to the Application Site.

13.2.2.7 National Inventory of Architectural Heritage (NIAH)

This source lists some of the architecturally significant buildings and items of cultural heritage and is compiled on a county-by-county basis by the Department of Housing, Local Government and Heritage. The NIAH database was consulted for all townlands within and adjacent to the Application Site. The NIAH survey for Offaly has been published and was downloaded on to the base mapping for the Application Site (www.buildingsofireland.ie). The NIAH is a state initiative under the administration of the Department of Housing, Local Government and Heritage and established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999.

The purpose of the NIAH is to identify, record, and evaluate the post-1700 architectural heritage of Ireland, uniformly and consistently as an aid in the protection and conservation of the built heritage. NIAH surveys provide the basis for the recommendations of the Minister for Housing, Local Government and Heritage to the planning authorities for the inclusion of particular structures in their Record of Protected Structures (RPS). The published surveys are a source of information on the selected structures for relevant planning authorities. They are also a research and educational resource. It is hoped that the work of the NIAH will increase public awareness and appreciation of Ireland's architectural heritage.

13.2.2.8 Previous Surveys and Assessments

A number of archaeological surveys were previously carried out within the Application Site during the lifetime of peat extraction and ancillary activities by Bord na Móna. A summary of the available results of such surveys and/or any reassessment surveys is presented in Section 13.3.4 below and also in Appendix 13-3.

13.2.3 Field Inspection

A walkover survey of the Application Site was undertaken over a number of days in December 2024 and January 2025 and was carried out as part of the assessment for the proposed Lemanaghan Wind Farm. The inspection was undertaken by Miriam Carroll of Tobar Archaeological Services Ltd. The

inspection consisted of a walk-over examination of the bog. A photographic record of the Application Site was made and is presented in Appendix 13-2.

Furthermore, 47 site investigation trial pits excavated within the Application Site were archaeologically monitored under excavation licence 21E0132 from the National Monuments Service over two phases in 2021 and 2022. The site investigations were undertaken as part of the proposed Lemanaghan Wind Farm planning application as detailed in Section 4.11.1 in Chapter 4. The stratigraphy noted within the trial pits varied throughout the Application Site but typically consisted of an upper layer of loose, soft rooty peat or milled peat overlying layers of fibrous peat. The underlying natural subsoil varied from a creamy white calcareous silty clay to a stone-free blue/grey clay to stony wet clay. The trial pits were positioned away from archaeological monuments and associated constraint zones and no features of archaeological potential were uncovered.

A subsequent phase of site investigation trial pits excavated within the Application Site was also subject to archaeological monitoring in 2023 by IAC Archaeology under excavation license 23E0885. The findings are summarised as follows:

'*Monitoring of site investigation pits was carried out by IAC Archaeology from the 24th to 26th of October 2023. A total of 14 trial pits were monitored. Nothing of archaeological potential was identified during this phase of works.*' (Whitaker and Lydon, 2023)[1].

13.2.3.1 Limitations Associated with Fieldwork

Where dense vegetation or colonized field surfaces are present, this limited the ability to inspect the field surface for any potential archaeological features. The monitoring of the site investigation trial pits as detailed above provided an opportunity to assess many areas within the Application Site for the presence of any sub-surface features, however, no such features were identified. A visual inspection of drain faces was carried out where possible, apart from those that were flooded or overgrown. No archaeological features were recorded during the site investigations.

13.2.4 Assessment of Likely Significant Effects

The likely effects on the existing archaeological, architectural and cultural heritage environment are assessed using the criteria as set out in the draft *Guidelines on the Information to be contained in Environmental Impact Assessment Reports* (EPA, 2022) and as outlined in Section 1.7.2 of Chapter 1 Introduction. The following terminology is used when describing the likely effects of the extraction industry from a Cultural Heritage perspective.

13.2.4.1 Types of Effect

- Direct effects arise where an archaeological heritage feature or site is physically located within the footprint of the Project whereby the removal of part, or all of the feature or site is thus required.
- Indirect effects may arise as a result of subsurface works undertaken outside the footprint of the Project, secondary environmental change such as a reduction in water levels and visual effects.
- Cumulative effects arise when the addition of many effects create a larger, more significant effect.
- Residual effects are the degree of environmental changes that will occur after the proposed mitigation measures have been implemented.

[1] https://www.pleanala.ie/publicaccess/EIAR-NIS/307280/rEIAR%20Appendices/15.1%20Cultural%20Heritagembined%20Report.pdf

13.2.4.2 Magnitude of Effects (Significance)

- Profound: Applies where mitigation would be unlikely to remove adverse effects. Reserved for adverse, negative effects only. These effects arise where an archaeological site is completely and irreversibly destroyed.
- Very Significant: An effect which by its character, magnitude, duration or intensity significantly alters most of the sensitive aspect of the environment.
- Significant: An effect which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment. An effect like this would be where part of a site would be permanently impacted upon, leading to a loss of character, integrity and data about an archaeological site.
- Moderate: A moderate effect arises where a change to an archaeological site is proposed which though noticeable, is not such that the integrity of the site is compromised and which is reversible. This arises where an archaeological site can be incorporated into a modern day development without damage and that all procedures used to facilitate this are reversible.
- Slight: An effect which causes changes in the character of the environment which are not high or very high and do not directly impact or affect an archaeological site.
- Not Significant: An effect which causes noticeable changes in the character of the environment but without significant consequences.
- Imperceptible: An effect on an archaeological site capable of measurement but without noticeable consequences.

13.2.5 Methodology for the assessment of effects on visual setting (indirect effects)

A standardised approach is utilised for the assessment of effects on visual setting (indirect effects) according to types of monuments and cultural heritage assets which may have varying degrees of sensitivity. This assessment takes into consideration peat extraction and ancillary activities which would not have had an effect on the visual setting of monuments. Only direct effects were likely and therefore considered in the assessment. Since peat extraction and ancillary activities (clearance of vegetation, drainage, peat extraction and ancillary activities) were confined to the surface of the peat and sub-surface, this activity type is not considered to be capable of having wider landscape negative effects on setting on cultural heritage (i.e. indirect effects).

13.3 Establishing the 1988 Baseline

Section 4.4.1 in Chapter 4 provides a detailed description of the baseline environment as of July 1988. For purposes of clarity, a short summary description is also provided here.

By 1988, land use at the Application Site was well established as industrial peat extraction. The Application Site was drained, milled peat extraction was underway, and railway infrastructure was in place. The main access point to the Application Site was off the Regional Road R436 to the south of the Application Site, into the Works area. The Lemanaghan Works, which comprised a canteen, storage sheds, and maintenance buildings, was located adjacent to the south of the Application Site, where it is still located in present day. The following ancillary infrastructure was established at the Application Site by July 1988:

- Railway infrastructure;
- Internal machine passes/tracks;
- Silt ponds and drains.
- /tracks;
- Silt ponds and drains.

13.3.1 Lemanaghan Bog

13.3.1.1 1988 Baseline

Aerial imagery indicates that by July 1988, approximately 968.7ha of the Application Site was subject to milled peat extraction. Thus, the main landcover type at this time was cutover peat. Drainage was already installed, predominantly in a northeast-southwest orientation. Railway infrastructure was laid in the bog (since the 1950s), passing the Lemanaghan Works building located adjacent to the Application Site, just off the R436 Ballycumber road, before continuing past the regional road via underpass to the rest of the Boora Bog group and Ferbane Power Station. The Lemanaghan Works area housed canteen and welfare facilities, waste storage areas, carparking facilities, Harvester Repair Bay (Planning Ref 81/375), and a refuelling area. The Application Site included 9 no. artificial silt ponds, 9 no. surface water discharge points and 8 gravity flow surface water outflows which remain *insitu* today. The topography of the Application Site is estimated to have been approximately 54-66m OD by 1988.

13.3.1.2 Current Environment

Milled peat extraction continued at the Application Site from 1988 until June 2020 when peat extraction and ancillary activities ceased. Improvements and modernisation of machinery occurred between 1988 and June 2020 which increased the efficiency and speed of operations over this time period. Maps provided in Chapter 4 detail the areas under peat extraction and ancillary activities from 1995 until 2020 and illustrate which portions of the Application Site were still undergoing peat extraction and ancillary activities at those times. In 1995 the majority of the Application Site was still under active peat extraction and ancillary activities apart from narrow strips towards the south-east side of the Application Site. By 2004 additional NE/SW orientated strips of bog further to the north-west were no longer undergoing peat extraction and ancillary activities and by June 2020 peat extraction and ancillary activities ceased. A review of the available aerial satellite imagery and annual reports of the Application Site from 1988 to 2020 also illustrate the on-going peat extraction and ancillary activities during that period. Recolonisation of areas of the bog in which peat extraction and ancillary activities had ceased are apparent on the aerial photography from 1996 onwards and particularly from 2018-2020. A photographic record of the Application Site is presented in Appendix 13-2.

13.3.2 Archaeological Heritage of the Application Site

Archaeological Heritage includes World Heritage Sites, National Monuments, sites which are subject to a preservation order, sites listed in the RMP/SMR and newly discovered archaeological sites as well as previous finds within the bog (recorded in the Bogs Database and Topographical files of the National Museum of Ireland). Each of these are addressed in the following sections. UNESCO World Heritage sites and National Monuments in State ownership in the wider landscape setting were not affected by the peat extraction and ancillary activities at the Application Site under assessment in this report and therefore are scoped out of the assessment as peat extraction and ancillary activities within the Application Site are not capable of affecting sites which are located numerous kilometres from the working bogs.

A summary of archaeological surveys and investigations undertaken within the Application Site has been prepared by Dr. Charles Mount for Bord na Mona. It is presented in Appendix 13-3 and should be read in conjunction with this chapter.

13.3.3 Recorded Monuments within the Application Site boundary

The dataset for the National Monuments Service Sites and Monuments Record (SMR) was downloaded from ArcGIS online and added to the base mapping for this assessment. This Archaeological Survey of

Ireland (ASI) dataset is published from the database of the (SMR). This dataset also can be viewed and interrogated through the online Historic Environment Viewer. GIS software (ArcMap) was then utilised to calculate the number of recorded monuments located within the Application Site boundary. A total of 488 recorded monuments are located within the Application Site boundary and are presented in table form in Appendix 13-4 and shown on Figure 13.2. The majority of these monuments were identified as a result of a peatland survey carried out within the Application Site by the Irish Archaeological Wetland Unit (IAWU) in 1993-4 as part of the Archaeological Survey of Ireland Peatland Survey. During that survey a total of 470 sightings of archaeological material were made that were subsequently included in the Sites and Monuments Record (SMR) (see also Appendix 13-3 and Section 13.3.4 below for detail).

A variety of monument types are located within the Application Site but are typical of those found in a peatland environment which largely comprise roads (trackways or toghers of either stone or wood), and structures – peatland. The monument types and number of same within the Application Site are discussed below.

13.3.3.1 Roads including Class 1, 2 and 3 toghers

One hundred and thirteen (113) roads are located within the Application Site. They include Class 1, 2 and 3 toghers and gravel/stone trackways, each of which are described below.

13.3.3.1.1 *Class 1 toghers*

Nine class 1 toghers (OF007-083—, OF007-215—, OF007-279—, OF007-280—, OF007-296—, OF007-329—, OF015-269—, OF015-270— and OF015-279—) are located within the Application Site boundary (Figure 13.3). Class 1 toghers comprise a peatland trackway/causeway constructed of wood and intended to traverse a bog and have a known orientation. In most instances they comprise substantial timber planks and have good structural definition. They may have several phases of construction indicative of long-term use and reuse. They may date from the Neolithic (c. 4000-2400 BC) to the medieval period (5th-16th centuries AD).

The class 1 toghers located within the Application Site are located in varying locations therein with four located towards the east side of the Application Site, two at the south, one at the west, one towards the north and one east of centre.

13.3.3.1.2 *Class 2 toghers*

Thirty-eight (38) class 2 toghers are located within the Application Site boundary (Figure 13.4). They comprise a length of peatland trackway, constructed of wood, believed to be over 15m in length. They have a clear orientation and good structural definition and may date from the Neolithic (c. 4000-2400 BC) to the medieval period (5th-16th centuries AD).

The class 2 toghers within the Application Site are spread out throughout same with a concentration at the west and towards the north.

13.3.3.1.3 *Class 3 toghers*

Sixty-three class 3 toghers are located within the Application Site (Figure 13.5, Figure 13.6 and Figure 13.7). Class 3 toghers comprise a short stretch of peatland trackway, constructed of wood, up to 15m in length with a discernible orientation. It may not be possible to trace them beyond a single sighting. They have evidence of deliberate structure and are interpreted as laid down to cross a small area of bog. They may date from the Neolithic (c. 4000-2400 BC) to the medieval period (5th-16th centuries AD).

The class 3 toghers within the Application Site are again spread out throughout same with concentrations at the west, north-east and towards the north.

13.3.3.1.4 *Road – Gravel/stone trackway*

Three gravel or stone trackways (OF007-327—, OF015-464— and OF007-350—) are located within the Application Site (Figure 13.8). These monuments consist of a roadway in a peatland context constructed wholly or substantially of gravel (including sand and clay), cobbles or stone slabs, or a combination of these. They predominately date to the medieval (5th-16th centuries AD) and later periods. The gravel/stone trackways within the Application Site are located towards the west, north and east side of same. OF007-350— is still apparent within the Application Site and can be traced both on the ground, on the most recent aerial imagery and on historic mapping for a length of over 750m. It appears to extend from Derryvane Island in the centre of Tumbeagh bog to dryland to the west where it appears to terminate at a 17th century house OF007-065— located outside and to the west of the Application Site.

13.3.3.2 Structures - Peatland

This monument type accounts for the largest number of recorded monuments within the Application Site with 369 present within the Application Site boundary (Figure 13.9). They comprise wood found in peat, which has been deliberately deposited or processed and can vary from single pieces to deposits without a clear form or orientation but which are indicative of an archaeological structure. They may be of any date from the Neolithic (c. 4000-2400 BC) to the medieval period (5th-16th centuries AD). The vast majority of the structures within the Application Site were identified as a result of the peatland survey undertaken by the Irish Archaeological Wetland Unit (IAWU) in 1993-4 as part of the Archaeological Survey of Ireland Peatland Survey.

13.3.3.3 Platform – Peatland

Three platforms (OF007-346—, OF007-347— and OF007-348—) are located within the Application Site boundary (Figure 13.10) and were identified as part of the Reassessment Peatland Survey 2013 (Whitaker, 2014). These monuments comprise a non-linear artificially raised area, usually of wood, with or without a clear shape found in a peatland context. Although platforms can vary in size, the length rarely exceeds the width. They may date to any period from prehistory to the early medieval period (5th-12th centuries AD).

13.3.3.4 Post Row – Peatland

One post row (OF015-345—) is located within the Application Site (Figure 13.10). It is situated towards the west side of same adjacent to a large cluster of recorded monuments. Post rows comprise a line of related posts, including stakes, in a peatland context. In certain instances, they may be the vestigial underpinnings of single-plank toghers and may date from prehistory (c. 8000 BC - AD 400) to the early medieval period (5th-12th centuries AD).

13.3.3.5 Enclosures

Two enclosures (OF007-048— and OF007-049—) are located within the Application Site (Figure 13.10). According to the monument descriptions neither are visible at ground level with OF007-048— indicated on the historic OS mapping and OF007-049— visible on a Geological Survey of Ireland (GSI) aerial photograph taken in 1973.

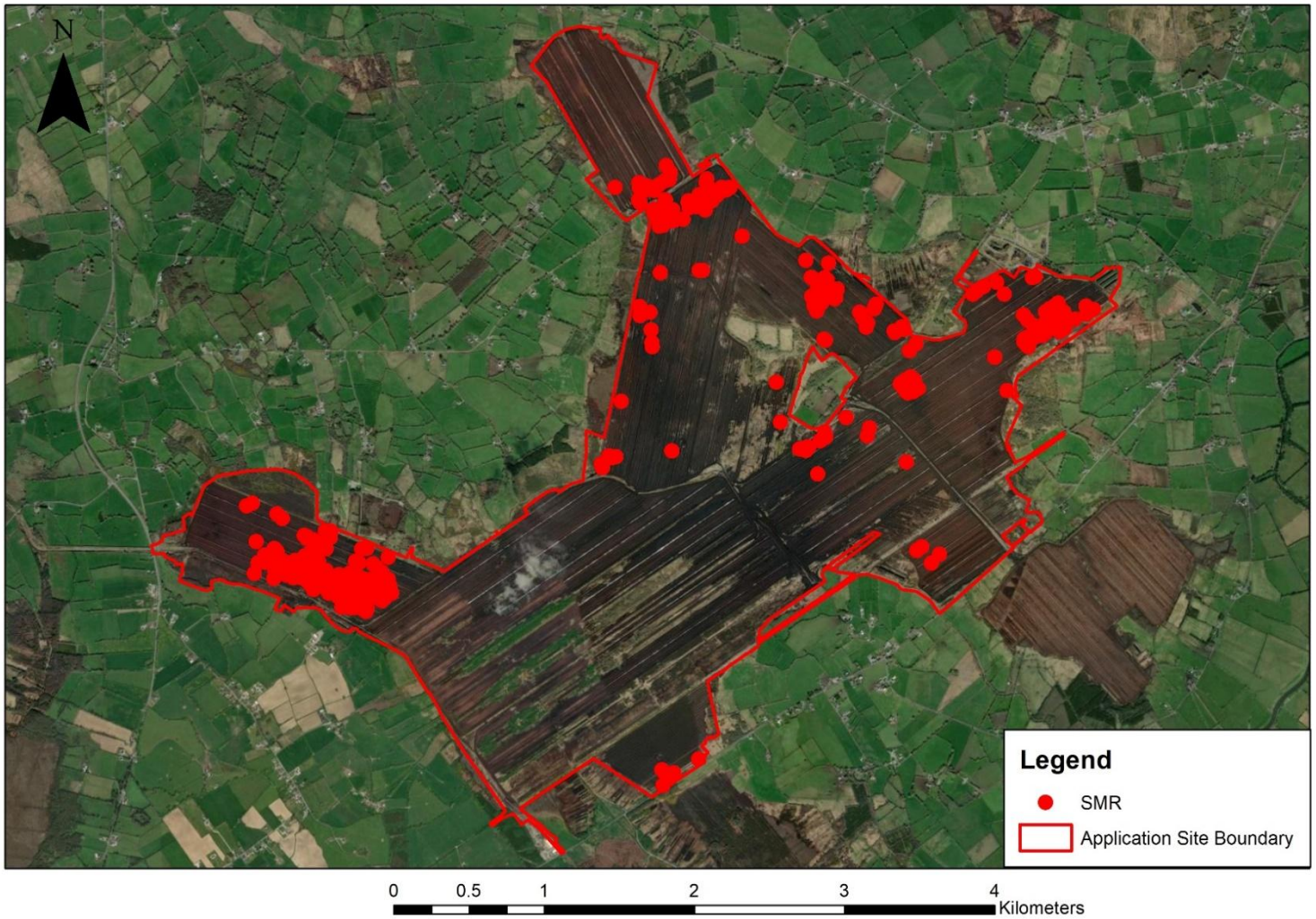

Figure 13.2: SMRs within the Application Site boundary.

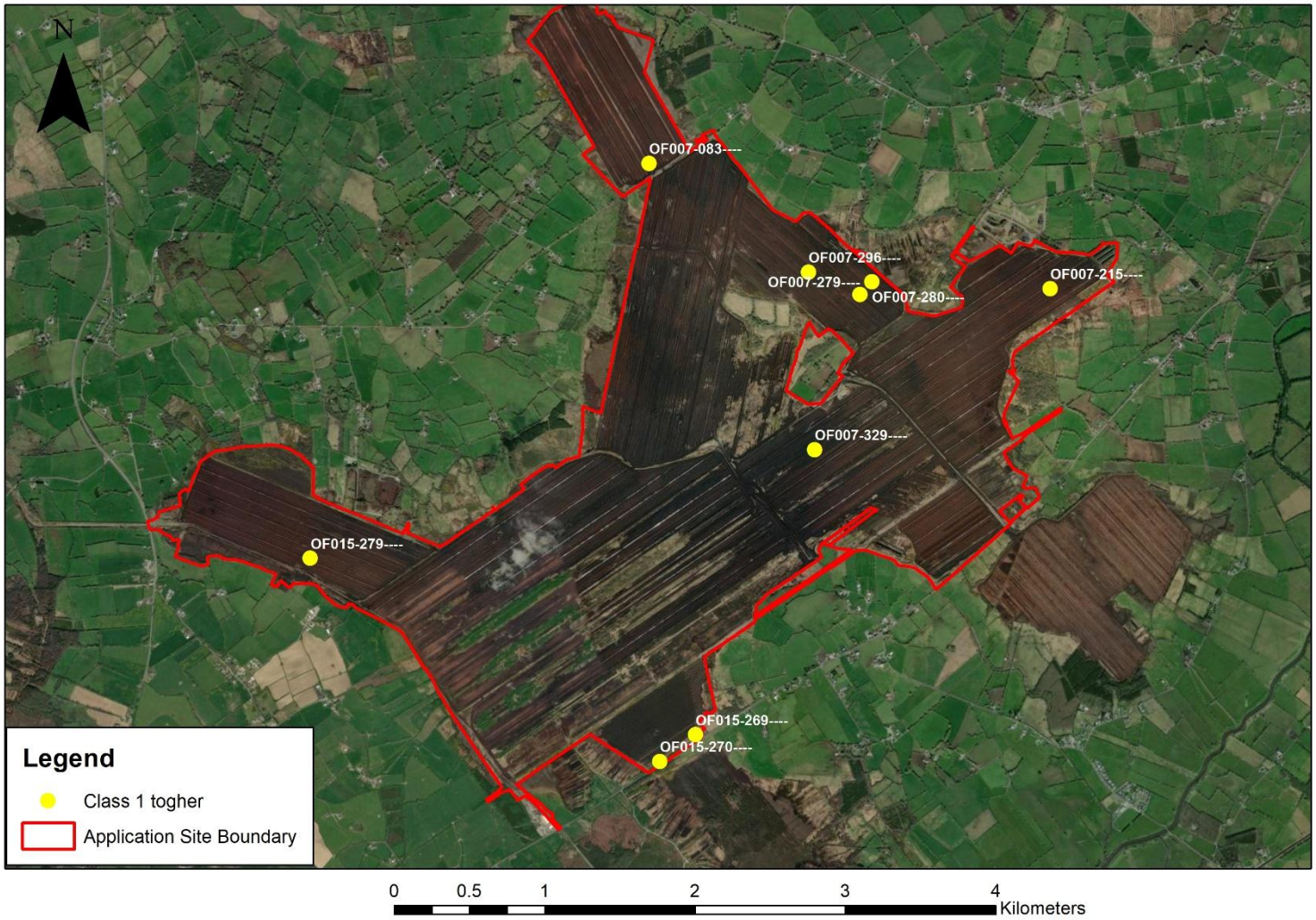

Figure 13.3: Class 1 toghers within the Application Site boundary.

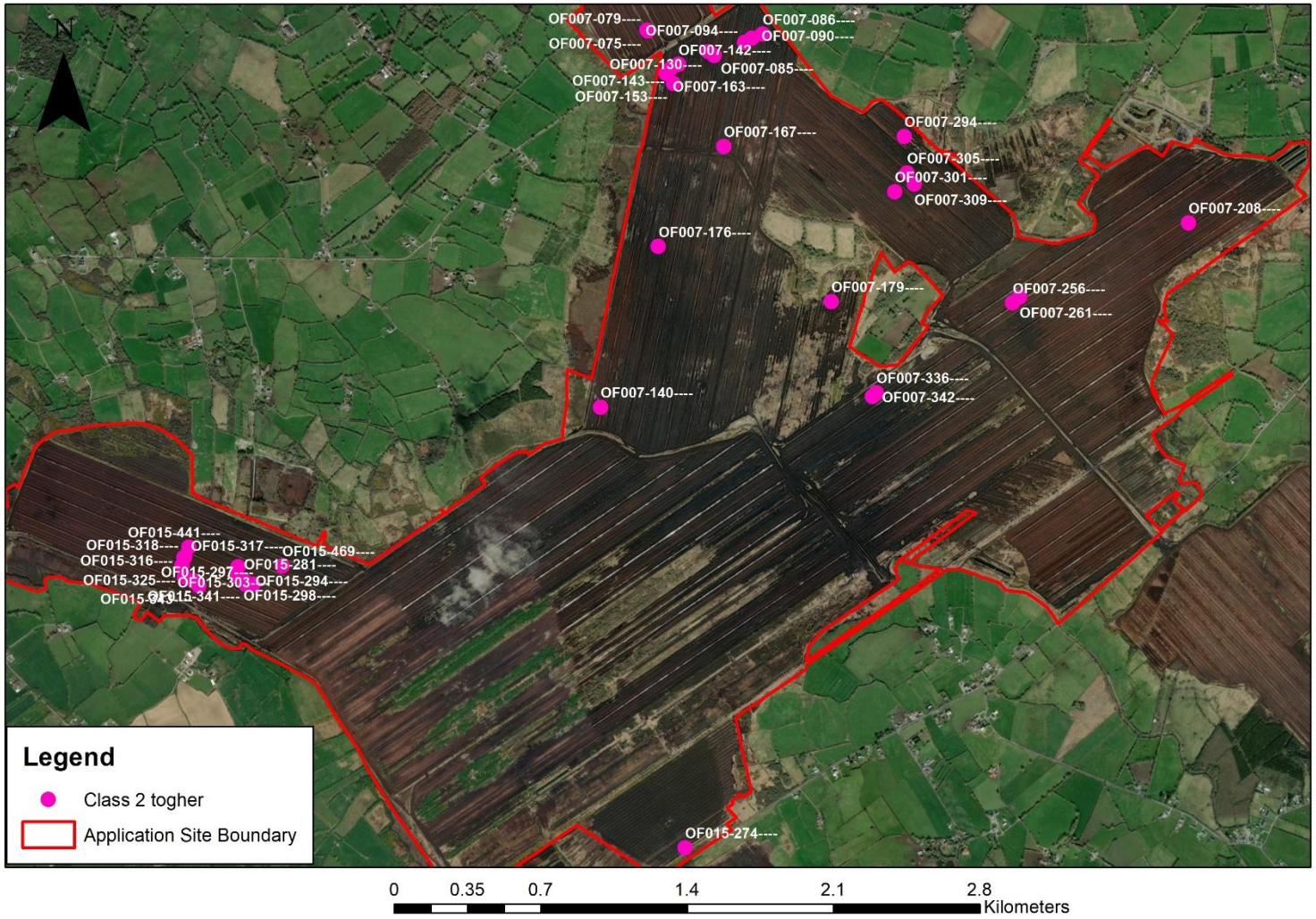

Figure 13.4: Class 2 toghers within the Application Site boundary.

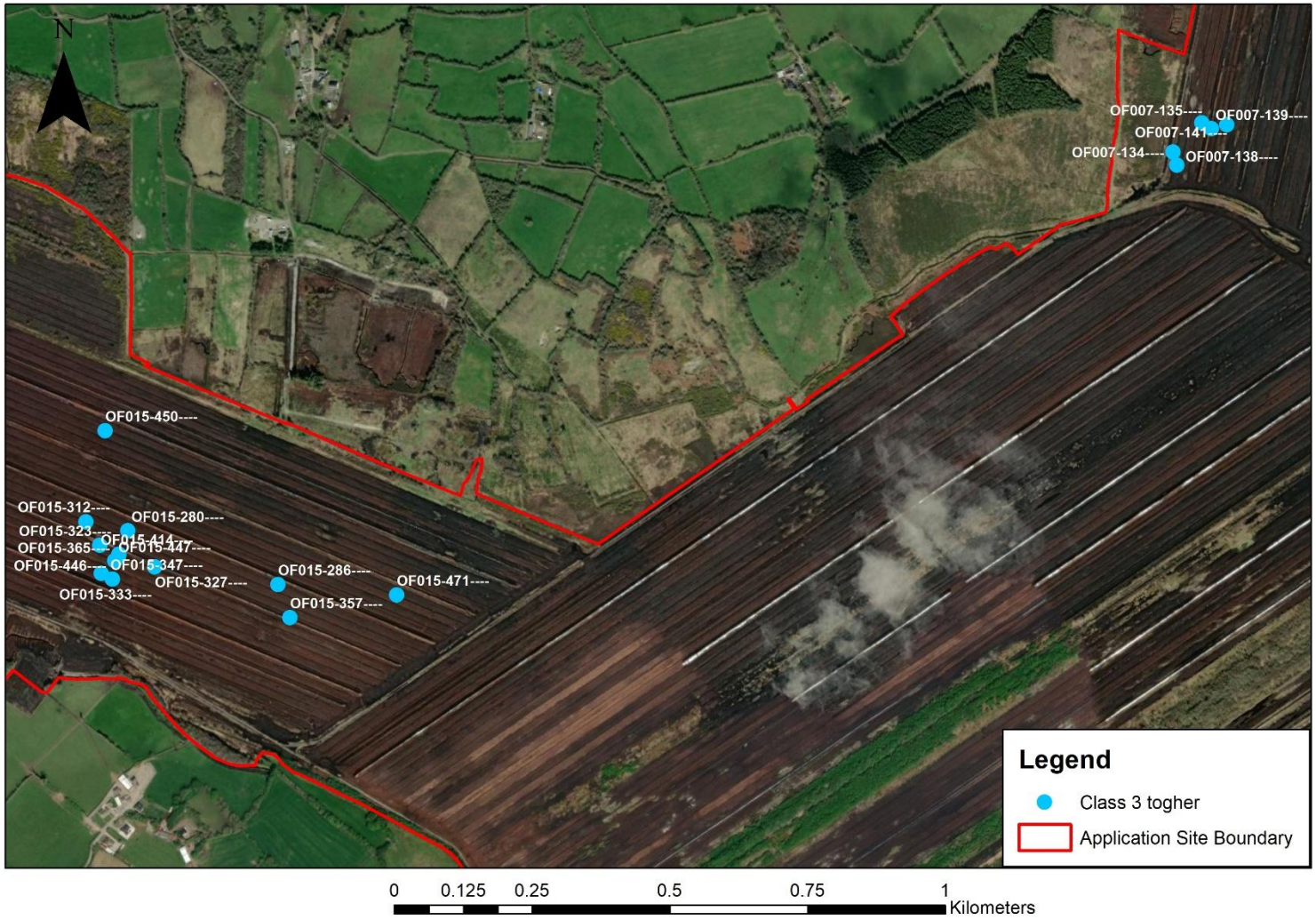

Figure 13.5: Class 3 toghers within the west side of the Application Site boundary.

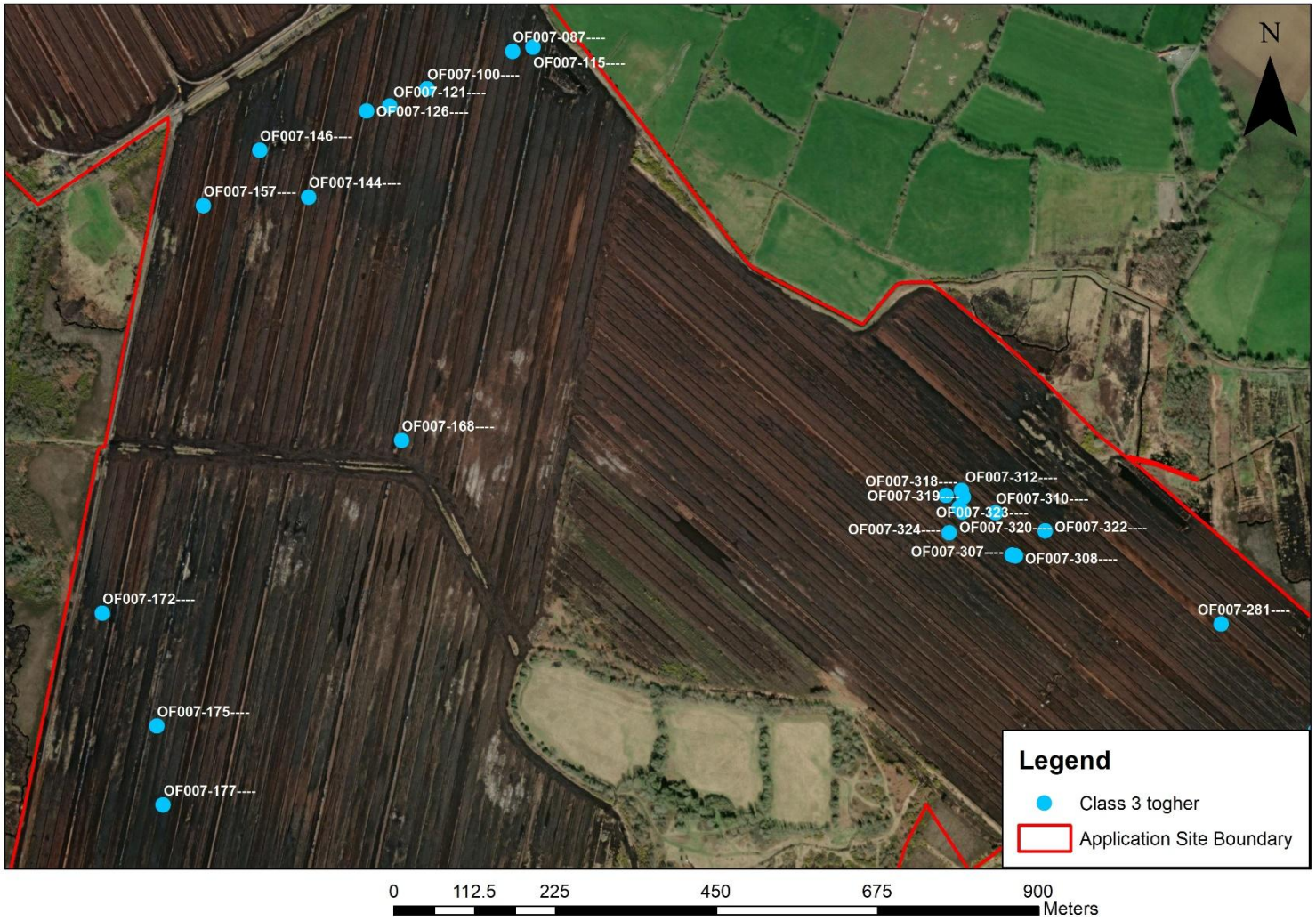

Figure 13.6: Class 3 toghers within the northern side of the Application Site boundary.

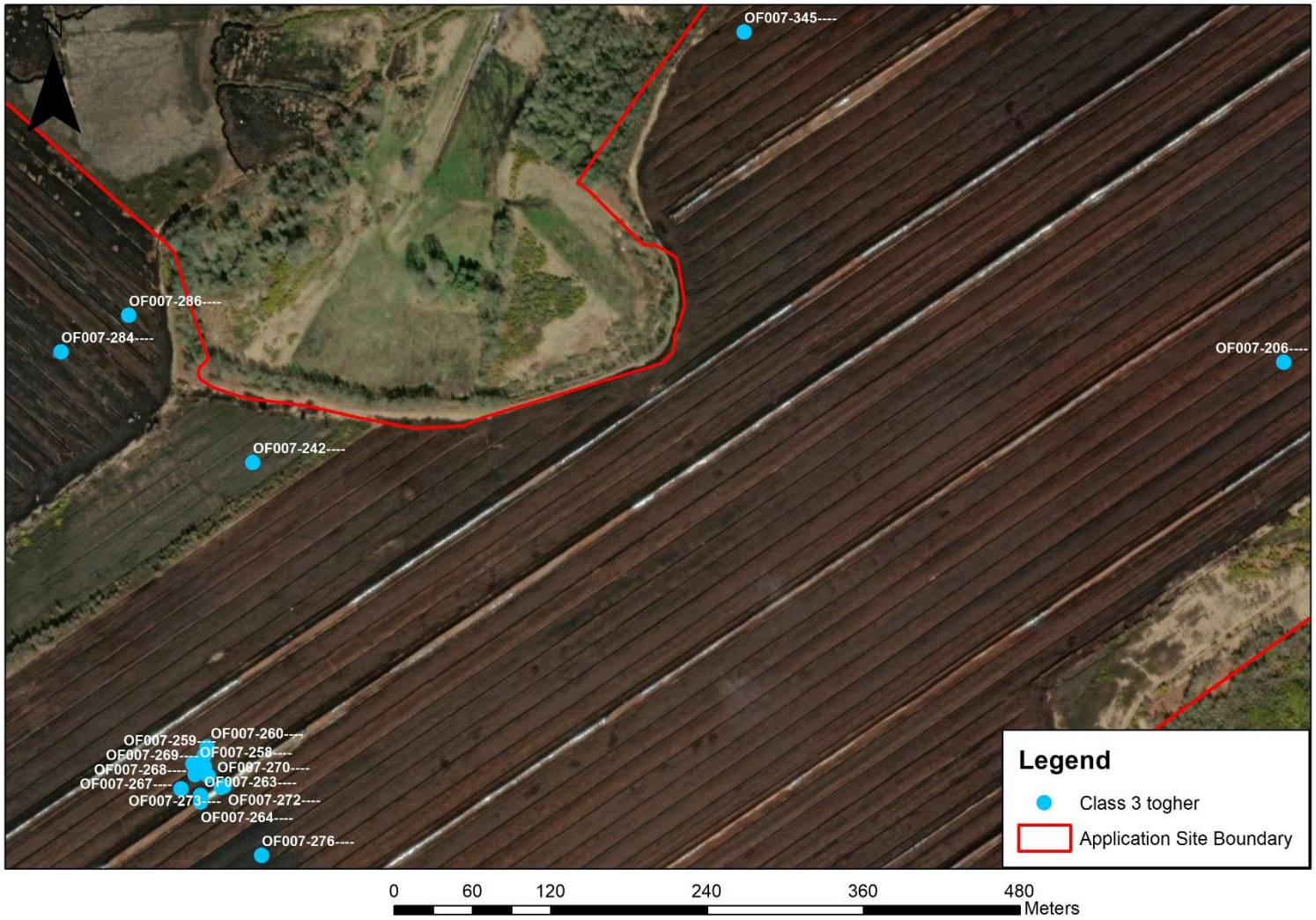

Figure 13.7: Class 3 toghers within the eastern side of the Application Site boundary.

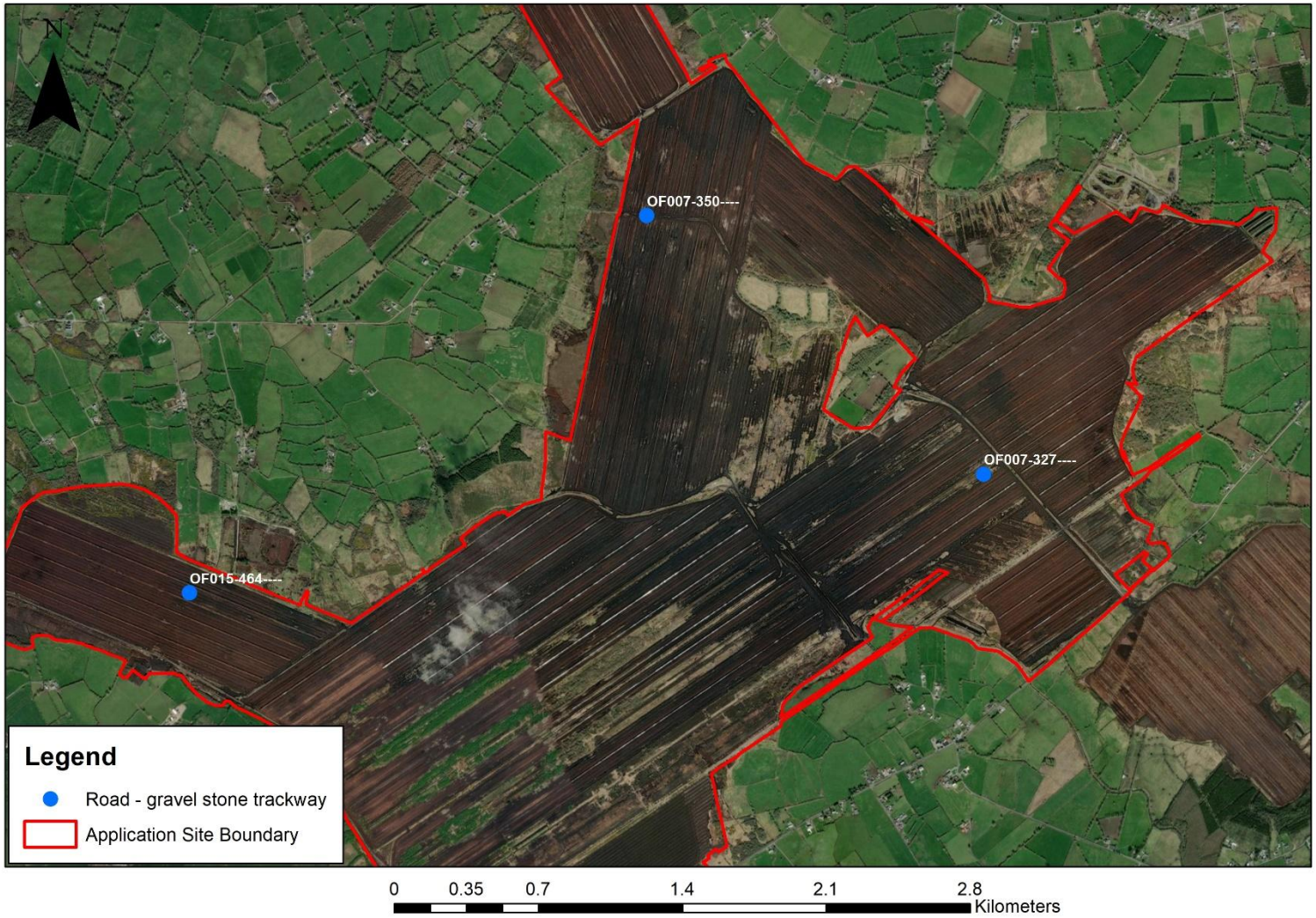

Figure 13.8: Gravel/stone trackways within the Application Site boundary.

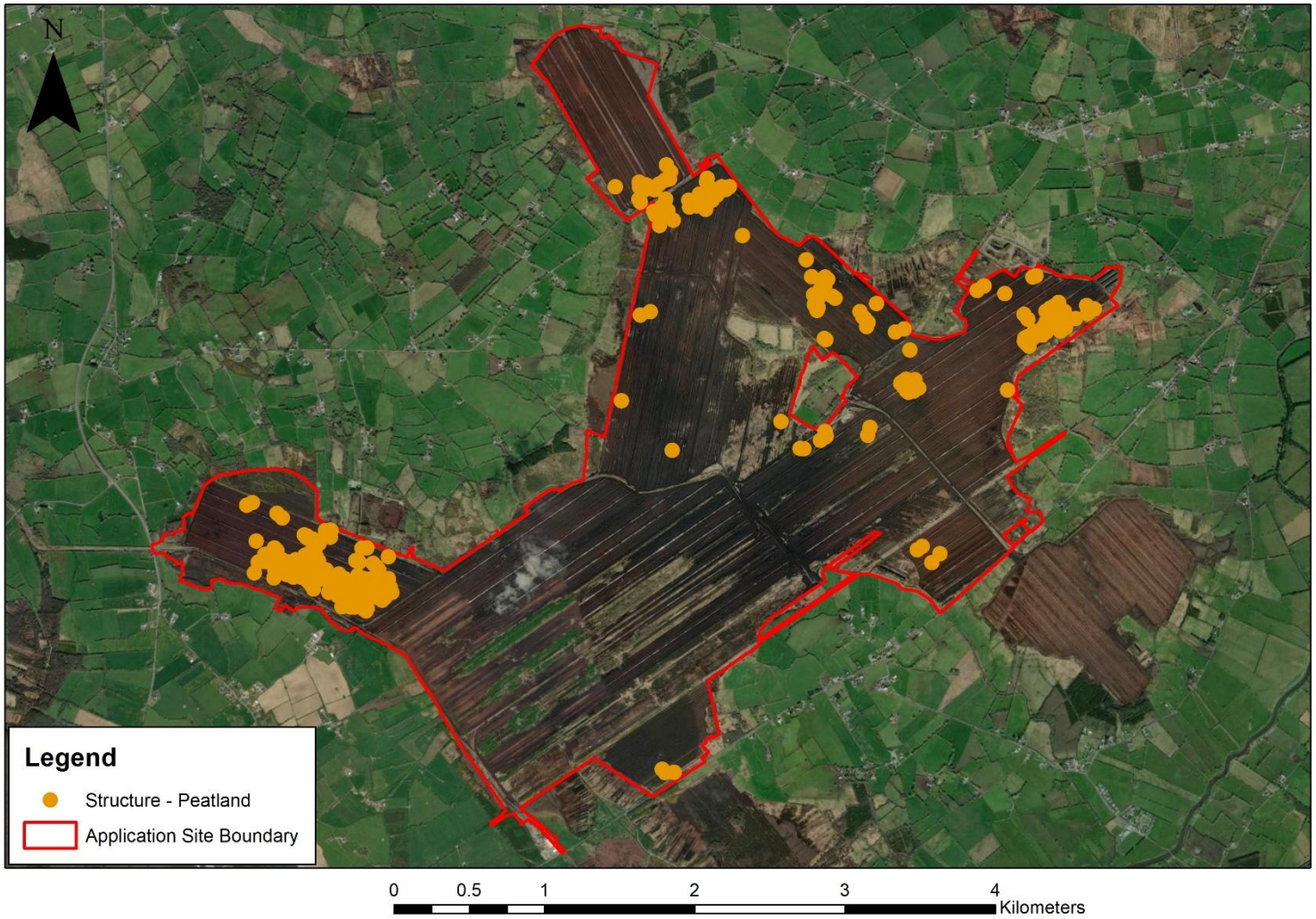

Figure 13.9: Structures- peatland within the Application Site boundary.

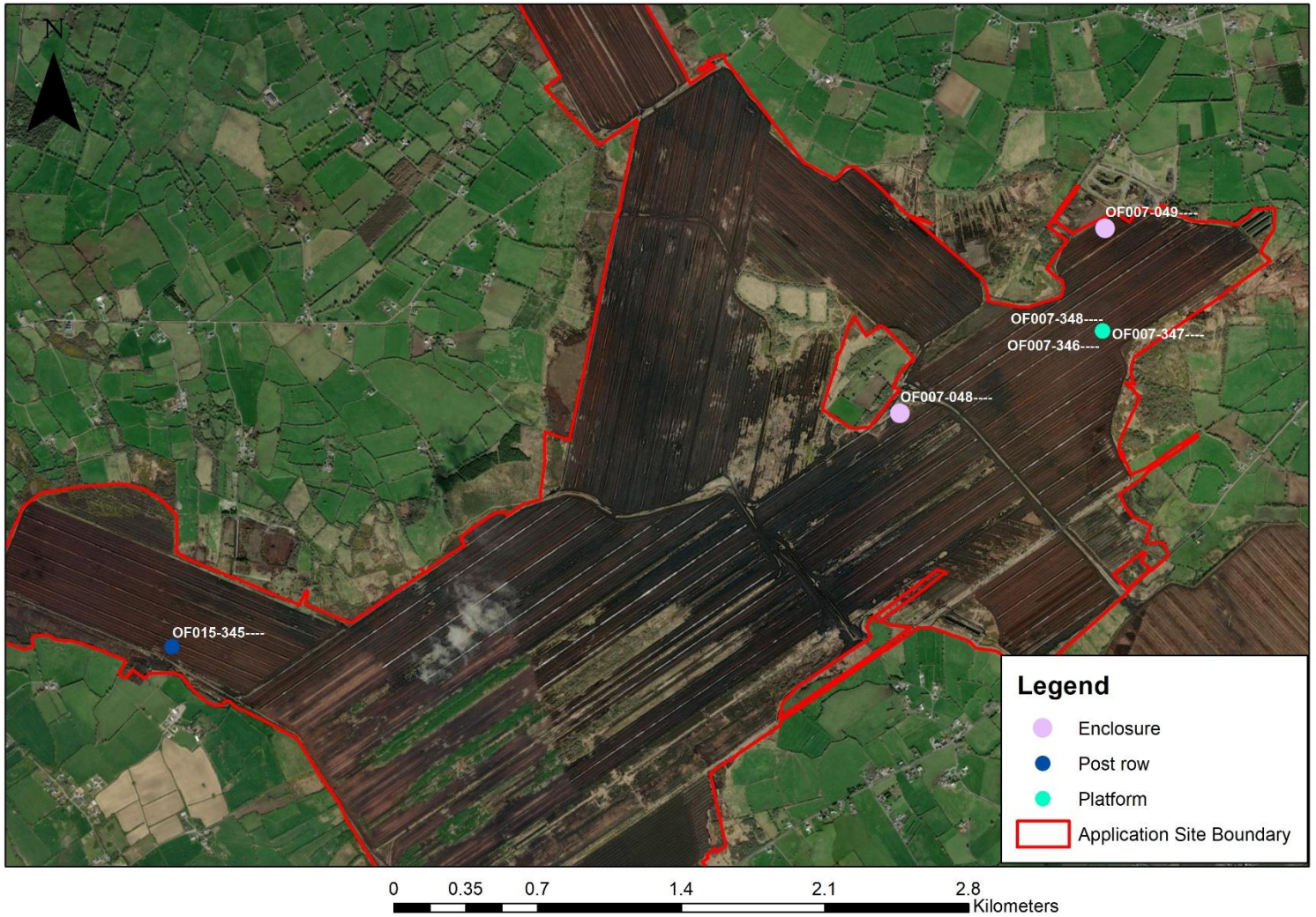

Figure 13.10: Enclosures, post rows and platforms within the Application Site boundary.

13.3.4 Archaeological Investigations

The Application Site comprises Lemanaghan Bog which is located in the townlands of Cooldorragh, Kilnagarnagh, Cappanalosset, Tumbeagh, Killaghintober, Castlearmstrong, Leabeg, Cornafurrish and Corrabeg, Lemanaghan, Kilnagoolny, Straduff, Lisdermot, Derrica More, Rosfaraghan, Rashinagh, Cor Mor and Cor Beg, and Corbane. A number of archaeological surveys and excavations were previously carried out within those townlands during the lifetime of peat extraction and ancillary activities within same by the Applicant. A summary of the available results of such surveys and/or any reassessment surveys is discussed below and is also presented in Appendix 13-3.

13.3.4.1 Previous Archaeological Surveys

13.3.4.1.1 *Peatland Survey 1993-4*

Lemanaghan Bog was surveyed by the Irish Archaeological Wetland Unit (IAWU) in 1993-4 as part of the Archaeological Survey of Ireland Peatland Survey (unlicensed). During that survey 470 sightings of archaeological material were made that were subsequently included in the Sites and Monuments Record and make up the vast majority of the recorded monuments located within the Application Site today (see Section 13.3.3 above).

13.3.4.1.2 *Assessment and Mitigation Survey 1998*

An assessment and mitigation survey of Lemanaghan Bog was undertaken in 1998 (McDermott et al. 1999). Final report on the assessment and mitigation project 1998 undertaken in Lemanaghan, Co. Offaly. Unpublished report by the Irish Archaeological Wetland Unit for Bord na Móna) and did not identify any sightings of archaeological material within the Application Site (see Appendix 13-3).

13.3.4.1.3 *Re-Assessment Peatland Survey 2013*

ADS Ltd. carried out a re-assessment fieldwalking survey of selected Bord na Móna industrial peatlands in the Blackwater, Boora, Derrygreenagh and Mountdillon Groups of bogs in Counties Longford, Offaly, Westmeath, Roscommon during 2013 (Whitaker 2014). Castletown Bog, which is 'part of an area collectively known as Lemanaghan Bogs' (ibid., 16) was surveyed as part of this work. The report goes on to state the following in relation to the findings of the re-assessment survey:

'*The Re-Assessment survey on Castletown Bog was carried out in August 2013 by ADS at which time three sites were recorded. The Plank Trackway / Road Class 1 Togher OF007-215 mentioned above was relocated and recorded as OF-CTN001a-g across 10 production fields (Figs. 7 & 8). The majority of the sightings were exposed on the field surface apart from sighting OF-CTN001a which was recorded in section in the drain face of a higher, former stockpile, field. The other two sites were short lengths of Road Class 3 toghers, one of which OF-CTN002a-b was located close to the northern limit of the BnM production bog close to the enclosure site OF007-049 while the other, OFCTN003a-b was located in the southern extent of the narrowest part of the bog in an area where there were numerous sites recorded previously.*'

The Class 1 togher referred to (OF007-215) is located within the Application Site towards the north-east side of same.

13.3.4.1.4 **Archaeological Excavation**

Peatlands Excavation Programme 1999-2000

As part of the Peatlands Excavation Programme carried out by ADS Ltd (Whitaker and O'Carroll, 2009) 28 sightings of archaeological material were excavated in 1999. A table listing the excavations undertaken, monument type and date is provided in Appendix 13-3. A summary of the excavations carried out in Castletown Bog (part of Lemanaghan Bog) is also provided in the Re-Assessment Peatland Survey 2013 (Whitaker 2014, 16) as follows:

'*Excavations were carried out in Castletown Bog in 1999 by ADS during the first season of BnM mitigation at which time 8 toghers, a platform, a plank trackway (road class 1 – togher) and wood remains were excavated under eight excavation licences (Whitaker & O'Carroll, 2009). These sites were Early to Late Medieval in date.*'

Excavations Database

The following entries were returned from the Excavations Database (www.excavations.ie) for excavations carried out at or adjacent to the Application Site. The entries returned are from a townland search of the database and while the majority pertain to excavations or surveys carried out within the Application Site some may be located outside same.

1996:326 - LEABEG, CASTLEARMSTRONG, CORNAFURRISH and CORRAHBEG, Offaly

County: Offaly
Site name: LEABEG, CASTLEARMSTRONG, CORNAFURRISH and CORRAHBEG
Sites and Monuments Record No.: N/A
Licence number: 96E0150
Author: Nora Bermingham, Irish Archaeological Wetland Unit, Department of Archaeology, University College Dublin
Site type: Road - class 1 togher
Period/Dating: Iron Age (800 BC-AD 339)
ITM: E 618982m, N 728762m

In the summer of 1993 the IAWU carried out a survey of the Lemanaghan group of bogs located to the north-east of Ferbane, Co. Offaly. Bord na Mona have been extracting peat from this group of bogs in different stages since the 1950s. In Castletown Bog, situated in the eastern part of Lemanaghan, a single-plank walkway was identified close to the field surface where Bord na Mona had cut drains through the site at regular intervals, causing extensive surface damage to the site. The site was traced for 384m and was oriented north/north-northeast/south/south-south-west. A dendrochronological sample yielded a date of AD 665±9 (Q9253).

As the IAWU were returning to the Lemanaghan area in 1996, the site was targeted for further investigation. Two short cuttings were opened along the length of the togher, which had been reduced in length by 47m between August 1993 and July 1996. The emphasis of this short excavation was on the recovery of a more extensive structural record and the retrieval of further dating samples.

In Cutting 1 (9m x 4m) the superstructure was composed of two longitudinally laid planks. These timbers were radially and tangentially split oak planks and had minimum lengths of 3m and 3.5m. The surviving end of one of the planks sat directly on a single transverse, tangentially split oak plank, 1.09m long. At each end of the cutting a yew roundwood, transversely laid, was located. These measured between 2.9m and 3.3m in length. Elsewhere in the cutting the composition of the substructure was different owing to the presence of a shallow pool. A series of short roundwoods and split timbers had been closely set and retained by pegs on slightly higher and drier ground just to one edge of the pool.

These formed a small platform over which the upper timber was placed. The pool was filled in with strips of oak bark and large amounts of oak wood-chips. The pegs ranged in length from 0.8m to 1.4m.

An oak plank with a surviving length of 4.4m formed the superstructure of the site in Cutting 2. This timber was c. 0.3m wide and 0.1m thick. An empty mortice survived close to the intact end of the plank. The substructure at this part of the site was very simple and consisted of two transverse oak planks, located towards either end of the upper timber, and occasional wood-chips. Two longitudinal roundwoods with a peg on one side were also uncovered, but it could not be determined whether they were superstructural or substructural elements.

Further variation in site construction was recorded at fifteen other locations along the line of the site. The record was restricted to what was visible either on the field surface or in the drain face. Single longitudinal planks were the most common form of superstructure. There was one instance of two longitudinal planks lying parallel to one another. At three sightings a series of parallel roundwoods, ranging in number from two to seven, formed the superstructure. Substructural elements, which were not visible to the same extent as the upper elements, were largely transverse roundwoods.

Two further dendrochronological dates were returned for the site: AD 667±9 (Q9280) and AD 684±9 (Q9279). The three dates from the site can be considered to be contemporary and demonstrate that the site was of single-phase construction.

This mid-seventh-century togher is still in the process of being destroyed. The site requires protection and/or more extensive investigation.

1996:327 - LEMANAGHAN, Offaly
County: Offaly
Site name: LEMANAGHAN
Sites and Monuments Record No.: N/A
Licence number: 96E0151
Author: Ellen O'Carroll, Irish Archaeological Wetland Unit, University College Dublin
Site type: Road - class 1 togher
Period/Dating: Multi-period
ITM: E 617927m, N 726455m

A short excavation was carried out on a multiphase togher in Bord na Mona's Derrynagun bog, Co. Offaly, in July 1996. Extensive milling and drainage in that bog had exposed a substantial togher constructed from gravel, large flagstones, split timbers, roundwood and brushwood. The excavation was carried out to establish a chronological framework for the site and to understand the nature and the sequence of construction; its relationship to an ecclesiastical settlement on a nearby dryland island at Lemanaghan was also addressed.

The togher ran for 750m from the island at Lemanaghan across the bog. A cutting 10m wide and 2m long was established over part of the site in which all known construction layers were present. The excavation revealed five phases of construction. The earliest phase was a longitudinal plank walkway of three split oak planks, measuring 1m wide and 0.52m deep. This phase was dendrochronologically dated to AD 653 ± 9 (Q9281).

Phase 2 consisted of a layer of redeposited boulder clay directly on top of the planks. It was 3.4m wide and measured 0.4m at its deepest point. The boulder clay layer was very compact and was composed of coarse sand, pebbles and round stones. It had a cobbled surface, with larger cobbles flanking the edges to form a kerb. Outwashes of gravel and clay into the peat were also associated with this phase.

Phase 3 was constructed of three layers of wood forming a substructure and a superstructure. The substructure was of brushwood and roundwoods. This was overlain by a superstructure of horizontally laid split oak planks, with large amounts of brushwood and a small amount of roundwood intertwined over and under them. Two heavy roundwoods and an associated double row of posts defined the

edges. The total width of this structure was 4.2m and the depth varied from 0.25m to 0.3m. This phase has been dendrochronologically dated to AD 1158 ± 9 (Q9282).

Directly above Phase 3 was a layer of Sphagnum peat up to 0.17m in depth. The development of this peat may indicate the abandonment of the site for a period of time, although heather noted in the peat indicates that the surface of the site might have been relatively dry. Phase 4, which lay on top of this, consisted of another layer of redeposited boulder clay. It was up to 2.6m wide and 0. 12m deep. It consisted of sticky clay, coarse sand, pebbles, stones and some very degraded brushwood.

The final phase of construction, Phase 5, consisted of a layer of large, flat sandstone flags up to 2.16m wide and 0.2m deep.

This togher was in use for over 600 years, as indicated by the dendrochronological dates. The first phase of construction, the plank walkway, is broadly contemporary with the establishment of the monastery by St Manchan on the island in AD 645. The earliest phase of the togher may have been associated with the monastic establishment, but as the site developed and expanded it probably became part of a network of routeways across the large expanses of bog in the midlands.

Analysis of the pear, wood and boulder clay is currently being undertaken and will be published in the full excavation report.

1997:App3 - IRISH ARCHAEOLOGICAL WETLAND UNIT FIELDWORK 1997—COUNTIES OFFALY, WESTMEATH AND MAYO, Offaly

County: Offaly
Site name: IRISH ARCHAEOLOGICAL WETLAND UNIT FIELDWORK 1997—COUNTIES OFFALY, WESTMEATH AND MAYO
Sites and Monuments Record No.: N/A
Licence number: —
Author: Conor McDermott, Nóra Bermingham, Ellen O'Carroll and Jane Whitaker, Irish Archaeological Wetland Unit, Department of Archaeology, UCD
Site type: Excavations - miscellaneous
Period/Dating: Multi-period
ITM: E 619211m, N 720627m

During the summer of 1997 the IAWU continued its surveys of Bord na Móna-owned bogs in the midlands. Surveys of Tumbeagh Bog, Lemanaghan Works, Co. Offaly, and Bellair Works in counties Offaly and Westmeath were completed, and a survey of Boora Works, Co. Offaly, was started. All of the area covered is owned by Bord na Móna (BnM). Licensed excavations were carried out on a pitfall trap containing red deer remains at Coolcarta East, Co. Galway, and a post row in blanket peat at Drumcullaun, Co. Clare (Excavations 1997, Nos 20 and 196 respectively). An investigation was carried out on a corduroy road at Sharragh, Co. Tipperary (No. 558, Excavations 1997), as well as an assessment of a disturbed crannóg at Frenchgrove, Co. Mayo (see below).

In each bog surveyed a standard IAWU survey strategy was used. BnM bogs have parallel drains set approx. 15m apart and every second drain is walked giving a survey interval of approx. 30m. On the first walk sites are identified and their locations marked. These are then revisited to carry out recording, sampling and the instrument survey. The process is completed rapidly as the bogs are in production, which can reduce the surface area by up to 0.2m per year.

The completed surveys have now identified over 715 sites in Lemanaghan Works, and 17 sites in Bellair Works, and to date the Boora survey has produced 31 sites. This brings the total number of sites known from bogs in north-west County Offaly to over 910, including a small number known prior to the IAWU surveys.

Tumbeagh Bog, Lemanaghan Works

Lemanaghan Works is situated, for the most part, north of the Clara–Ferbane road in north-west County Offaly (see Offaly 6" sheets 7 and 15). It covers approximately 1300ha, which forms part of a larger raised bog complex in the area. The survey of Lemanaghan Works began in 1993 and was completed in 1997 with the survey of Tumbeagh Bog. This bog produced 96 new archaeological sites.

The majority of sites occur in two bands with a number of outliers. The first is located at the northern end of the bog close to the road dividing Tumbeagh from Kilnagarnagh Bog. Here there are a large number of sightings distributed across the bog in a north-east/south-west direction. Most of these contain planks and there are a small number of distinct sites which can be traced for some distance across the bog. A number of dendrochronological dates have been obtained, all of which fall between 1050 BC and 900 BC.

The second band of sites runs north–south along the south-western side of the bog. The density of sites along this band is low although the density increases towards the south. The sites in this area are also more substantial and some can be traced across a number of drains. Trackways and deposits of worked wood were identified, and a perforated wooden shaft was recovered. A sample of one of the sites has been sent for radiocarbon dating.

1998:553 - LEMANAGHAN, Offaly

County: Offaly
Site name: LEMANAGHAN
Sites and Monuments Record No.: N/A
Licence number: 98E0464
Author: Conor McDermott, Irish Archaeological Wetland Unit, Department of Archaeology, University College Dublin
Site type: Road - class 1 togher
Period/Dating: Medieval (AD 400-AD 1600)
ITM: E 616588m, N 728129m

An excavation was carried out as part of an assessment and mitigation project in Bord na Móna's Lemanaghan Bog, Boora Works, Co. Offaly. The work was carried out between 13 October and 5 November 1998 and concentrated on a single-plank walkway and three lesser structures.

The plank walkway was first identified in 1993 during field survey carried out by the Irish Archaeological Wetland Unit, when it was traced for 454m. During the 1998 assessment the site was traced further and was finally identified as surviving intermittently over a length of 870m. The site runs in a north-south direction, and at its northern end is a zone of 25 other smaller sites to the east and west. The excavations were concentrated along a 360m length at the southernmost end of the site.

The assessment recorded visible traces of the site at fourteen locations, and nine cuttings were established. On excavation the wood in the three most southerly cuttings (Nos 1–3) proved to have been redeposited by heavy machinery. This wood was roughly aligned on the projected line of the site and represented its former presence in the general area. Cuttings 4 and 5 each produced a single in situ peg indicating the line of the site, as well as fragments of disturbed and redeposited wood. Cuttings 6–8 produced the best surviving evidence of the structure of the sites.

In each cutting the site had been truncated by Bord na Móna drains and severely damaged and partly removed by surface milling. The general pattern of construction revealed in these cuttings showed an upper surface of single longitudinal planks laid end to end supported two layers of substructure. None of the upper planks survived intact, but the excavated evidence indicates that they ranged from c. 4m to 6m long, with mortises cut through the ends, through which pegs were driven. Supporting each end of the planks was an upper substructure of single transverse roundwoods or split timbers c. 1.1m long. The lower substructure consisted of pairs of longitudinally laid timbers c. 1.5m long set c. 0.5m apart,

supporting each of the upper substructural timbers. The end of each of the superstructure planks was therefore supported by three timbers and additional lesser timbers as well as supporting pegs.

Cutting 9 produced no surviving horizontally laid timbers; however, a number of pegs survived indicating a continuation of the pattern of construction identified in other cuttings.

This form of trackway construction has not been excavated before and samples submitted for dendrochronological dating provided a date of after AD 590.

1998:554 - TUMBEAGH BOG, Tumbeagh, Offaly

County: Offaly
Site name: TUMBEAGH BOG, Tumbeagh
Sites and Monuments Record No.: N/A
Licence number: 98E0452
Author: Nóra Bermingham, Irish Archaeological Wetland Unit, Department of Archaeology, University College Dublin
Site type: Burial
Period/Dating: Undetermined
ITM: E 615569m, N 729425m

In mid-September the Irish Archaeological Wetland Unit was carrying out pre-mitigation surveys for Bord na Móna in the Lemanaghan group of bogs between Clara and Ferbane in County Offaly. During a resurvey of Tumbeagh Bog a member of the field crew, Cathy Moore, discovered what were soon to be confirmed as human remains. The remains lay on the milled surface of the bog and were visible as a small flap of damaged skin with crumbs of body fat. Initial inspection showed that skeletal material was present, and a disturbed tarsal bone was recovered from the field surface.

Consultation between Dúchas, the National Monuments Service, the National Museum of Ireland, Bord na Móna and the Irish Archaeological Wetland Unit culminated in an excavation designed to recover the in situ remains; to search for ex situ human remains and artefacts; to recover any associated archaeological objects and identify any associated features; to undertake a sampling project for palaeoenvironmental purposes, which included samples for beetle, pollen and ash content analysis as well as a peat stratigraphic survey. In addition a metal-detection survey was carried out, as well as film documentation of the excavation process. The excavation was carried out in close cooperation with Dr Máire Delaney of Trinity College Dublin.

The excavation involved trowelling c. 25m of the field surface on which the remains were found; shovelling and raking of the heavy, loose peat cover of the field immediately to the west of the find field; searching by hand a nearby stockpile for redeposited material; and defining the extent of in situ human remains by the digging of regularly placed hand-dug test-pits, followed by isolation of the human remains in a block of peat around which the excavation proceeded.

The raking of the peat on the adjacent western field produced a single, decalcified rib. The stockpile investigation resulted in the discovery of fragments of human skin as well as a lumbar vertebra, a left patella and the unfused proximal epiphyses of the left and right tibiae. The retrieval of these stray bones indicated that the body had already been extensively destroyed and served to verify that it had once been complete. Hand-dug tests-pits, excavated at half-metre intervals over an area of 3m x 3.5m, resulted in the definition of the extent of the in situ remains. These consist of either a left leg, tightly flexed, or the lower parts of a right and left leg. Skin and the proximal left tibia were visible once all disturbed peat had been removed from over the remains.

Immediately adjacent to the in situ remains a number of artefacts were recovered, which include a horizontal worked roundwood running in a northerly direction away from the area of the knee, three to four short lengths of worked brushwood, and a wooden withy as well as a stake that appeared to have been driven into the peat adjacent to the knee. In addition the metal-detection survey resulted in the

recovery of four tiny strips of non-ferrous metal. Three were found within 1m of the in situ remains, and the fourth c. 5m distant. All were retrieved from disturbed, loose peat. The metal-detection survey also included the adjacent fields and stockpile, but no further finds were recovered.

Once the site was cleared of artefacts a 2m-wide and 1m-deep moat was excavated around a 1m x 1m peat block in which the remains had been isolated. The moat facilitated the lifting of the remains and allowed a pollen monolith to be taken and a peat stratigraphic study of the peat deposits in which the remains lay to be carried out, as well as fulfilling the archaeological requirement of determining the presence or absence of associated archaeological features (absence in this case).

On completion of the moat excavation the 1m x 1m x 1m peat block was reduced in size to facilitate lifting. The reduced-size block, 1.2m x 0.6m x 0.5m, was secured within a wooden frame filled by expanding polyurethane foam, which hardened to form a shell around the block. The secured block was removed to the National Museum and stored in a fridge. The peat block is to be excavated later in the Museum.

1999:735 - CASTLETOWN BOG, Castlearmstrong, Offaly

County: Offaly
Site name: CASTLETOWN BOG, Castlearmstrong
Sites and Monuments Record No.: N/A
Licence number: 99E0288
Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 3 togher
Period/Dating: Undetermined
ITM: E 617185m, N 728865m

This site was an area of degraded brushwood. A cutting 1m x 2m was placed over the site, and excavation revealed sixteen dispersed brushwoods with no particular arrangement. Three pieces of brushwood at the northern end of the cutting represented the remains of pegs. One of the pegs had a toolmarked end. The wood represents the substructural remains of a brushwood togher.

1999:736 - CASTLETOWN BOG, Castlearmstrong, Offaly

County: Offaly
Site name: CASTLETOWN BOG, Castlearmstrong
Sites and Monuments Record No.: N/A
Licence number: 99E0289
Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 3 togher
Period/Dating: Undetermined
ITM: E 617193m, N 728885m
Latitude, Longitude (decimal degrees): 53.309973, -7.742012

This site was the remains of a brushwood togher on the surface of a Bord na Móna production field. Excavation revealed the remains of the upper elements of a linear brushwood togher and a lower layer of pegs. The togher was 1.32m wide, 60mm deep and 15m long. The wood was concentrated at the northern end of the cutting and was two layers deep. The upper layer was composed of some milled and broken longitudinals between 5mm and 47mm in diameter. The longitudinals were laid approximately north-west/south-east. There was also some transverse brushwood placed over and under the longitudinals. The transverses were slightly larger than the longitudinals, up to 50mm in diameter. This upper layer of wood represents the walking surface of the togher.

A second layer of wood was revealed underneath a thin peat layer. This context consisted mainly of pegs between 10mm and 40mm in diameter. The pegs were also clustered at the northern side of the cutting. Toolmarks were recorded and sampled from both of the wood layers. All were simple, multi-faceted, chisel-cut points.

1999:737 - CASTLETOWN BOG, Castlearmstrong, Offaly

County: Offaly
Site name: CASTLETOWN BOG, Castlearmstrong
Sites and Monuments Record No.: N/A
Licence number: 99E0290
Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 2 togher
Period/Dating: Undetermined
ITM: E 617169m, N 728838m

This site was a brushwood togher on the surface of a Bord na Móna production field. Excavation revealed the remains of a linear brushwood togher, two layers deep, secured into the peat with pegs. The togher was 0.95m wide and 0.13m deep. The first layer comprised both longitudinal and irregularly placed brushwood, five to seven rods wide and three rods deep. The togher was best preserved at its eastern end and quite disturbed at its western end from a combination of exposure to the elements and Bord na Móna milling. The brushwood rods ranged in diameter from 20mm to 50mm. There were several pegs noted around the edge of this togher, and some twig infill was recorded between the brushwood. The pegs were set into the peat at angles of 35–50º.

A second layer of wood was excavated underneath the upper brushwood, which consisted of an abundance of twigs, several pegs and some irregularly placed brushwood. These pegs averaged 20mm in diameter. Bark was present on over half the wood excavated. The site was traced along the Bord na Móna field surface for 20m.

1999:738 - CASTLETOWN BOG, Castlearmstrong, Offaly

County: Offaly
Site name: CASTLETOWN BOG, Castlearmstrong
Sites and Monuments Record No.: N/A
Licence number: 99E0291
Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 1 togher
Period/Dating: Undetermined
ITM: E 617215m, N 728868m

This site was a 5m-by-5m cutting placed within a zone of brushwood structures. The area previously could not be defined into individual, separate structures. The excavation revealed four wooden structures.

Site A was a small puddle togher, which was excavated in its entirety. It was constructed of layers of small brushwood and twigs to make a compact structure. The peat related to this site is indicative of a very wet environment. This togher was constructed to cover a very wet area of peatland to facilitate safe crossing. No pegs were associated with this togher, which suggests that the structure may not have been intended to be permanent.

Site B was a compactly constructed trackway composed of twigs, brushwood and pegs four layers deep. Bord na Móna milling had destroyed some of the upper elements of this site. The trackway was 0.16m deep and 32m long, and its maximum width was 0.9m. The site curved around an orange sphagnum

area of Sphagnum cuspidatum peat, which probably represents a pool or area of open water at the time of its construction.

Site C was the milled remains of a brushwood togher constructed of two layers. The superstructure, which was the actual walking surface of the togher, was constructed using long, straight brushwood. The substructural layer was composed of lighter brushwood and some small twigs. The site was very disturbed in the central portion. Track C was traced for 1m to the north of the cutting and then petered out. This site was visible in the section of the drain face to the south of the cutting but could only be traced for another 1m after this. The total length of this togher was 8m.

Site D represented the remains of a sparsely constructed togher. This togher was only present at the north-western and south-eastern end, as milling had destroyed the middle portion. The track was 0.8m wide and 90mm deep. The superstructure was constructed of approximately ten longitudinally placed brushwood rods. The brushwood measured 15–40mm in diameter, and they were spaced c. 50mm apart.

A substructural layer was excavated underneath at the south-eastern end of the cutting. It was composed of six pieces of brushwood averaging 30mm in diameter. There was a bed of twigs also associated with the wood. This twig bed was 0.2m in diameter and was not as compact as the twig beds associated with Site B. There were two pegs associated with the togher, which were found at the south end of the cutting. Bark was present on 60% of the wood and twigs. Two toolmarked brushwoods were recorded from this layer. This track was visible on the field surface to the north of the cutting for c. 1.5m. It was also visible in the drain section to the south and was traced from there for another 1.2m. The total length of this togher was 8.5m.

All of the tracks described above were found very close together and appear to be running in the same general direction. They could only be traced for a maximum distance of 32m, and it is possible that they were laid down across a short stretch of particularly wet bog that could not otherwise have been crossed.

1999:739 - CASTLETOWN BOG, Castlearmstrong, Offaly

County: Offaly
Site name: CASTLETOWN BOG, Castlearmstrong
Sites and Monuments Record No.: N/A
Licence number: 99E0292
Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 3 togher
Period/Dating: Undetermined
ITM: E 617236m, N 728806m

This site was an area of brushwood. Three clusters of brushwood survived in the cutting, the least damaged pieces at the southern end. They were placed longitudinally and measured 15–45mm in diameter. Some pegs and transversely laid twigs were also found at this end of the cutting. The twigs functioned as packing material in between the longitudinals. The remaining brushwood in the cutting was substructural in appearance and was more irregularly arranged, with several peg-like elements. The wood represented the remains of some superstructural and substructural elements of a brushwood togher. The site was traced for 11m.

1999:740 - CASTLETOWN BOG, Castlearmstrong, Offaly

County: Offaly
Site name: CASTLETOWN BOG, Castlearmstrong
Sites and Monuments Record No.: N/A
Licence number: 99E0325

Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 2 togher
Period/Dating: Undetermined
ITM: E 618037m, N 729184m

Excavations revealed a large roundwood lying east-west 0.13m in maximum diameter, which narrowed gradually towards its western end. The roundwood was exposed for 1.27m in the cutting but could be traced outside the cutting to measure 1.65m in total length. The roundwood was orientated on an east-west axis, with several small fragments of wood at its eastern end. Several other milled and disturbed pieces of wood could be traced on the same field surface to the north. The track could be traced for 16.46m by the presence of disturbed pieces of wood on the Bord na Móna field surface.

The wood excavated in this cutting represented the remains of a linear brushwood togher. The roundwood may have been a transverse timber placed under the main track. The presence of the milled wood on the Bord na Móna field surface indicates the last remnants of this togher.

1999:752 - KILLAGHINTOBER BOG, Tumbeagh, Offaly

County: Offaly
Site name: KILLAGHINTOBER BOG, Tumbeagh
Sites and Monuments Record No.: N/A
Licence number: 99E0446 and 99E0447
Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3.
Site type: Road - class 1 togher
Period/Dating: Bronze Age (2200 BC-801 BC)
ITM: E 615241m, N 729385m

These sites were recorded as two separate trackways during the reassessment survey in 1998. Excavations in 1999 revealed that they were actually both the same site, a linear plank trackway traced across the Bord na Móna fields for a length of 420m. This plank trackway has been dated by The Queen's University of Belfast Radiocarbon Laboratory to 940 BC.

The site varied slightly in composition along its length, as did the level of preservation. Eight cuttings were placed along the length of the site, which was a simple trackway construction composed of longitudinal oak planks laid end to end and underlain at the northern end by transverse planks. The average diameter of the superstructural walkway planks was 0.25m. The superstructural planks were quite substantial and would have acted as a flat walking surface to facilitate safe crossing over the bog. There were no evidence of pegs or mortices in these cuttings, and the impression one gets from its simple construction is that this site was not intended to have been in use for a long period of time.

This trackway appears to differ slightly at the southern and northern ends. The cuttings excavated on the southern side exposed a linear plank trackway constructed of split oak planks laid end to end. The trackway appeared to be quite disturbed at certain locations, and there was no evidence of mortices, pegs or supporting transverses. The cuttings excavated at the northern end of the trackway showed evidence of transverse supports underneath the plank walkway in the form of planks and roundwoods. The above evidence suggests that transverse supports were required at the southern end of the bog to prevent the plank walkway from sinking, as it may have been much wetter in this area.

1999:753 - KILLAGHINTOBER BOG, Tumbeagh, Offaly

County: Offaly
Site name: KILLAGHINTOBER BOG, Tumbeagh
Sites and Monuments Record No.: N/A
Licence number: 99E0448

Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 3 togher
Period/Dating: Undetermined
ITM: E 616591m, N 729403m

This site was the remains of a brushwood togher on the surface of a Bord na Móna production field. A cutting measuring 1.5m x 2m was established over the site. Excavation revealed the milled remains of the upper elements of a linear brushwood togher and two lower, substructural layers of brushwood, pegs and twigs.

The brushwood togher measured 1.7m in maximum width and was traced for a length of 14m. The site was composed of a milled superstructural brushwood and roundwood layer and a lower, substructural layer orientated east-west. The superstructural layer of the togher was badly milled. It was composed of two roundwoods and around eleven brushwoods, as well as several outlying fragments. Half of the elements run transversely, and half of them were placed longitudinally. There were also three pegs associated with this layer, one of which was worked to a simple chisel point.

Two lower, substructural layers were revealed underneath the milled upper surface. The lower layers were composed of brushwood averaging 15mm in diameter, pegs and some twig packing. The pegs were found along the edges of the togher. Some were worked to a point at one end.

The remains of a leather shoe were found on the Bord na Móna field surface c. 70m south of this togher. The shoe had been exposed on the field surface for some time and had been badly damaged. A cutting was placed around the shoe, and the area was trowelled, but there was no evidence of any wood. There was no indication of wood in the surrounding area. It is possible that this shoe was originally associated with the togher (99E0448) and became dislodged during Bord na Móna milling.

1999:755 - TUMBEAGH BOG, Tumbeagh, Offaly

County: Offaly
Site name: TUMBEAGH BOG, Tumbeagh
Sites and Monuments Record No.: N/A
Licence number: 99E0378
Author: Ellen O'Carroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 2 togher
Period/Dating: Prehistoric (12700 BC-AD 400)
ITM: E 615497m, N 729210m

This linear brushwood, roundwood, hurdle and plank togher varied in composition along its length. The site was a compact linear arrangement of wood five layers deep in places. The togher was orientated on an east-west axis. The wood extended to 1.9m wide, but the main body of the togher was tightly compacted and had a width of 0.55m and a depth of 0.01m.

The upper walking surface of the track was composed of five roundwoods and around ten brushwoods, with a small amount of interspersed twigs. Several of the roundwoods were broken along their length, possibly owing to pressure from the overlying peat. There were numerous brushwood outliers around the track. These outliers possibly fell away from the track in antiquity. The only evidence for pegs was a split brushwood, which had tooling at one end and may have functioned as a peg. There was very little bark present on the wood. After the upper layer of wood was removed a second layer was recorded underneath. This was a compact arrangement of roundwoods, brushwood, twigs and wood chips up to four brushwoods deep in places. This lower layer was composed of smaller elements, with only one roundwood recorded. The wood was densely packed together owing to the presence of small brushwood and twigs. There were a lot of aquatic-loving plants such as Menyanthes trifoliata (bog bean) recorded throughout this layer of wood.

A hurdle panel was laid down alongside the brushwood togher at its eastern end. At this point a Bord na Móna drain truncated the hurdle panel, so its true length could not be established. The panel comprised a moderately tight weave of single rods over single sails. The hurdle was 0.95m wide and 50mm deep. The hurdle structure was probably constructed on dry land and then transported onto the bog and laid down alongside the brushwood/ roundwood trackway in an area where it was particularly wet.

This site was traced along the Bord na Móna field surface for a length of 32m and had been milled slightly along some of its length. This track could have supported a human's weight in an area that we know was very wet because of the presence of Menyanthes trifoliata (bog bean) in the peat. There were some substantial lenses of bog ore found in and around the trackway. Although there has been no evidence for the exploitation of these ores for industrial purposes, parallels for such activities can be seen in Holland. Middle Bronze Age trackways excavated by Casparie in Holland were constructed to provide access to areas of bog iron ore in the peat.

1999:756 - TUMBEAGH BOG, Tumbeagh and Killaghintober, Offaly

County: Offaly
Site name: TUMBEAGH BOG, Tumbeagh and Killaghintober
Sites and Monuments Record No.: N/A
Licence number: 99E0406
Author: Jane Whitaker, ADS Ltd.
Site type: Road - class 1 togher
Period/Dating: Bronze Age (2200 BC-801 BC)
ITM: E 615590m, N 729987m

This site was excavated as part of the 1999 Bord na Móna Archaeological Mitigation Project. The site was a linear plank trackway that had been identified at the drain edges and across the field surfaces of Tumbeagh Bog at twenty sightings for a distance of over 350m. The site was dated to 949±9 BC (QUB-9524). Three cuttings were excavated, two at both ends of the site and one in the middle portion. Cutting 1 was in the townland of Tumbeagh, and Cuttings 2 and 3 were in the townland of Killaghintober.

The site ran across the bog in an east-north-east/west-south-west direction almost parallel to the small modern road from Cappanalosset crossroads to the village of Doon. Its depth below surface varied from 0m to 0.7m. Its construction remained fairly consistent: either single- or double-placed longitudinal planks supported by transverse planks and held in place with pegs. While the main line of the site ran in an east-north-east/west-south-west direction, it would appear that there were at least two junctions. One of the junctions was found at Cutting 2 and ran southwards from the line of the site for 13m. The second ran northwards from Cutting 3 and was traced for a distance of 20m.

The first of the three cuttings measured 2.5m x 5m and was on the western side of the bog. At this location the site was visible at the drain edge as a linear plank with the remains of a mortice 50mm below the field surface. The site appears to slope downwards from west to east at this point. The site was composed of a single radially split longitudinal supported by three transverse planks. One of the transverse planks had a damaged mortice with an in situ peg, 435mm long and 18mm in diameter. Another peg was found in the cutting, close to the eastern baulk. This was a squared oak peg 0.43m long and 50mm x 25mm in diameter.

The second cutting measured 2.5m x 6m and was placed at one of the central sightings of the togher. This sighting contained a north-south scattering of planks and roundwoods spread for a length of 11m along the field surface at the drain edge. This location was chosen for excavation to establish whether this spread of material reflected a change in the construction of the trackway or whether there was more than one site present at this location. Two disturbed plank toghers were exposed in this cutting, which represented the first of two possible junctions along the length of the site and had a similar construction to that of the site exposed in Cuttings 1 and 3. The main line of the plank togher was found in the

northern end of this cutting, while the junction ran away from it in a south-east/north-west direction. The remains of two longitudinal planks and a transverse plank fragment were exposed. There were two squared oak pegs 37mm and 42mm in diameter set at 70° off vertical to the east of the transverse plank. These pegs were similar to the squared peg from Cutting 1.

The south-east/north-west-running togher was also quite disturbed and was composed of three longitudinal and two transverse planks. One of the transverse planks underlay and the other overlay the longitudinals. Two of the longitudinals had regular square-cut mortices.

The third cutting, 2.5m x 5m, was established at the best-preserved part of the site, at the eastern extent of the plank trackway close to the drain edge. This cutting contained two longitudinal planks, laid side by side, both of which had square-cut mortice holes at their eastern ends. One of the mortices contained a squared oak peg, with a smaller peg inserted alongside it to keep it in place. The eastern part of the cutting contained a scattering of plank fragments and four pegs along the line of the site, which represented the last remains of the site. The pegs were 39-40mm in diameter, and their lengths ranged from 0.62m to 0.97m. The absence of longitudinal planks in the eastern part of the cutting is not unusual as it is possible for wetland sites of this nature to become displaced in antiquity owing to the waterlogged conditions in the surrounding bog.

Milled longitudinal and transverse planks were found on the field surface 5m to the north of Cutting 3. These timbers represent the second of the two possible junctions mentioned above. These timbers ran in a north-south direction, from the nearby dry land towards the excavated site. This site was similar in composition to the excavated site. It was composed of two upper longitudinal planks supported by transverse and irregularly laid planks and was traced for a distance of 20m.

1999:757 - TUMBEAGH BOG, Offaly

County: Offaly
Site name: TUMBEAGH BOG
Sites and Monuments Record No.: N/A
Licence number: 99E0404
Author: Jane Whitaker, ADS Ltd.
Site type: Structure - peatland
Period/Dating: Undetermined
ITM: E 615397m, N 729687m

Excavations were carried out in Tumbeagh Bog, Co. Offaly, as part of the 1999 Bord na Móna Archaeological Mitigation Project.

This site was initially recognised as an irregular grouping of brushwood rods and pegs visible on the field surface. It was composed of small rods and pegs with no discernible orientation or construction pattern. The wood was concentrated in an area measuring 2.5m x 2.8m. The site appeared to have a single construction phase and was 0.08–0.12m deep. It was composed of over 300 irregularly laid brushwood rods, approximately 50% of which were pegs. These were set into the peat at angles of 70° to 90°, and most were broken in several pieces. These elements varied from 0.04m to 0.46m long, none having diameters of more than 20mm. From the broken nature of the pegs, the site appears to have been disturbed by both the milling process and the weight of machinery passing over it.

From its small size, lack of orientation and the large quantity of pegs, it appears that the site may have been a small platform. The surrounding field surfaces were investigated, but it would appear that the whole site was contained within a 2.5m-by-2.8m area. A small gravel knoll c. 20m in diameter was found 30m to the east of the excavated site. This knoll is the highest point in the bog, rising c. 8m above the surrounding production fields. The underlying peat conditions would suggest alternating wet and dry conditions at the time of the platform's construction. It is hoped that further analysis will provide a more conclusive explanation for the construction of the site in this location.

1999:758 - TUMBEAGH BOG, Offaly

County: Offaly
Site name: TUMBEAGH BOG
Sites and Monuments Record No.: N/A
Licence number: 99E0405
Author: Jane Whitaker, ADS Ltd.
Site type: Road - class 3 togher
Period/Dating: Undetermined
ITM: E 615897m, N 729367m

This excavation was carried out in Tumbeagh Bog, Co. Offaly, as part of the 1999 Bord na Móna Archaeological Mitigation Project.

The site was initially identified as a small brushwood togher on the surface of a Bord na Móna production field. A small cutting, 1m x 2m, was excavated and revealed the remains of a narrow, linear, brushwood togher. The site was composed of longitudinal brushwood and roundwoods placed side by side to provide a walking surface. This site was 0.33m in maximum width and three to four rods wide. The rods ranged from 20mm to 90mm in diameter, and their upper surfaces had been machine damaged. The substructure appears to have consisted of some irregularly placed brushwood underlying the upper longitudinals. Several of the elements had toolmarks that varied in type from pencil points to wedge and chisel points.

The surrounding field surfaces were investigated to establish the full extent of the site, which was traced for a length of 8m. The site did not appear on the adjoining field surfaces, although it is possible that it was originally longer and had been destroyed by peat production.

1999:734 - CASTLETOWN BOG, Castlearmstrong, Offaly

County: Offaly
Site name: CASTLETOWN BOG, Castlearmstrong
Sites and Monuments Record No.: N/A
Licence number: 99E0287
Author: Ellen O'Carroll, ADS Ltd.
Site type: Road - road/trackway
Period/Dating: Undetermined
ITM: E 617183m, N 728845m

The following excavations (Nos 734–43 and 752–58 below) were carried out in the Lemanaghan area of County Offaly as part of the Bord na Móna Archaeological Mitigation Project. They were undertaken to resolve known archaeological sites so that Bord na Móna could resume peat production in areas that had been cleared of archaeology. The fieldwork took place from June to September 1999.

The Lemanaghan complex of bogs is north of the River Brosna, between the towns of Ballycumber and Ferbane. This work concentrated in Castletown (99E0287–92), Tumbeagh (99E0377–8 and 99E0404–6) and Killaghintober bogs (99E0444–8), in which a total of eighteen excavations, comprising 35 individual cuttings, were completed. Areas of brushwood structures found close to each other were excavated in Castletown Bog (99E0287–91), as well as a linear plank trackway (99E0326). Three brushwood toghers (99E03778 and 99E0405), a brushwood platform (99E0404) and a linear plank trackway (99E406) were excavated in Tumbeagh Bog. Three linear plank trackways and a brushwood togher were excavated in Killaghintober Bog (99E0444-8).

Castletown Bog, Castlearmstrong

This site was a brushwood togher that extended on the Bord na Móna field surface for a distance of 31m. Excavation revealed a partially milled brushwood togher 0.75m wide and 0.23m deep. The site

was composed of three layers of wood overlying each other. The upper layer was a substantial layer of longitudinal brushwood rods infilled with packing material and held in place with pegs. The upper longitudinals were ten to twelve rods wide and three to four rods deep at the best-preserved section of the togher. The longitudinals all ran in a north-west/south-east direction and measured 10–45mm in diameter. The spaces between the longitudinals were infilled with a packing material of twigs and small brushwood. This layer was the upper walking surface of the togher.

The brushwood associated with the second and third layers was less substantial than the upper longitudinals. The size of the wood ranged from tiny twigs to brushwood rods up to 42mm in diameter. The brushwood averaged 20mm in diameter. There were more twigs in this layer. Most of the brushwood and twigs ran longitudinally. The twigs along the western extent of the cutting had a more haphazard arrangement. Pegs were found along the outer edges of the trackway, preventing horizontal movement of the togher. The togher was traced for 25m. It is possible that it was constructed across a short stretch of particularly wet bog that could otherwise not have been crossed.

1999:743 - KILLAGHINTOBER BOG, Castlearmstrong, Offaly

County: Offaly
Site name: KILLAGHINTOBER BOG, Castlearmstrong
Sites and Monuments Record No.: N/A
Licence number: 99E0445
Author: Ellen O'Carroll, ADS Ltd.
Site type: Road - class 1 togher
Period/Dating: Early Medieval (AD 400-AD 1099)
ITM: E 619211m, N 720627m

This linear plank trackway was traced across the Bord na Móna field surface for a length of 450m. Four large cuttings were placed along its length. Each cutting produced similar constructional evidence and preservation qualities.

The trackway was a substantial construction consisting of three layers of structural elements. The upper, walking surface was constructed of split oak planks laid end to end and pegged into the peat at each end through a mortice hole. These pegs were found beside the substructural transverse timbers and would have prevented the upper plank from slipping off the substructure. Owing to the weight of the overlying peat and the Bord na Móna milling machinery, the plank had sunk into the peat and was found at the same level as the substructural timbers. The planks were also broken in several places along their length and had fallen off the underlying transverses.

The upper plank walkway was supported at regular intervals by a two-layered substructure. This substructure was composed of roundwood transverse timbers underlain by longitudinal plank runners. These planks were radial split oaks c. 2m long.

A dressed rod was found on the north-western side of the trackway. It was driven vertically into the peat. It was 20mm in diameter and 1.2m long. The top end of the rod was slightly bent, while the bottom end was stepped and then pointed. There were areas of poorly decomposed sphagnum peat with inclusions of Menyanthes trifoliata (bog bean), which suggests that these were very wet areas, probably pools, at certain locations beside the track. There were also areas of Eriophorum (bog cotton) above and around the trackway, which suggest drier conditions.

The construction methods of this trackway can be clearly demonstrated from the excavations along its the length. The substructural transverses; which consisted of a layer of roundwood and plank transverses underlain by longitudinal plank runners, supported the plank walkway and elevated it off the wet peat.

This trackway has been dendrochronologically dated by The Queen's University of Belfast to AD 596–7. The track can be traced from the dryland at Killaghintober to an island in the centre of the bog and

appears to link up with a trackway of similar date and construction excavated by the IAWU in 1998 on the opposite side of the island (Excavations 1998, 176, 98E0464). The site then runs towards Lemanaghan Island, which houses the remains of St Mella's cell (a small Early Christian rectangular oratory), St Manchan's church and Early Christian grave slabs. Although this work is only at a preliminary stage, it is probably true to say that this trackway was associated with the construction of the monastery on the island, as it was founded sometime before St Manchan's death in AD 665.

2000:0829 - CORHILL BOG, Lisdermot, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot
Sites and Monuments Record No.: N/A
Licence number: 00E0333
Author: Ellen OCarroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 1 togher
Period/Dating: Early Medieval (AD 400-AD 1099)
ITM: E 613222m, N 727636m

Excavations were carried out in Corhill Bog, Co. Offaly, as part of the Bord na Móna Archaeological Mitigation Project. These excavations were undertaken to resolve known archaeological sites so that Bord na Móna could resume peat production in areas that had been cleared of archaeology. The field season ran from June to August 2000. This licence covered the excavation of three separate trackways that were found close to each other. The sites lay in Corhill Bog, which is south-east of the Ferbane–Athlone road.

Three cuttings were set out along the length of a single plank walkway. Excavation revealed a linear plank trackway, traced across the Bord na Móna fields for a length of 140m. The site varied slightly in composition along its length, as did the level of preservation. In general the site was composed of longitudinal oak planks laid end to end and underlain in certain places by transverse planks. The upper planks would have formed the walking surface of the trackway, and the underlying transverses distributed the weight of the upper planks and raised them off the wet peat. Pegs located in mortice holes were noted in one of the cuttings. These pegs would have stabilised the trackway and prevented it from moving in the peat. The plank walkway was 3m wide, but the actual walking surface of the single planks averaged 0.4m. This site has been dated to AD 626±9 (Q-9295).

The fourth cutting excavated revealed the remains of two destroyed linear brushwood routeways (Sites A and B) located on the Bord na Móna field surface. The two sites were quite similar in construction and were composed of sparsely arranged roundwood, brushwood and pegs. The majority of the wood was laid transversely, but some of it was laid haphazardly, possibly owing to disturbance. Site B was located at the opposite side of the drain to Site A and ran parallel to it. The site was also composed of a dispersed spread of roundwood, brushwood and pegs. The roundwoods measured between 0.07m and 0.1m in diameter, and the brushwoods averaged 0.04m in diameter. Most of the elements were orientated transversely; there were some smaller brushwoods orientated longitudinally. The sites were located c. 0.8m above the plank trackway (AD 626), which separates the plank trackway and the brushwood/roundwood sites by c. 1000 years. Both Sites A and B were traced in an east–west direction for approximately 400m.

Two excavations (see Excavations 2000, Nos 830 and 832), located c. 150m east of Site A and B, were carried out by Jane Whitaker this season. The sites exposed in these excavations were similar in type and size to what was uncovered in the excavations carried out in Cutting 3. Through evidence from these excavations, it can be said that No. 830 is a continuation of Site A and No. 832 is a continuation of Site B.

2000:0830 - CORRHILL BOG, Lisdermot, Offaly

County: Offaly
Site name: CORRHILL BOG, Lisdermot
Sites and Monuments Record No.: N/A
Licence number: 00E0399
Author: Jane Whitaker, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 1 togher
Period/Dating: Undetermined
ITM: E 613536m, N 727509m

This excavation was carried out in Corhill Bog, Co. Offaly, as part of the 2000 Bord na Móna Archaeological Mitigation Project. This site was traced for a length of approximately 40m during the 1996 IAWU field survey; this season's work increased its length to over 80m. The 1996 survey recorded several other sites along the same field surface with very similar construction, orientation and composition. At that time these sites were not linked because they meandered along the field surface in a north-west/south-east direction and did not appear to be crossing the shortest stretch of bog. One of these additional sightings was also chosen for excavation within the mitigation strategy document and was subsequently excavated by Ellen OCarroll (see Excavations 2000, No. 829). In effect, the current excavation, along with 00E0333 (Track A) (see Excavations 2000, No. 829) has resolved ten previously recorded structures.

Two cuttings, both measuring 3m x 2m, were excavated. At both cuttings the site was visible on the field surface as an irregular scatter of dried-out brushwood rods. There was very little peat cover remaining over the site, and the majority of this was very dried out. It had a high sphagnum content with some inclusions of ericaceous root and patches of fibrous sedge material. Very little peat was removed from either cutting as some of the brushwood was already exposed on the field surface.

The first cutting excavated revealed a broken, longitudinal brushwood with four fragmentary transverses. There were also four small pegs associated with the transverse elements. The site appears to have been c. 1.3m wide. The brushwood rods varied from 10mm to 40mm in diameter and from 0.15m to 1.3m in length. A light brown peat bordered the southern edge of the site. This peat was poorly humified and contained a large amount of undecomposed sedge material, some eriophorum and patches of sphagnum. The site was placed directly over a darker, more decomposed peat with a higher eriophorum content and less sedge material and sphagnum than the adjoining peat.

There was a higher density of wood present in the second cutting, and the site was 1.25m wide at this location. There were several longitudinal elements supporting some fragmentary transverse elements with occasional pegs. The elements ranged in diameter from 0.02m to 0.47m, and all were broken.

This togher was almost completely destroyed by machine damage and subsequent exposure to the elements. It appears to have been originally composed of transverse brushwood rods supported by longitudinal brushwoods and roundwoods. It varied in width from 1m to 1.3m and ran in a north-west/south-east direction. It did not travel in a straight line but meandered along the field surface. This may be due to the local ground conditions at the time of its construction. The peat with the higher sphagnum content (therefore wetter) along the edge of the site indicates that the site was constructed along the driest rather than the straightest stretch of bog. Environmental samples were taken from both cuttings, and it is hoped to evaluate this theory at a later date. The orientation of the site is interesting in that it appears to provide access into the bog rather than serving as a crossing-point. It is proposed to date a sample from Cutting 2, which will then be compared to 00E0333 (Track A) excavated by Ellen OCarroll, to confirm the true length of the site (see Excavations 2000, No. 829).

2000:0831 - CORHILL BOG, Lisdermot, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot
Sites and Monuments Record No.: N/A
Licence number: 00E0439
Author: Jane Whitaker, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Platform - peatland
Period/Dating: Undetermined
ITM: E 613563m, N 727471m

This excavation was carried out in Corhill Bog, Co. Offaly, as part of the 2000 Bord na Móna Archaeological Mitigation Project. This site was first recorded in 1996 by the IAWU when it was identified as a 'puddle togher', composed of a central spread of interwoven pieces of longitudinal brushwood, up to two rods deep, within a band 0.67m wide. It was noted that much of the wood was broken; some was identified as alder and hazel; there was a large amount of wood exposed on the field surface; and the association of material was difficult to determine. At the time of the field survey there was a possible second, more fragmentary sighting of this site 8m to the south-east.

The volume of material described in 1996 had reduced significantly in the interim, so much so that excavation revealed that a single roundwood, in very poor condition, was the only surviving remains of this site. It was 0.85m long and 0.51m in diameter and was orientated north-north-east/south-south-west. A cutting measuring 2m x 2m was established to investigate the presence or absence of further wood close to this roundwood, but nothing further was revealed. The roundwood was set into peat that contained patches of sphagnum and eriophorum. It was identified as ash and was otherwise too fragmentary for a dating sample.

2000:0832 - CORHILL BOG, Lisdermot, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot
Sites and Monuments Record No.: N/A
Licence number: 00E0441
Author: Jane Whitaker, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 1 togher
Period/Dating: Early Medieval (AD 400-AD 1099)
ITM: E 613466m, N 727559m

This excavation was carried out in Corhill Bog, Co. Offaly, as part of the 2000 Bord na Móna Archaeological Mitigation Project. This site was recorded in the 1996 IAWU survey as a brushwood and roundwood togher and was traced for a length of over 40m. As with 00E0399 (see Excavations 2000, No. 830), the length of the site has been doubled by this season's work. This site was very similar in many ways to No. 830. It was identified along a single field surface and ran in a north-west/south-east direction. It was recorded as being 2m in width and was composed of transverse brushwood and roundwood rods. The central portion of the site was the best preserved and was noted to contain heavier elements. As with 00E0399, there were several additional sites along the same field surface, with similar construction, orientation and composition. It should be noted that the two linear structures 00E0399 and 00E0441 were located on adjacent Bord na Móna production fields. This site also connected with the second of two toghers exposed in a cutting excavated by Ellen OCarroll (see Excavations 2000, No. 829, Track B). This excavation, along with No. 829 (Track B), has resolved eleven structures that had previously been separately recorded.

The first of two cuttings excavated was located at the westernmost extent of the site. This cutting, measuring 2m x 3m, contained two transverse roundwoods. There was very little peat cover remaining

over the site, and as a result these roundwoods had been badly damaged by the milling process and were very dried out. They were 57mm and 78mm in diameter and were 0.32m and 0.85m in length. Neither element was suitable for a dating sample, but it is hoped to have them analysed for species identification. Along the northern side of the cutting beyond the northern tips of the roundwoods the peat had a high eriophorum content.

The second cutting was established to the east of the first. There was also very little peat cover remaining at this location, and excavation revealed badly milled transverse brushwood rods with a single longitudinal roundwood. The brushwood rods ranged from 16mm to 27mm in diameter and from 0.28m to 0.87m in length, while the longitudinal roundwood was 0.08m in diameter and 0.62m in length. The peat along the northern extent of the wood, as in Cutting 1, contained a high quantity of eriophorum. Several locations running westwards between the two cuttings were examined using test-trenches and revealed material similar to that exposed in Cutting 2.

The material uncovered in these two cuttings was very fragmentary. Close examination of the remaining material along the field surface, combined with examination of the IAWU record sheets, would appear to indicate that there are several sites previously recorded as individual sites that link up to form a single linear structure. These sites were all located on the field surface, and all were composed of brushwood and roundwood elements. Their construction appears to have been transverse brushwood rods laid across longitudinal brushwood and roundwood elements. The longitudinal elements were laid roughly north-north-east/south-south-west, although the exact orientation changes in places as the site meanders along the field surface. There are a few places where no evidence for the togher remains. None of these gaps are greater than 5–10m. It must be noted that drainage and the subsequent milling process have created an artificially level ground surface. Any original ground surface undulations have since been erased, which may explain the ‘gaps’ in the togher as it was recorded in July 2000. It is proposed to use dating and species identification to confirm what the investigation of the field surface and the constructional similarities appear to suggest—that this excavation, along with No. 829, Excavations 2000, (Track B), has resolved eleven previously recorded structures.

2000:0833 - CORHILL BOG, Lisdermot, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot
Sites and Monuments Record No.: N/A
Licence number: 00E0460
Author: Ellen OCarroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Platform - peatland
Period/Dating: Early Medieval (AD 400-AD 1099)
ITM: E 613267m, N 727632m

Excavations were carried out in Corhill Bog, Co. Offaly, as part of the Bord na Móna Archaeological Mitigation Project. These excavations were undertaken to resolve known archaeological sites so that Bord na Móna could resume peat production in areas that had been cleared of archaeology. The field season ran from June to August 2000. This licence covers the excavation of a brushwood and roundwood platform located at the south-western side of Corhill Bog. This platform is among a number of similar platforms excavated in the area (see Excavations 2000, Nos 834–6). They were located close together and lay on a natural gravel ridge within the bog.

The platform was composed of tightly packed brushwood rods and one large roundwood to the west of the cutting, which was also the limit of the site on that side. The brushwood was in poor condition where the wood was exposed on the surface of the bog. Elsewhere, especially around the central area of the platform, the wood was in moderate condition with some bark still surviving. The platform was shown to consist of two layers. The brushwood, 200 rods in total excavated from the first layer, averaged 0.03m in diameter, while the roundwood measured 0.1m in diameter. The length of the

brushwood averaged 0.8m, while the roundwood measured 1.66m in length. Most of the elements were laid in a north–south direction, except for an occasional one that ran in an east–west direction. Some outliers or disturbed pieces of brushwood were located in the eastern side of the cutting. There do not appear to have been any pegs associated with this structure.

After removing the upper longitudinal elements a further 100 elements were revealed underneath. These brushwoods were smaller, ranging from 0.01m to 0.02m in diameter and averaging 0.06m in length. There was no specific orientation to this layer, and it was not as densely packed as the upper layer. Twigs were noted in this lower layer also.

The platform, which was excavated in its entirety, measured 2m by 2.15m and was 0.02m deep. It was located on the field surface, and its upper surface had been milled. It is possible that the wood was laid down to serve as a small, dry platform for hunting or for the collection of a particular type of organic material located in the raised bog peat.

2000:0834 - CORHILL BOG, Lisdermot, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot
Sites and Monuments Record No.: N/A
Licence number: 00E0461
Author: Ellen OCarroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Platform - peatland
Period/Dating: Early Medieval (AD 400-AD 1099)
ITM: E 613238m, N 727573m

Excavations were carried out in Corhill Bog, Co. Offaly, as part of the Bord na Móna Archaeological Mitigation Project. These excavations were undertaken to resolve known archaeological sites so that Bord na Móna could resume peat production in areas that had been cleared of archaeology. The field season ran from June to August 2000. This report describes the one-week excavation of two small brushwood platforms. These sites were first recorded as a brushwood and roundwood trackway in 1996 during the Irish Archaeological Wetland Unit field survey and traced for a length of 60m.

Excavation revealed that the site was not a linear structure but a series of small platforms. There were two platform structures (Sites A and B) excavated in two 2m x 2m cuttings at either end of the trackway (as the method statement, completed prior to excavation, recommended). These platforms are among a number of similar platforms excavated in the area (see Excavations 2000, Nos 833, 835–6). They were located in close proximity and lay on a natural gravel ridge within Corhill Bog. One of the platforms was located on the field surface; the other was located under 0.4m of peat.

Site A was beside a drain and could be seen protruding from the drain face. The site had been cut by the drain, leaving only the southern side remaining. Over 0.4m of peat was removed to reveal the site. The platform was composed of two distinct layers. The upper layer consisted of longitudinally placed brushwood and one transverse brushwood, which ran the maximum width of the site. The transverse weaved through the longitudinals. The lower layer of the platform consisted of tightly packed brushwood rods and some small twigs used to infill the gaps. The brushwoods were three deep in places and were placed both longitudinally and transversely. Four pegs were also noted during excavation. The site measured 1.8m in width and was 0.6m in depth. Its length could not be determined as it was cut by the drain on the northern side; however, it could not have measured more than 2.8m as it was not noted in the opposite drain face. The certainty that the southern side of the platform ends in this cutting comes from the fact that nearly all of the ends of the longitudinal brushwood were worked. The worked ends were recorded, and most of them were worked to chisel-points. The facets were cut with a metal axe, and one of the worked ends had a raised signature present.

Site B was c. 45m to the south of Site A. This platform structure was on the field surface and had been slightly milled. The platform was quite similar in construction to that excavated at Site A. It was composed of roundwood (30%) and brushwood (70%), which were for the most part longitudinally laid. This platform was composed of one distinct layer, and there were seven transverses revealed that wound in and out of the longitudinals. The structure resembled a haphazardly constructed hurdle panel. The platform was excavated in its entirety and measured 3m by 2m in total. Site A has been radiocarbon dated to between AD 783 and 1149 to 2 sigma (UCD-0102).

The two platforms were probably constructed around the same time period, although the dating of Site B will confirm this. It is possible that the sites were intended to serve as a small dry platform for hunting or other such activities.

2000:0835 - CORHILL BOG, Lisdermot, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot
Sites and Monuments Record No.: N/A
Licence number: 00E0463
Author: Ellen OCarroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Structure - peatland
Period/Dating: Medieval (AD 400-AD 1600)
ITM: E 613326m, N 727544m

Excavations were carried out in Corhill Bog, Co. Offaly, as part of the Bord na Móna Archaeological Mitigation Project, in order to resolve known archaeological sites so that Bord na Móna could resume peat production in areas that had been cleared of archaeology. The field season ran from June to August 2000. This report describes the one-day excavation of thirteen pieces of wood. This site was first recorded as being the remains of a brushwood and roundwood trackway during the IAWU field survey in 1996. Excavation revealed thirteen pieces of degraded brushwood on the field surface; the upper surface of the wood had been milled. It was situated in an area measuring 0.95m north–south by 1.95m. Three of the more substantial elements ran north–south; the rest ran east–west. The brushwoods averaged 0.02m in diameter and were between 0.1m and 0.3m in length. They did not form any coherent structure. One of the larger brushwoods was cut to a chisel-point and was single-faceted.

The wood may represent the remains of a brushwood trackway, but, as there was very little wood found in the surrounding area, it most likely represents extraneous material from the larger platform structures excavated to the west.

2000:0836 - CORHILL BOG, Lisdermot, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot
Sites and Monuments Record No.: N/A
Licence number: 00E0468
Author: Jane Whitaker, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Platform - peatland
Period/Dating: Early Medieval (AD 400-AD 1099)
ITM: E 613219m, N 727554m

This excavation was carried out in Corhill Bog, Co. Offaly, as part of the 2000 Bord na Móna Archaeological Mitigation Project. This site was first recorded in section in 1996 during the IAWU field survey. It was visible on opposing drain faces, immediately below the field surface. It was constructed of light hazel rods, six to seven rods deep in places. The cutting size and location were determined in the mitigation strategy document prepared by Dúchas The Heritage Service and the National Museum.

The 2m x 2m cutting was placed on the field surface over the location recorded in 1996. The site was composed of narrow brushwood rods ranging from 9mm to 26mm in diameter with a minimum length of 0.19–1.53m (the site was cut at an oblique angle by the drain). Most of the elements were laid in a north–south direction. Only six pegs were revealed; four of these were located at the southern tips of the brushwood rods and held the rods in place. These pegs were 20–40mm in diameter. Most of the 45 upper rods had evidence for woodworking at their southern tips, all of which were chisel-points. Most of these were simple, single-faceted chisel-points, although some were multi-faceted. There was little evidence for bark on any of the elements.

After the upper longitudinal elements were removed, a further 35 elements were revealed. Similarly, these ranged from 9mm to 28mm in diameter and from 0.9m to 0.69m in length. None of these elements had any remaining bark, and, like the upper layer, most had evidence for woodworking. These again were all chisel-points.

This site was located in a part of Corhill Bog that had a large number of the more enigmatic site types. This site was primarily identified as a 'puddle togher', a term that has been used in the past to describe wood/bundles of wood thrown over a particularly wet patch of bog. The peat directly underneath this site does not appear to have been too different to the peat at the south of the ends of the brushwood rods. It is possible that the wood was intended to serve as a small, dry platform for hunting.

2000:0837 - CORHILL BOG, Lisdermot/Straduff, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot/Straduff
Sites and Monuments Record No.: N/A
Licence number: 00E0400
Author: Ellen OCarroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - gravel/stone trackway - peatland
Period/Dating: Medieval (AD 400-AD 1600)
ITM: E 613427m, N 727868m

Excavations were carried out in Corhill Bog, Co. Offaly, as part of the Bord na Móna Archaeological Mitigation Project. These excavations were undertaken to resolve known archaeological sites so that Bord na Móna could resume peat production in areas that had been cleared of archaeology. The field season ran from June to August 2000.

This site comprised a gravel-and-wood trackway, which could be traced across the width of Corhill Bog for over 400m. The trackway was located on a natural rise in the peat bog. In total, 15m of this trackway was excavated at four different locations. The unexcavated areas were recorded at intervals along its length, and a comprehensive record of the stratigraphy of the trackway was obtained. Excavation revealed that the trackway varied in composition along its length, as did the level of preservation. In one cutting it was composed of brushwood underlain by gravel; in another it was composed of just brushwood; and at other locations the trackway was composed of just gravel. It measured up to 1.8m in width, and its depth varied depending on materials used in the construction. The wood layer for the most part overlay the gravel and consisted of gnarly brushwood, twigs, bark and layers of tree leaves. In one of the cuttings the wood was arranged transversely across the width of the site and was delineated by larger roundwoods that ran longitudinally. In other cuttings there does not appear to have been any particular arrangement to the wood. The gravel consisted of sub-angular, small, coarse pebbles, some of which had degraded to a coarse sand. The largest pebbles measured 45mm by 20mm, and the smallest 5mm by 5mm.

A small number of flagstones were excavated along the length of the trackway. They were probably laid down to add further stability to the walking surface. This trackway may have been constructed to facilitate safe crossing across the bog as well as providing access to and from a series of wooden platform structures (see Excavations 2000, Nos 819–26) excavated at the southern end of this trackway.

As the site was located c. 1m over the plank trackway described in No 829 Excavations 2000, dated to AD 626, an approximate calculation of the date for the gravel and wood trackway would be around the 15th or 16th century AD.

2000:0838 - CORHILL BOG, Lisdermot/Straduff, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot/Straduff
Sites and Monuments Record No.: N/A
Licence number: 00E0400, 00R057
Author: Ellen OCarroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - gravel/stone trackway - peatland
Period/Dating: Medieval (AD 400-AD 1600)
ITM: E 613427m, N 727868m

A metal-detection survey took place along the length of site 00E0400. Because of the location of this site within the peat strata, a medieval date was suggested for the trackway. The detection device used for the survey was a White's Quantum II. The detection device was first tested to see how effective it would be in the peat environment. A key was placed in the peat at various levels, and the detector proved effective up to a depth of 0.2m.

All field surfaces along the length of the gravel and wood trackway were walked systematically. An area 10m either side of the trackway was laid out, and then the area within was walked at 2m intervals. No metal artefacts of archaeological interest were retrieved. Some modern Bord na Móna machinery parts were the only metal objects located. The trackway was over 0.4m deep in places, and the metal-detection device only worked efficiently to a depth of c. 0.2m. As a result the possibility of finding metal artefacts underneath the site was unlikely.

2000:0839 - CORHILL BOG, Lisdermot/Straduff, Offaly

County: Offaly
Site name: CORHILL BOG, Lisdermot/Straduff
Sites and Monuments Record No.: N/A
Licence number: 00E0432
Author: Ellen OCarroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: Road - class 1 togher
Period/Dating: Bronze Age (2200 BC-801 BC)
ITM: E 613717m, N 727673m

Excavations were carried out in Corhill Bog, Co. Offaly, as part of the Bord na Móna Archaeological Mitigation Project. These excavations were undertaken to resolve known archaeological sites so that Bord na Móna could resume peat production in areas that had been cleared of archaeology. The field season ran from June to August 2000. This site was excavated at the north-eastern side of Corhill Bog and represented the remains of a linear plank trackway. Subsequent tracing and investigation revealed that the trackway actually crossed the width of the bog as it was also recorded on its south-western side, although no excavations were carried out in that area.

In total, 20m of this trackway was excavated. It was a fairly simple construction comprising a linear plank superstructure laid end to end and then underlain and supported by a roundwood transverse substructure. The substructural transverses supported the plank walkway and elevated it above the wet peat. The superstructural planks were pegged into position through mortices. The trackway was 1m wide and up to 0.25m deep. Two cuttings at the far north-western side of the bog revealed broken oak planks, disturbed pegs and wood chips.

It was clear from these excavations that the trackway was very disturbed at the far north-eastern end of the site, possibly owing to the nature and type of peat on which it was constructed—a fen peat, which is extremely wet. There was evidence for these wet conditions in the form of Menyanthas trifoliata (bog bean), which only grows in open water.

The plank walkway was traced for over 420m, and a record was made at every Bord na Móna drain that bisected the trackway (i.e. every 14m). This site has been dated to 910±9 BC (Q-9292).

2000:0840 - CORHILL BOG, Rashinagh, Offaly

County: Offaly
Site name: CORHILL BOG, Rashinagh
Sites and Monuments Record No.: N/A
Licence number: 00E0462
Author: Ellen OCarroll, ADS Ltd.
Author/Organisation Address: Windsor House, 11 Fairview Strand, Fairview, Dublin 3
Site type: No archaeology found
Period/Dating: N/A
ITM: E 613226m, N 727813m

This site was recorded as a puddle togher measuring 1m by 2.33m during the Irish Archaeological Wetland Unit survey in Corhill Bog in 1996. After extensive investigation and clearing of milled peat it was apparent that there were no surviving remains of the site in the area.

2013:122 - Castlearmstrong, Leabeg and Lemanaghan, Castletown Bog, Offaly

County: Offaly
Site name: Castlearmstrong, Leabeg and Lemanaghan, Castletown Bog
Sites and Monuments Record No.: N/A
Licence number: 13E0217
Author: Jane Whitaker
Site type: Road - class 1 togher, Road - class 2 togher and Road - class 3 togher
Period/Dating: –
ITM: E 617346m, N 729377m

A re-assessment field walking survey was carried out in Curraghmore Bog in August 2013 on behalf of Bord na Móna. Castletown Bog is located 3km west of Ballycumber and 5km east of Ferbane, Co Offaly and is part of the Boora Group of Bogs. It measures c. 150ha in size and has been in production since 1992. It is part of an area collectively known as Lemanaghan Bogs comprising the adjoining Killaghintober, Lemanaghan, Corhill and Derrynagun Bogs.

There are 86 records of sites, recorded during the 1998 IAWU survey, in the Archaeological Survey of Ireland database in Castletown Bog. These comprise one Early Medieval Road – Class 1 Togher (OF007-215) from the townlands of Castlearmstrong, Cornafurrish and Corrabeg, three Road – Class 2 Toghers from Leabeg and Castlearmstrong, sixteen Road - Class 3 Toghers from Castlearmstrong and 66 now redundant records of smaller sites which were mainly composed of worked and unworked wood in situ.

Excavations were carried out in Castletown Bog in 1999? by ADS during the first season of BnM mitigation at which time 8 toghers, a platform, a plank trackway (road class 1 – togher) and wood remains were excavated under eight excavation licences. These sites were Early to Late Medieval in date.

The Re-Assessment survey on Castletown Bog was carried out in August 2013 by ADS at which time three sites were recorded. The Plank Trackway/Road Class 1 Togher OF007-215 mentioned above was relocated and recorded as OF-CTN001a-g across 10 production fields. The majority of the sightings

were exposed on the field surface apart from sighting OF-CTN001a which was recorded in section in the drain face of a higher, former stockpile, field. The other two sites were short lengths of Road Class 3 toghers, one of which OF-CTN002a-b, was located close to the northern limit of the BnM production bog close to the enclosure site OF007-049 while the other, OF-CTN003a-b, was located in the southern extent of the narrowest part of the bog in an area where there were numerous sites recorded previously.

13.3.4.1.5 *Archaeological Monitoring of Site Investigations*

Archaeological monitoring of the excavation of geotechnical site investigation trial pits excavated for the proposed Lemanaghan Wind Farm within the Application Site was carried out by Tobar Archaeological Services and IAC Archaeology under licence from the National Monuments Service. The monitoring was undertaken in two phases and supervised by Tobar Archaeological Services in 2021 (Licence No. 21E0132) and 2022 (Licence No. 21E0132 Ext). Twenty-nine trial pits were excavated in 2021 and the monitoring report notes that 'No positively identified archaeological features or structures were uncovered in any of the excavated trial pits.' (Quinn 2022a). A further 18 trial pits were excavated in 2022 and no potential archaeological finds or features were uncovered during archaeological monitoring of same (Quinn 2022b). A further 16 trial pits were excavated in 2023, and monitoring was undertaken by IAC Archaeology (Licence No. 23E0885). 'Nothing of archaeological potential was identified during this phase of works' (Whitaker. 2023).

13.3.5 Potential Subsurface Archaeology

The rich archaeological heritage of the Application Site is evidenced by the numerous recorded monuments therein and the large number of archaeological objects recovered from the bogs within and surrounding the Application Site over its lifetime as an industrial peat extraction site (see Section 13.3.6 below). A cultural heritage assessment of the Boora Bog Group carried out in 2018 on behalf of Bord na Móna (Whitaker, 2018) includes Lemanaghan Bogs. In relation to the overall archaeological potential of those bogs the assessment states the following: '*The numerous archaeological sites and stray finds from the Lemanaghan Bogs, which date from the Neolithic to the late medieval period, show continuous archaeological activity in the area. Wetlands and Peatlands are considered as Areas of Archaeological Potential for their potential to contain archaeological organic preserved remains. Wetlands also provide a significant resource for environmental analysis. It must be considered therefore that there remains a moderate to high potential for additional buried features to be uncovered during the course of any future development works in the Lemanaghan Bogs, particularly but not exclusively, within the previously identified archaeological zones.*'

The presence of a large number of recorded monuments previously identified within the Application Site and the stray finds from the area including important items such as the Lemanaghan Crozier suggest that there is still a high potential for the presence of additional archaeological finds, features and structures within the peat.

Effects and mitigation measures are addressed in Section 13.4.

13.3.6 Topographical Files – National Museum of Ireland

The Topographical Files of the National Museum of Ireland were consulted by Tobar Archaeological Services in December 2020. The finds from the townlands within the Application Site are presented below according to townland.

LEMANAGHAN:

1977:2338 Copper Alloy Crozier

1992:6 Wood Crozier

1992E148:99 Stone Whetstone

2012:262 Felt Hat

KILLAGHINTOBER:

1992E148:70 Stone hammerstone

COOLDORRAGH:

1933:591 Bronze Dagger

1933:592 Bronze Axehead

1933:593 Bronze Axehead

1933:594 Bronze Spearhead

1933:595 Bronze Spearhead

1933:596 Bronze Spearhead

1933:760 Bronze Sword

1933:761 Bronze Sword

1933:762 Leather Shoe

1933:763 Wooden Bowl

DERRICA MORE:

1997:45 Stone Axehead

LEABEG:

1991:3 Stone tool

2004:107 Leather shoe

2012:263 Wooden tool

R1690 Wooden blade

TUMBEAGH:

1992E148:51 wool textile

1992E148:70 Stone hammerstone

LISDERMOT:

1992E148:14 Silver coin

1992E148:15 Silver coin

1992E148:16 Silver coin

1992E148:17 Silver coin

1992E148:18 Silver coin

1992E148:19 Silver coin

1992E148:20 Silver coin

1992E148:21 Silver coin

1992E148:22 Silver coin

1992E148:23 Silver coin

1992E148:24 Silver coin

1992E148:25 Silver coin

1992E148:26 Silver coin

1992E148:27 Silver coin

1992E148:28 Flint Scraper

1992E148:33 Silver coin

1992E148:34 Silver coin

1992E148:35 Silver coin

1992E148:36 Silver coin

1992E148:37 Silver coin

1992E148:38 Leather shoe

1992E148:6 Leather shoe

KILNAGOOLNY:

1997:46 stone ball

2008:12 Leather shoe

KILNAGARNAGH:

1931:312 Copper Dagger

2004:153 Leather Shoe

4432:W225 Bronze Dagger

13.3.6.1 Additional Stray Finds Information

Information regarding finds from Lemanaghan Bog are also contained in summary form in the Re-assessment Peatland Survey 2013 (Whitaker, 2014) and in the 2018 assessment of the Boora Bog Group (Whitaker, 2018) as follows:

'*There have been several stray finds from the general Lemanaghan area the earliest of which is a polished stone axe head from Corhill Bog to the west. A metal crozier (The Lemanaghan Crozier) was retrieved from Lemanaghan Bog in the 1980s and a wooden crozier was recovered during ADS excavations in Killaghintober bog in 1999. Several leather shoes were recovered during earlier surveys from each of the bogs and in 1998 a hoard of silver coins was recovered also from Corhill bog. In Castletown bog itself a fragment of wooden artefact was recovered during the 1992 Peatland Survey, a leather shoe and a dressed hazel rod (broken in five pieces) was recovered during the course of the 1999 excavations of OF007-215 (99E0326). There was a report to the author during the 2013 re-assessment survey of, an as yet unconfirmed, find of a wooden object with 'Greek' inscriptions by a BnM worker (Joe Egan pers comm.) during the 2012 production season from the vicinity of the same site.*' (Whitaker 2014).

'*There are 47 stray finds recorded from the Lemanaghan Bog complex. Information on these finds comes from two main sources: the Topographical Files of the National Museum of Ireland (NMI) and the IAWU survey records (prefixed by 92E148). The finds are summarised below by bog area.*

There are seven finds from Ballydaly/Curraghlassa Bog. These were all recorded during the 1996 IAWU survey of the bog. Leather fragments (92E148:98) were recorded in Ballydaly townland. A leather shoe (92E148:05) and two leather shoe fragments (92E148:95 & 92E148:32) were recovered from Ballydaly and Lemanaghan townlands respectively. An Ash wooden vessel base (92E148:12) and alder lid (92E148:11); a perforated alder wooden shaft (92E148:09) and alder stave fragments (92E148:13) were recording in Ballydaly townland. A leather shoe (99E0326:09) and a dressed hazel rod (99E0326:08) were recovered during the 1999 excavation of the early medieval Road-Class 1 Togher (OF007-215) in Castletown Bog. A wooden artefact fragment (92E148:67) was recovered during the IAWU survey in 1998.

Nine finds were recovered in Corhill Bog during the IAWU survey. These consisted of a flint side scraper (92E148:28), two leather shoe fragments (92E148:06 & 92E148:07), 14 silver coins (92E148:14-27), six further silver coins (92E148:33-38) from Lisdermot townland. Two ash perforated wooden shafts (92E148:31 & 92E148:10) were recovered from Lisdermot and Lemanaghan townlands respectively, along with an internally decorated ash bowl (92E148:08) and a dressed hazel brushwood rod (92E148:30).

A leather fragment (92E148:97); a small stone with worn surfaces (92E148:99); a wooden vessel roughout (92E148:66) and a perforated alder shaft (92E148:39) were recovered in Leabeg and Lemanaghan townlands in Derrynagun Bog.

Three finds were recovered from Killaghintober Bog. These consisted of a leather shoe (99E0448:30) that was found on the field surface during the excavation of a nearby trackway. A possible hammer stone (92E148:70) and a carved wooden crozier (99E0445:26) were found during the excavation of an early medieval Road-Class 1Togher.

There is a single stray find of a copper dagger (1931:212) from Kilnagarnagh Bog.

The largest number of finds have 'Lemanaghan Bog' as their find spot. In many cases their exact locations are not recorded. From Ballylin townland there is a hoard of ten amber beads (1982:75a-j); a brass mortar (1937:3389); three bronze axe heads (1937:3386-3388) and an iron sword (1920:64). Lemanaghan townland contains the find spot of a silver, bronze and wood crozier, part of which was recovered in 1992 (1992:006) and the remainder in 1997 (1997:2338). Other finds consist of a stone axe and a leather shoe found by BnM worker in 2000 (no reference numbers); a whetstone fragment

(92E148:40) and an alder wooden shaft (92E148:03). A stone axehead (1997:45) was found by a BnM worker in Derica More/Derica Beg townland and a stone ball (1997:46); wooden shaft (92E148:41) and a miscellaneous wooden object (92E148:42) were recovered during the IAWU survey in Kilnagoolny.

A squared ash shaft (92E148:50) was recovered during the IAWU survey of Tumbeagh Bog in Kilnagoolny townland.' (Whitaker 2018, 40-41).

13.3.7 Townlands and administrative boundaries

Townlands and administrative boundaries may indicate the presence of archaeological features within a development site. Administrative counties are subdivisions of pre-established counties which were formed for administrative purposes in the nineteenth and twentieth centuries. Baronies are administrative units larger than civil parishes and originally established as the primary subdivision of counties by the British administration in Ireland. Irish baronies which were formed at the time of the Norman conquest were usually named either after Irish territories, or from places which had been of importance in pre-Norman times. Irish baronies came into existence at different periods. The division of Ireland into counties and baronies was a process which continued down to the reign of James I. The original baronies in Ireland were the domains of the Norman barons; in the final stage of development, they were divisions of counties created merely for greater convenience of administration. The word barony is of feudal origin, and was applied to a tenure of a baron, that is, of one who held his land by military service, either directly from the king, or from a superior feudal lord who exercised royal privileges. The origin of the Irish barony (a division of land corresponding to the English hundred) is to be found in the grants of lands which were made to the barons of Leinster and the barons of Meath (Liam Price, 'Ráith Oinn', Éigse VII, lch. 186-7). Civil parishes are administrative units larger than townlands and based on medieval ecclesiastical parishes. Civil parishes, modern Catholic parishes and Church of Ireland parishes may differ in extent and in nomenclature. Counties are administrative units larger than baronies and originally established by the British administration in Ireland between the twelfth and the seventeenth centuries. Some of these were subsequently subdivided into smaller administrative county units.

Townlands are the smallest land units which were determined and established in the Irish administrative system in the first half of the nineteenth century. Many of the townlands were in existence prior to that. Townland names are a valuable source of information, not only on the topography, land ownership and land use within the landscape, but also on its history, archaeological monuments and folklore. Logainm.ie was utilised to ascertain the origin of the townland names.

The townlands within the Application Site and their meanings, where provided, are listed in Table 13.1. Many of the placenames refer to topographical features or land use/cover such as woods, hills or marshes. Several names, however, also refer to archaeological sites or features which may or may not still be apparent in the landscape. The townland of Lemanaghan, for example, refers to the grey place of Manchán, Manchán being the saint associated with the nearby monastic site. A monastery at Lemanaghan (Liath Manchán) was founded in the 7th century by Manchán whose feastday is celebrated on the 24th of January.

Table 13.1: Townlands within the Application Site

Townland Name	Irish	Meaning
CORBANE	An Chorr Bhán	white round hill
COR MORE and COR BEG	An Currach Mór agus An Currach Beag	big marsh and small marsh

RASHINAGH	Ros Eidhneach	wood, wooded height of ivy
STRADUFF	An tSraith Dhubh	black holm, river-meadow, valley-bottom
LISDERMOT	Lios Diarmada	Diarmaid's fort
DERRICA MORE	Doire Íce Mór	Great, big (oak-) wood, grove, thicket
ROSFARAGHAN	Ros Faracháin	wood, wooded height of —
LEMANAGHAN	Liath Mancháin	the grey place of Manchán Manchán — personal name (saint)
KILNAGOOLNY	Coill na Gualainne	the wood of the shoulder
TUMBEAGH	Tom Beitheach	bush of birches
KILNAGARNAGH	Coill na gCarnach	the wood of the — The meaning of carnach is unclear here. Recorded in 1837 as Wood of the carns
COOLDORRAGH	Cúil Dorcha	corner, nook
CAPPANALOSSET	Ceapaigh na Losad	Plot of the losset or kneading trough
KILLAGHINTOBER	Cill Achaidh an Tobair	Church of the field of the well

CASTLEARMSTRONG	Baile an Chaisleáin	Townland or homestead of the castle
CORNAFURRISH and CORRABEG	Corr na Foraoise agus An Currach Beag	Round hill of the forest
LEABEG	An Liath Beag	Small grey place

13.3.8 Cartographic Evidence

13.3.8.1 1st and 2nd Edition OS maps

The Ordnance Survey came to Ireland in 1824 in order to carry-out a precise admeasurement of the country's 60,000 or so townlands as a preliminary to the larger task of reforming Ireland's local taxation system. The townland boundaries were demarcated by a Boundary Commission, and the Ordnance Survey had the task of measuring them. In addition to boundaries the maps are truly topographical in content. Drawn at the large scale of six inches-to-one-mile (1:10,560) it was important to mark all buildings, roads, streams, placenames, etc, that were required for valuation purposes. Ultimately the maps were used as a basis for the rateable valuation of land and buildings in what became known as Griffith's Valuation. Working from north to south, the survey began in Antrim and Derry in 1829 and was completed in Kerry in 1842. It was published as thirty-two county maps between 1832 and 1846, the number of sheets per county varied from 153 for County Cork to 28 for Dublin, each of the 1,994 sheets in the series depicting an area of 21,000 by 32,000 feet on the ground. Each county was projected on a different central meridian and so the maps of adjacent counties do not fit neatly together at the edges. Map content stops at the county lines.

The First Edition

The early Ordnance Survey maps are an unrivalled source for the period immediately before the Great Irish Famine (1847-50) when the population was at the highest level ever recorded. The maps depict an open landscape in the majority of the Application Site (Figure 13.11). The road OF007-350— is shown on the first edition OS map within the Application Site in Tumbeagh townland and extends from outside the Application Site boundary at the west to a small settlement, known locally as the 'House at Derrevane' which is also depicted on the first edition OS map. Both the road and the settlement are also shown on the second edition 25-inch map (see below) and field survey confirmed that the ruinous remains of a stone structure and associated walls are extant in the area of the settlement. According to local information this structure is known as the house at Derrevane and was used during the War of Independence 1919-1921 as an unofficial field hospital by the IRA Volunteers (https://www.ouririshheritage.org/ website accessed on 12th August 2025). Field survey also confirmed that the recorded monument OF007-350— Road – gravel/stone trackway is also still partially extant.

The Second Edition

The aforementioned road OF007-350— is clearly depicted on the second edition 25-inch OS map on which it appears to extend from the 17th century house OF007-065— which is located outside the Application Site. Again the road is shown extending as far as the small settlement in Tumbeagh townland which is also shown on this edition of the historic mapping (Figure 13.12). The majority of the remainder of the Application Site is depicted as open featureless ground.

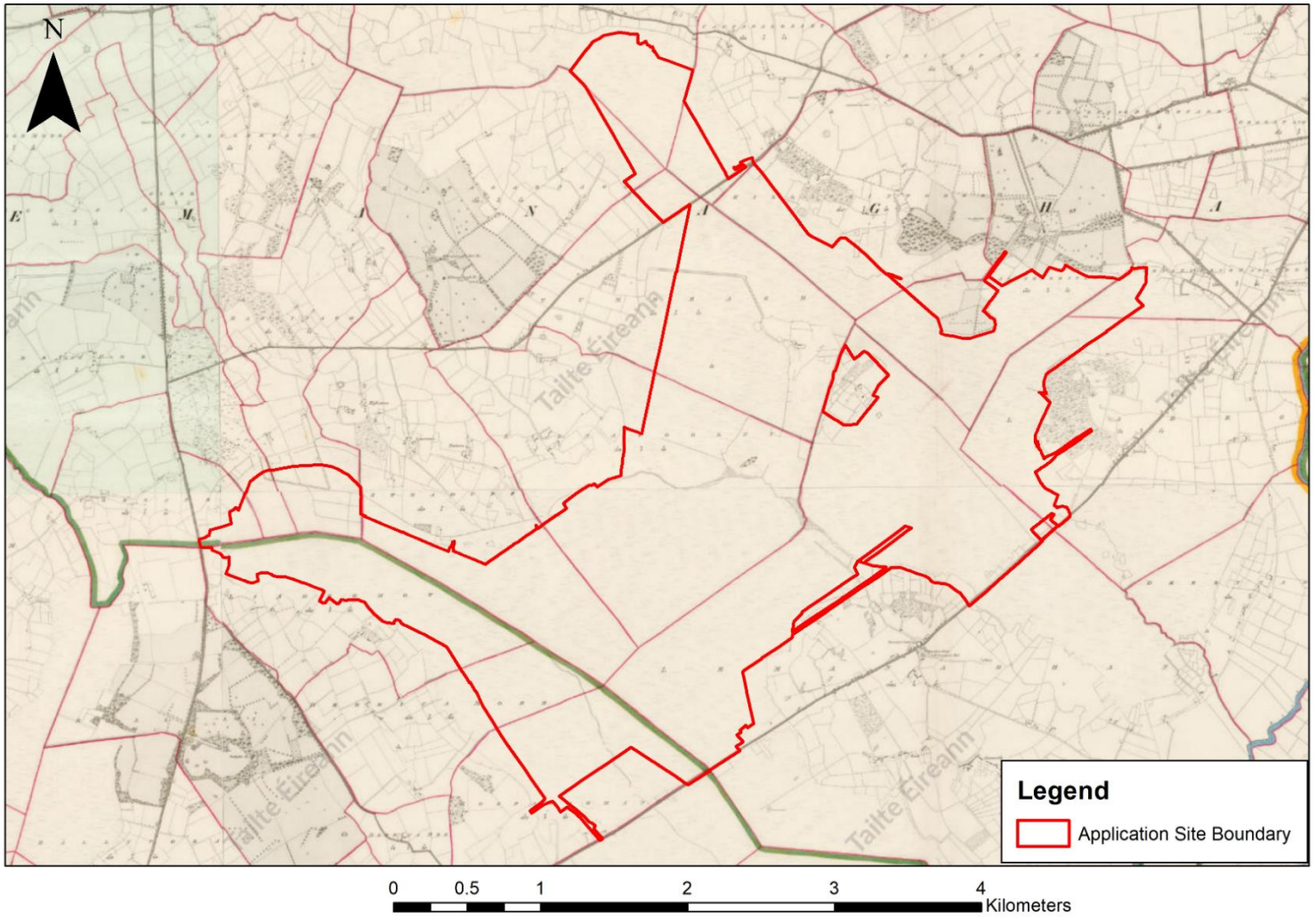

Figure 13.11: Application Site boundary on first edition (1829-41) 6-inch OS background.

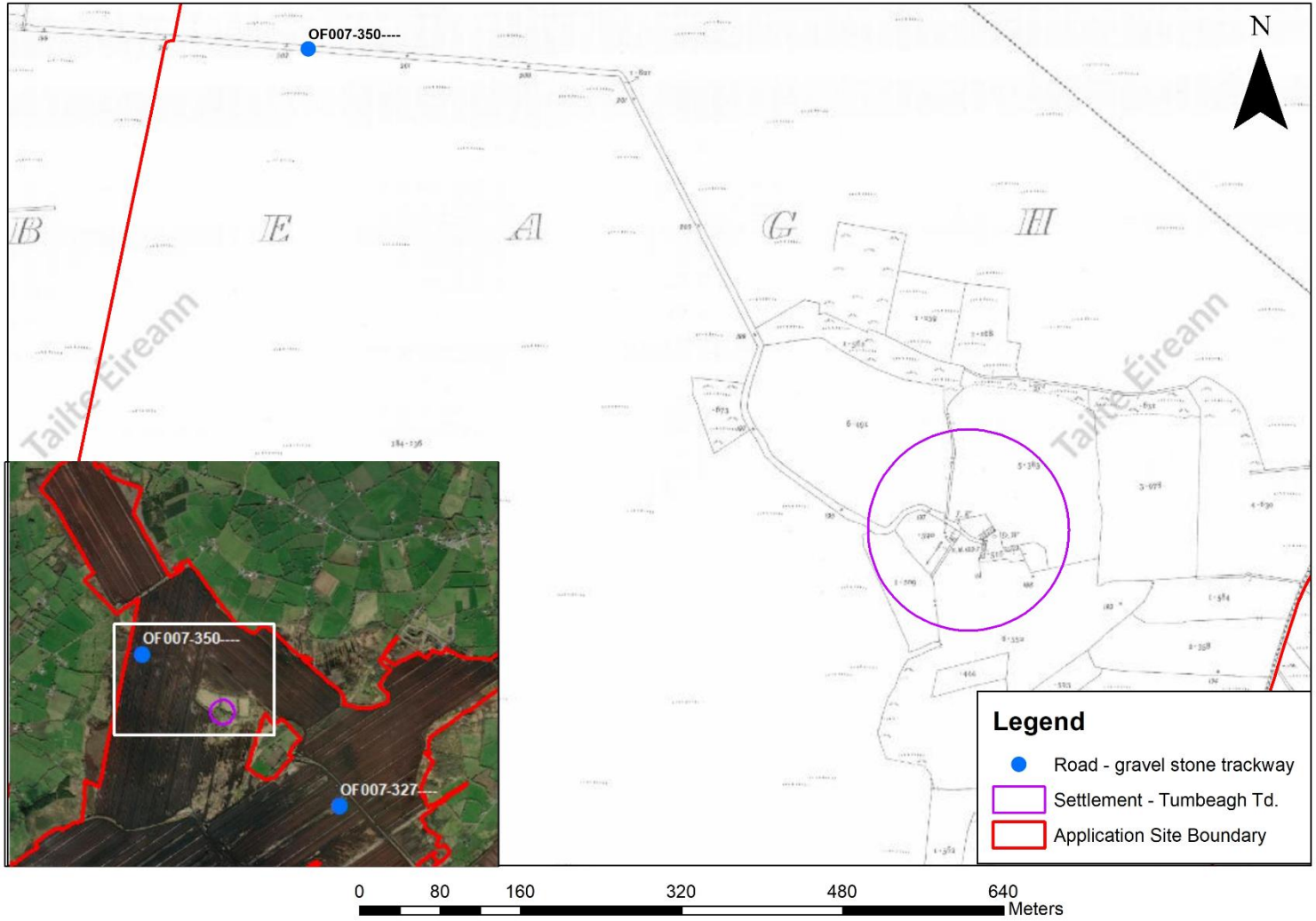

Figure 13.12: Road – gravel/stone trackway OF007-350— and settlement (including the 'House at Derrevane') at Tumbeagh townland on second edition (1897-1913) 25-inch OS background.

Plate 13.1: Remains of ruinous house (aka 'The House at Derrevane') within small settlement at Tumbeagh td.

Plate 13.2: Interior of ruinous house (aka 'The House at Derrevane') at Tumbeagh.

13.3.9 Architectural Heritage

13.3.9.1 Protected Structures & the National Inventory of Architectural Heritage

No Protected Structures, structures or items listed in the NIAH or historic gardens are located within the Application Site.

13.4 Likely Significant Effects and Associated Mitigation Measures

13.4.1 Do Nothing Option

As outlined in the EPA Guidelines (May 2022), the description of 'Do-Nothing Effects' relates to the environment as it would be in the future should the Project not be carried out. Peat extraction and ancillary activities was underway at the Application Site prior to the required date for the transposition of the EIA Directive in 1988. If peat extraction and ancillary activities had ceased from 1988 onwards, then consequently there would have been no further peat extraction and ancillary activities from the Application Site and therefore no impact on cultural heritage.

For those lands which as of 1988 had been subject to the installation of drainage in preparation for peat extraction and ancillary activities but not peat extraction itself, it is assumed in the 'do-nothing' scenario that drainage would have remained insitu. Maintenance works to keep established drainage channels clear would have ceased as of 1988 in the 'do-nothing' scenario. It is likely that these areas would have been subject to natural recolonisation of the bog surface.

However, consideration must be given to the following:

- The legislative mandate given to Bord na Móna in the form of the Turf Development Act 1946, as amended) to acquire and develop peatlands; and
- The uncertainty with respect to the planning status of the activity did not arise until 2019 and was not evident in 1988.

Therefore, this 'Do-Nothing' option was not the chosen option. Peat extraction and ancillary activities have occurred at the Application Site from July 1988 onwards. A decision to cease peat extraction and ancillary activities at the Application Site was taken in 2020 and the Application Site needs to be considered in the context of regularising (without prejudice) the planning status of the lands to facilitate future development (subject to planning consent as required). The Application Site has and will continue to revegetate, and there will be a change from areas of cutover peatland to revegetated peatland. These are described in the individual chapters of the rEIAR.

As part of Bord na Móna's statutory obligations under IPC licence requirements, a Draft Bord na Mona Cutaway Bog Decommissioning and Rehabilitation Plan will continue to be implemented for the Application Site separate to, and independent of, the Substitute Consent application. The implementation of this plan is included in the impact assessment below.

13.4.2 Peat Extraction Phase: 1988-June 2020

13.4.2.1 Effect of Peat Extraction Phase – Indirect Effects on visual setting

Indirect effects, in terms of archaeology, architectural and cultural heritage are considered to be those effects which happen away from 'the site'. This includes effects on visual setting of any cultural heritage asset in the wider landscape. No indirect visual effects were identified which would have occurred during past peat extraction and ancillary activities. Sub-surface works such as drainage of peat and excavation of peat is not considered to cause a negative effect on the setting of monuments which are located away from the Application Site.

13.4.2.2 Effect of Peat Extraction Phase– Direct Effects

Direct effect refers to a 'physical impact' on a monument or site. In the past and up to the present day Bord na Móna has a statutory duty under the Turf Development Act 1998 (Section 56) to afford appropriate protection for the environment and archaeological heritage in order to prevent direct effects on same.

From the 1980s onwards, Ireland witnessed changing trends in the numbers of artefacts accessioned from peatlands reflecting adaptations in work practices in the industrial exploitation of Ireland's peatlands and legislative changes which offer greater protection to monuments and artefacts alike. In the period prior to 1988 (1945-1985) awareness of the archaeological potential of peatlands increased through museum fieldwork pioneered by Ellen Prendergast, Etienne Rynne, A. T. Lucas and Michael Ryan's Lough Boora excavation co-funded by Bord na Móna.

The 1980s saw a dramatic expansion in peat processing which led to National Monuments Service's licensing of excavations within bogs initially conducted by UCD's Irish Archaeological Wetland Unit (IAWU) and subsequently by archaeological contractors funded by Bord na Móna.

Since 1991 an annual programme of archaeological survey, initially funded by the National Monuments Service, has been conducted in Bord na Móna Bogs, with the results being forwarded for inclusion in the Sites and Monuments Record.

Since 1998, Bord na Móna has a statutory duty under the Turf Development Act 1998 ('1998 Act') (Section 56) to afford appropriate protection for the environment and the archaeological heritage (Section 56.- *The Company and each subsidiary shall ensure that its activities are so conducted as to afford appropriate protection for the environment and the archaeological heritage).*

The 1998 Act was in accord with the development of a *Agreed Principles for the Protection of Wetlands Archaeology in Bord na Móna Bogs* (1998) between the Minister for Arts, Heritage and the Gaeltacht, the National Museum of Ireland and Bord na Móna. The Agreed Principles set out 10 standards within which archaeology in the Bord na Móna peatlands were managed. Five Archaeological Liaison Officers were spread across the Bord na Móna Bog Groups and received training on how to deal with and report finds. Since 1998, all archaeological surveys were funded by Bord na Móna. The surveys have been accompanied by an annual programme of selective archaeological excavation and paleo-environmental analysis. By 2013, 64,000 of the c. 80,000-hectare land holdings of Bord na Móna had been subject to archaeological survey.

Bord na Móna's peat extraction and ancillary activities, and impact on archaeology is also governed under the 2012 Code of Practice agreed between the then Department of Arts, Heritage and the Gaeltacht, the National Museum of Ireland and Bord na Móna (Appendix 13-5). The code includes a commitment by Bord na Móna to finance a balanced and cost-effective approach to archaeological investigation, excavation, post excavation and mitigation, and details the procedure to be followed if a

suspected object is discovered. The Code of Practice has been implemented on all bogs operated by Bord na Móna and its contents are integrated into staff induction training. Prior to 2012 Agreed Principles for the Protection of Wetland Archaeology in Bord na Móna bogs were in place before they were updated and codified into the current Code of Practice.

All peatland surveys, assessment surveys and re-assessment surveys as well as any archaeological excavations within the Application Site were undertaken on all bogs operated by Bord na Móna as a result of the aforementioned Codes of Practice.

13.4.2.3 Effect of Peat Extraction Phase on RMP/SMRs

A total of 488 recorded monuments are located within the Application Site boundary. The majority of these monuments were identified as a result of a peatland surveys carried out within the Application Site by the Irish Archaeological Wetland Unit (IAWU) in 1993-4 as part of the Archaeological Survey of Ireland Peatland Survey. During that survey a total of 470 sightings of archaeological material were made that were subsequently included in the Sites and Monuments Record (SMR). 369 of the 488 monuments within the Application Site comprise peatland structures which were identified as a result of the aforementioned peatland surveys conducted within the Application Site. Structures – peatland are defined in the National Monuments Service Monument Class and Scope Notes (2023) as '*wood found in peat, which has been deliberately deposited or processed. These vary from single pieces to deposits without a clear form or orientation but which are indicative of an archaeological structure. These may be of any date from the Neolithic (c. 4000-2400 BC) to the medieval period (5th-16th centuries AD).*' The descriptions of the peatland structures on the Historic Environment Viewer (HEV) notes the following in relation to each site: *'The evidence is not sufficient to warrant its acceptance as the remains of an archaeological monument.'*

Given the typically small and fragmentary nature of such peatland structures it is likely that the majority of these structures were removed by the on-going activities associated with peat extraction and ancillary activities at the Application Site up to the cessation of peat extraction and ancillary activities in June 2020. In this regard a direct, significant, negative and permanent effect to such structures as a result of the Peat Extraction Phase is identified, which is Significant.

The majority of the remaining recorded monuments within the Application Site comprise Class 1, Class 2 and Class 3 toghers and gravel/stone trackways which account for 113 of the 488 monuments therein. Some of the toghers were subject to limited archaeological excavation which was largely undertaken between 1999 and 2000 as part of the Peatlands Excavation Programme 1999-2000. The description of some of the toghers as provided on the HEV suggests that at least some of these monuments had been partially disturbed by peat extraction and ancillary activities. Given that the majority of these sites were initially identified in 1993-4 as part of the Archaeological Survey of Ireland Peatland Survey and the continued peat extraction and ancillary activities within the Application Site up to 2020, it is likely that the Peat Extraction Phase had a direct, significant negative and permanent effect on at least some of these monuments. In this regard a direct, significant, negative and permanent effect to such structures as a result of the Peat Extraction Phase is identified, which is Significant.

Cartographic research and field surveys carried out within the Application Site as part of this assessment determined that gravel/stone trackway OF007-350— is at least partially extant and can be traced in places, particularly along its E/W orientated portion. Where it is not readily visible on the surface it is possible that activities associated with the Peat Extraction Phase had a direct, significant, negative and permanent effect on portions of this monument. In this regard a direct, significant, negative and permanent effect to the trackway as a result of the Peat Extraction Phase is identified which is Significant.

Two enclosures OF007-048— and OF007-049— are located within the Application Site. According to the monument descriptions neither site is visible at ground level. While it is unclear if they represent the remains of an archaeological monument they are included in the SMR as such. In this regard, if

archaeological deposits are present at the location of the enclosures the Peat Extraction Phase would have had a direct, significant, negative and permanent effect on these sites, which is Significant.

Control Measures

1. *As part of peat processing training, all bog employees must read and adhere to the recommendations 'Ancient Objects in Irish Bogs and Farmlands: A Guide for Finders' Department of Education 1942.* ***(Appendix 13-6)***
2. *All bog workers must stop all works and report to the Bog Manager if archaeological finds are encountered.*
3. *If materials thought to be of archaeological interest are encountered, the Bog Manager must report the findings to the Garda Síochána within 7 days who will then contact the Commissioner of Public Works.*

1993 onwards

The Archaeological Survey of Ireland Peatland Survey undertaken by the Irish Archaeological Wetland Unit (IAWU) in 1993-4 led to the discovery of any potential features, structures or sites within the Application Site as evidenced by the large number of recorded monuments located within the Application Site boundary. This control measure allowed for the identification, recording and investigation of features within the Application Site and ultimately led to their inclusion in the SMR. Limited excavation of some sites was carried out as part of this work.

2012 onwards

The 2012 Code of Practice (Appendix 13-5) also saw the introduction of agreed principles between the National Monuments Service, the National Museum and Bord na Mona. The control measures from 2012 onwards were as follows:

1. *The Minister for Arts, Heritage and the Gaeltacht has a responsibility to protect the archaeological heritage and to exercise powers of preservation, under the National Monuments Acts 1930-2004, taking account of the European Convention on the Protection of the Archaeological Heritage (Valletta).*
2. *The Minister's statutory responsibilities include the maintenance of the Record of Monuments and Places, with the aim of providing protection to all known archaeological monuments including those uncovered in Bord na Móna bogs.*
3. *The Director of the National Museum of Ireland has a responsibility to enforce state ownership of all archaeological objects and to safeguard the treatment of all archaeological objects before their accession into the State's repository, under National Monuments Acts 1930-2004 and the National Cultural Institutions Act 1997, taking account of the European Convention on the Protection of the Archaeological Heritage (Valletta)*
4. *Bord na Móna plc is a company with a statutory mandate, under the Turf Development Acts 1946-1998, to develop the national peat resource.*
5. *The development of peatlands has considerable archaeological implications which must be addressed given that the archaeological heritage is a non-renewable resource.*
6. *Bord na Móna has a statutory duty under the Turf Development Act 1998 (section 56) to afford appropriate protection for the environment and the archaeological heritage.*
7. *Bord na Móna will finance a balanced and cost effective approach to archaeological investigation, excavation, postexcavation and mitigation on the basis of the developer pays principle and in keeping with the Minister's stated policy in this regard.*
8. *Bord na Móna will engage a Project Archaeologist to develop archaeological strategy and to oversee the smooth running of the archaeological response to peat extraction in Bord na Móna bogs.*
9. *The adoption of a partnership approach between the Minister, the Director and Bord na Móna in pursuit of the delivery of Government policy taking account of the*

implications for archaeology. To this end the Archaeology Management Liaison Committee has been set up consisting of representatives of the Department of Arts, Heritage and the Gaeltacht, the National Museum of Ireland and Bord na Móna, including the Project Archaeologist and Consultant Archaeologists working on Bord na Móna peatlands. The Committee will meet regularly to agree overall strategies in relation to the mitigation of peat extraction.

10. *Appropriate strategies will be developed by the Archaeology Management Liaison Committee to minimise direct impacts on archaeology taking account of Bord na Móna's contractual obligations, annual production plans, design and safety implications, environmental and other impacts and costs.*
11. *All parties agree that mitigatory planning at the earliest opportunity minimises the impact on the archaeological heritage.*
12. *Bord na Móna will strive, as far as is reasonably possible, within its statutory remit, to avoid negative impacts on archaeological monuments. In cases where it is not possible to avoid impacting on monuments Bord na Móna, the Minister and the Director will cooperate to ensure, as far as possible, that appropriate archaeological mitigation is carried out in advance of peat extraction.*
13. *Prospecting for archaeological monuments, archaeological objects and other such remains, other than in circumstances approved by the Minister, in consultation with the Director, is limited to the confines of the area under peat extraction.*
14. *All parties are committed to dealing with the archaeological implications of peat extraction in a balanced and cost effective manner consistent with*

    a) *Observing Bord na Móna's requirement to extract peat on an extensive scale*
    b) *Annual production targets in relevant bogs*
    c) *A level of excavation, post-excavation and recording of archaeological monuments and archaeological objects, impacted upon by peat extraction, that is acceptable to the Minister, having consulted with the Director, and preservation in-situ of monuments in those particular circumstances where required by the Minister and which would be reasonable in practice.*

15. *Each party reserves the right to review decisions.*
16. *All parties agree that the Archaeology Management Liaison Committee will monitor the operation of this Code of Practice and carry out a formal review within three years of its adoption and at agreed intervals thereafter*

13.4.2.4 Effect of Peat Extraction Phase on Archaeological Objects

A large number of stray finds are recorded from within the Application Site (see Section 13.3.6 above). The finds were largely recorded during the 1993-4 peatland surveys or during subsequent excavations carried out within the Application Site. In this regard the finds were retrieved from the Application Site in accordance with the relevant approved methodology for the survey or excavation activity being carried out and are ultimately deposited with the National Museum of Ireland in line with best practice. This may be regarded as a positive effect as it has contributed to the corpus of archaeological finds from peatland environments and to knowledge regarding objects from the Application Site. It is possible, however, that archaeological objects present within the Application Site may or have been damaged/destroyed by the Peat Extraction Phase in particular from 1988 until 1993 prior to the implementation of the 1993 Peatland Surveys. In this regard the Peat Extraction Phase from 1988 to 1993 may have had a direct, significant, negative and permanent effect on such archaeological objects, if present. The Significant effect to archaeological objects is mitigated by the recovery and recording of objects during the 1993-4 peatland survey, therefore the overall significance of effects are regarded as direct, Moderate to Significant, negative and permanent, which is Significant.

Control Measures

Control measures are the same as those identified above in Section 13.4.2.3.

13.4.2.5 Effect of Peat Extraction Phase on unrecorded potential sub-surface sites

Bog landscape features were often utilised throughout all periods of history and the anaerobic conditions preserve organic matter, such as wood and leather, which does not often survive in more usual terrestrial archaeological conditions. Objects can be preserved in peatlands because of the acidity of peat and the anaerobic environment which exists within peatland deposits. This is particularly the case between 1988 and 1993 prior to the peatland surveys taking place. The 1993-1994 Peatland survey, within the Application Site, would have allowed the identification of any finds, features or deposits on either the peat fields, or along drain sections which would have led to mitigatory investigations and excavations in selected areas within the Application Site. The Archaeological Survey of Ireland Peatland Survey undertaken by the Irish Archaeological Wetland Unit (IAWU) in 1993-4 led to the discovery of potential finds, features, structures or sites within the Application Site as evidenced by the large number of recorded monuments and the large number of recorded stray finds located within the Application Site boundary. This may be regarded as a positive contribution to the corpus of archaeological sites from peatland environments and to knowledge regarding sites located within the Application Site.

It is also possible, however, that significant negative effects could have taken place to sub-surface finds and features, in particular, prior to 1993 where remains existed within the Application Site. This negative effect would have been mitigated by Peatland Surveys from 1993 onwards as well as the introduction of the 2012 Code of Practice. It is likely that potential effects on sub-surface finds and features from 1993 to 2020 were direct, Moderate to Significant, negative and permanent, which is Significant.

The Significant effect to unrecorded potential sub-surface site is mitigated by the recovery and recording of objects during the 1993-4 peatland survey, therefore the overall significance of effects are regarded as direct, Moderate to Significant, negative and permanent, which is Significant.

Control Measures

Control measures are the same as those identified above in Section 13.4.2.3.

13.4.2.6 Effect of Peat Extraction Phase on the Record of Protected Structures and NIAH

No Protected Structures, NIAH structures or historic gardens are located within the Application Site boundary. Effects to such structures or items as a result of the Peat Extraction Phase are therefore not identified.

13.4.2.7 Impact of Peat Extraction Phase on Local Cultural Heritage (Tumbeagh)

The small settlement indicated on the historic OS maps in Tumbeagh townland, known locally as the ‘House at Derrevane’, is located in an elevated area which was excluded from peat extraction and ancillary activities. A review of the available aerial photography from 1988 to 2020 shows that this area has been largely greenfield for that majority of that time with trees and shrubs growing within and around the historic settlement. The surviving visible structure comprises a ruinous stone house which is in a state of disrepair. No effects have occurred to the structure as a result of peat extraction and

ancillary activities, and it is considered that the structure and associated stone walls have become ruinous over time.

Control Measures

Past peat extraction and ancillary activities have not affected the structure at Tumbeagh and the house has survived, albeit ruinous, to the present day. No control measures are proposed in this regard.

13.4.3 Current Phase: June 2020 to present day

Current activities at the Application Site include the transportation of previously extracted peat off the bogs and decommissioning, rehabilitation and environmental monitoring as part of the EPA licence (Ref. P0500-01). This is detailed in Chapter 4, Section 4.9. Bord na Móna ceased peat extraction and ancillary activities across all bogs including at the Application Site in June 2020. It is a requirement of 'Condition 10 Cutaway Bog Rehabilitation' of the IPC Licence that:

'***10.1*** *following termination of use or involvement of all or part of the site in the licenced activity, the licensee shall:*

> ***10.1.1*** *Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.*

In terms of archaeology, architecture and cultural heritage, since peat extraction and groundworks are complete, it is considered that no direct effects would occur during the Current Phase.

Potential indirect effects (visual effects) of the Current Phase are scoped out as the Current Phase activities are not considered to have a wider landscape effect on the Cultural Heritage environment. Archaeological monuments and features of architectural heritage merit which are located away from the Application Site are not capable of having their settings affected by localised / transient works within the Application Site.

Potential Pre-Control Effects

No effects from 2020 to the present day are considered to have occurred since peat extraction and ancillary activities have ceased. In this regard a Neutral effect is identified.

Control measures

No control measures are deemed necessary since peat extraction and ancillary activities have ceased.

13.4.3.2 Cumulative & In Combination Effects

Bord na Móna ceased peat extraction and ancillary activities across all bogs including at the Application Site in June 2020. It is a requirement of '*Condition 10 Cutaway Bog Rehabilitation'* of the IPC Licence that:

'***10.1*** *following termination of use or involvement of all or part of the site in the licenced activity, the licensee shall:*

> ***10.1.1*** *Decommission, render safe or remove for disposal/recovery, any soil, subsoils, buildings, plant or equipment, or any waste, materials or substances or other matter contained therein or thereon, that may result in environmental pollution.*

In terms of archaeology, architecture and cultural heritage, since peat extraction and ancillary activities has ceased, it is considered that no direct effects would occur during the Current Phase. In this regard therefore, current activities will not result in any cumulative effects, either direct or indirect and a Neutral effect is identified.

13.4.4 Remedial Phase

13.4.4.1 Effect of Remedial Phase

The Draft Bord na Mona Cutaway Bog Decommissioning and Rehabilitation Plan for the Application Site is described in detail in Chapter 4 Section 4.10.1 and is included in Appendix 4-2 of this rEIAR. The rehabilitation programme falls under the IPC licence in the same way as past peat extraction and ancillary activities, and in this regard any effects as a result of drain blocking or tracking over peat as part of the restoration programme fall under the current Code of Practice (2012) between Bord na Móna and the now Department of Housing, Local Government and Heritage. Bord na Móna have produced a draft Cutaway Bog Decommissioning and Rehabilitation and Plan for the Application Site, and it is the intention of the Applicant to rehabilitate the bogs in a phased approach under IPC licence. The IPC licence is presented in Appendix 4-1 with detail on the rehabilitation programme provided in Appendix 4-2.

Mitigation measures to be implemented as part of the Cutaway Bog Decommissioning and Rehabilitation programme are under the remit of the aforementioned bodies. The Code of Practice is presented in Appendix 13-5 of the rEIAR and will mitigate against the potential for significant effects to the Cultural Heritage resource of the Application Site during the Remedial Phase.

Potential Pre Mitigation Effects

Remedial activities such as drain blocking or tracking over peat fields may have a negative effect on any sub-surface archaeological finds or features that may be present on or beneath the surface of the peat. In the absence of mitigation measures this may result in a permanent, negative and significant effect, which is Significant.

Mitigation Measures

Since rehabilitation activities associated with Bord na Móna fall under the 2012 Archaeological Code of Practice, any potential effects may be dealt with in the same way as past peat extraction and ancillary activities, through the implementation of mitigation measures detailed in the 2012 Code of Practice.

13.4.4.2 Cumulative & In Combination Effects

In terms of direct cumulative effects, remedial works within the Application Site which require any ground works, or drain blocking activities could potentially result in cumulative effects when considering other projects, including the proposed Lemanaghan Wind Farm construction phase. Any increase to groundworks/excavation works within the peat could result in direct cumulative effects to any potential sub-surface archaeological finds or features.

There are a number of mitigating factors, however, which include the implementation of the current 2012 Code of Practice and the Draft Bord na Mona Cutaway Bog Decommissioning and Rehabilitation Plan (the latter of which falls under the IPC licence, i.e., Condition 10). A Draft Bord na Mona Cutaway Bog Decommissioning and Rehabilitation Plan has been produced for the Application Site (Appendix 4-2), and it is the intention of the Applicant to rehabilitate the bogs in a phased approach under the IPC licence. The IPC licence is presented in Appendix 4-1.

The Code of Practice is presented in Appendix 13-5 of the rEIAR and will mitigate against the potential for significant effects during the Remedial Phase and thus reducing potential cumulative and in-combination effects.

13.5 Residual Effect

13.5.1 Peat Extraction Phase: 1988-June 2020

The residual effect of the Peat Extraction Phase on archaeological finds and features within the Application Site, including recorded monuments, is regarded as a direct moderate negative permanent effect, which is Not Significant.

Overall, it is possible that significant negative effects could have taken place to sub-surface archaeological finds and features, in particular, prior to 1993 when the Peatland Surveys commenced. This negative effect was mitigated, however, by the Peatland Surveys 1993-4 and any associated excavations which were carried out as part of the mitigation phase of that work. Subsequently, the introduction of the 2012 Code of Practice served as a mitigatory factor in the discovery of archaeological finds and features as well as their recording and excavation where required. In this regard it is considered that that residual effects on sub-surface finds and features from 1993 to 2020 were a direct slight - moderate negative permanent effect, which is Not Significant, while residual effects between 1988 and 1993 may have been direct moderate – significant, negative, permanent effects, which is Significant.

13.5.2 Current Phase June 2020 to present day

In terms of archaeology, architecture and cultural heritage, since peat extraction and ancillary activities has ceased, it is considered that no direct effects would occur during the Current Phase. No direct effects as a result of removal of stockpiled peat, EPA monitoring activities, etc are identified. Since no effects were identified without the need for mitigation measures, no residual effects will occur. In this regard a Neutral effect is identified.

13.5.3 Remedial Phase

Remedial activities such as drain blocking or tracking over peat fields may have a negative effect on any sub-surface archaeological finds or features that may be present on or beneath the surface of the peat. This may result in a permanent, negative and significant effect, which is Significant. Since peat extraction and ancillary activities associated with Bord na Mona fall under the 2012 Archaeological Code of Practice, any potential effects may be dealt with in the same way as past peat extraction and ancillary activities. In this regard the potential residual effect on sub-surface archaeology, if present, may be permanent negative and Slight-Moderate, which is Not Significant.

13.6 Significance of Effects

13.6.1 Peat Extraction Phase: 1988-2020

The overall effect of the Peat Extraction Phase on archaeological finds and features within the Application Site, including recorded monuments, is regarded as a direct moderate negative permanent effect.

Past extraction and ancillary activities, in particular from 1988 to 1993 including drains, milling, and extraction could have resulted in a significant, permanent, negative effect to sub-surface archaeological finds and features present within the peat. This potential effect is considered to be direct Moderate-

Significant negative permanent effect from 1988 to 1993 and direct Slight-Moderate negative permanent effect from 1993 to 2020 due to commissioned Peatland Surveys and mitigation excavations which allowed for the identification and recording of archaeological features, and the recovery of archaeological artefacts, if present.

13.6.2 Current Phase: June 2020 to present day

As no effects were identified as a result of the Current Phase, the significance of effects is considered to be Neutral..

13.6.3 Remedial Phase

The overall significance of effects on subsurface archaeological finds and features, if present, as a result of the Remedial Phase is considered to be Slight-Moderate.

13.7 Cumulative and In Combination Effects

Cumulative effect is defined as 'the addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects' (EPA 2022). Cumulative effects encompass the combined effects of multiple developments or activities on a range of receptors. In this case, the receptors are the archaeological monuments and architectural/cultural heritage sites in the Application Site. Direct effects to sub-surface archaeological features/sites can occur as a result of peat removal and groundworks during the Peat Extraction Phase (1988-2020), as part of the Current Phase (June 2020 – present day) and Remedial Phase, as well as the potential future development of the proposed Lemanaghan Wind Farm. When all of these activities are combined, they have the potential to have cumulative effects.

The cultural heritage impact assessment undertaken above in this chapter outlines those significant effects that have occurred within the Application Site as a result of the peat extraction and ancillary activities.

Due to peat extraction and ancillary activities within the Application Site boundary in particular, prior to 1993 when archaeological investigations and surveys had not been undertaken, there is potential for significant cumulative effects with other local developments (located outside the Application Site, including forestry, agricultural development, etc) on the archaeological environment to have occurred. Peat extraction and ancillary activities could have had cumulative (direct) effects with other off-site projects. Similarly, when considering the Peat Extraction Phase 1988-June 2020 with peat extraction and ancillary activities on the Application Site from 1950-1988, cumulative effects are also possible. Given the nature of the peat extraction and ancillary activities during both the 1988-2020 period and the 1950-1988 period, those effects are largely concerned with sub-surface archaeological finds, features and deposits. As outlined in Chapter 4, the primary and greatest land-use change associated with peat extraction and ancillary activities on the Application Site occurred during the initial drainage and vegetation removal of the bogs in advance of peat extraction and ancillary activities. This effect would have predominantly occurred at the Application Site in advance of 1988. It is likely that the pre 1988 drainage, shrinkage, compression and the extraction of peat could have had permanent and profound negative cultural heritage effects should sub-surface finds and features exist in areas which were subject to peat extraction and ancillary activities. This is particularly the case between 1988 and 1993 when fewer archaeological investigations and surveys had taken place. When considered cumulatively with activities which took place between 1950 and 1988, there is potential for increased cumulative direct negative effects to sub-surface archaeology if present within the Application Site.

It is intended to utilise the Application Site for both peatland remediation (rehabilitation), wind energy infrastructure and to facilitate environmental stabilisation of the Application Site and the optimisation of climate action benefits.

As such, a Draft Bord na Mona Cutaway Bog Decommissioning and Rehabilitation Plan is assessed as part of the planning application for the Project.

Lemanaghan Wind Farm DAC, a joint venture between SSE Renewables and Bord na Móna. (i.e. the Applicant) are proposing a wind energy development consisting of 15 turbines with an overall blade to tip height of 220m at the Application Site. A separate EIAR and accompanying NIS are being undertaken for the proposed Lemanaghan Wind Farm. At the time of writing, the planning application for this development has not yet been submitted to An Coimisiún Pleanála.

The implementation of the Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan in conjunction with the construction, operation and decommissioning of the proposed Lemanaghan Wind Farm as well as proposed, permitted and operational plans and projects listed in Chapter 2 of its EIAR is considered. The approximate permanent footprint of the proposed Lemanaghan Wind Farm will be approximately 3% of the total Application Site area (i.e., 1,111ha). Therefore, it will not impact or change the overall goals and outcomes of the Draft Bord na Móna Cutaway Bog and Decommissioning and Rehabilitation Plan. It is the intention of the Applicant to integrate the peatland remedial measures with the proposed Lemanaghan Wind Farm. The key objectives of environmental stabilisation and re-wetting of the cutaway areas will occur between and surrounding the proposed Lemanaghan Wind Farm infrastructure. Overall, there are no significant negative cumulative effects when considering past peat extraction and ancillary activities during the Peat Extraction Phase and the proposed Lemanaghan Wind Farm in combination with the Draft Bord na Móna Cutaway Bog and Decommissioning and Rehabilitation Plans for the Remedial Phase.

13.8 Conclusion

This archaeological, architectural, and cultural heritage chapter was prepared by Tobar Archaeological Services Ltd. It presents the results of an archaeological, architectural and cultural heritage impact assessment for a remedial EIAR at the Application Site.

Peat Extraction Phase:

Recorded Monuments, Archaeological Objects and Sub-surface Archaeology

A total of 488 recorded monuments are located within the Application Site boundary. The majority of these monuments were identified as a result of peatland surveys carried out within the Application Site by the Irish Archaeological Wetland Unit (IAWU) in 1993-4 as part of the Archaeological Survey of Ireland Peatland Survey. A direct, negative and permanent effect to many of the monuments as a result of the Peat Extraction Phase is identified. A large number of stray finds are recorded from within the Application Site (see Section 13.3.6 above). The finds were largely recorded during the 1993-4 peatland surveys or during subsequent excavations carried out within the Application Site. In this regard the finds were retrieved from the Application Site in accordance with the relevant approved methodology for the survey or excavation activity being carried out and are ultimately deposited with the National Museum of Ireland in line with best practice. Peatlands were utilised throughout all periods of history and the anaerobic conditions therein preserve organic matter, such as wood and leather, which does not often survive in more typical terrestrial conditions. Objects, features and structures may be preserved in peatlands because of the acidity of peat and the anaerobic environment which exists within peatland deposits. The Peat Extraction Phase has the potential to have had a direct, significant, negative and permanent effect on unrecorded sub-surface sites. This is particularly the case between 1988 and 1993 prior to the Archaeological Survey of Ireland peatland surveys. Prior to 1993 it is possible that the Peat Extraction Phase had a direct, significant, negative and permanent effect on unrecorded sub-surface archaeological sites.

This negative effect was mitigated, however, by the Peatland Surveys 1993-4 and any associated excavations which were carried out as part of the mitigation phase of that work. Subsequently, the introduction of the 2012 Code of Practice served as a mitigatory factor in the discovery of

archaeological finds and features as well as their recording and excavation where required. In this regard it is considered that that residual effects on archaeological finds and features from 1993 to 2020 were direct negative Slight to Moderate and permanent while residual effects between 1988 and 1993 may have been direct negative Moderate to Significant and permanent.

Built Heritage (Protected Structures and NIAH)

No Protected Structures, NIAH structures or historic gardens are located within the Application Site boundary. Effects to such structures or items as a result of the Peat Extraction Phase are therefore not identified.

Local Cultural Heritage (Tumbeagh)

The small settlement indicated on the historic OS maps in Tumbeagh townland is located in an elevated area which was excluded from peat extraction and ancillary activities. No effects have occurred to the structure as a result of past peat extraction and ancillary activities and it is considered that the structure and associated stone walls have become ruinous over time.

Current Phase

Current activities at the Application Site include the transportation of previously extracted peat off the bogs and decommissioning, rehabilitation and environmental monitoring as part of the EPA licence. In terms of archaeology, architecture and cultural heritage, since peat extraction and ancillary activities ceased in June 2020, it is considered that the effects during the Current Phase are neutral.

Potential indirect effects (visual impacts) of the Current Phase are scoped out as the current phase of activities are not considered to have a wider landscape negative effect on the Cultural Heritage Environment. Archaeological monuments and features of architectural heritage merit which are located away from the Application Site are not capable of having their settings affected by localised / transient works within the Application Site. No effects from 2020 to the present day are considered to have occurred since peat extraction and ancillary activities has ceased. No mitigation measures are deemed necessary since peat extraction and ancillary activities has ceased.

Remedial Phase

The Applicant has produced a Draft Bord na Móna Cutaway Bog Decommissioning and Rehabilitation Plan for the Application Site, and it is the intention of the Applicant to rehabilitate the bog under IPC licence. Remedial activities such as drain blocking or tracking over peat fields may have a negative effect on any sub-surface archaeological finds or features that may be present on or beneath the surface of the peat. This may result in a direct, permanent, negative and significant effect. Bord na Móna's impact on archaeology is governed under the 2012 Code of Practice agreed between the now Department of Housing, Local Government and Heritage, the National Museum of Ireland and Bord na Móna. Since rehabilitation activities associated with Bord na Móna fall under the 2012 Archaeological Code of Practice, any potential effects may be dealt with in the same way as past peat extraction and ancillary activities. The Code of Practice (presented in Appendix 13-5 of the rEIAR) will mitigate against the potential for significant effects during this phase, and in this regard the overall significance of effects will be direct, permanent, negative slight – moderate.