



Marine Archaeological Assessment

of a

Proposed Marine Survey and Site Investigation Works within the Havfrue Cable Route Corridor

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Non Technical Summary:

McMahon Design and Management on behalf of TE Connectivity commissioned Geomara Ltd. to undertake a maritime archaeological assessment in connection with the proposed Havfrue Fibre Optic Cable making landfall at Old Head Beach, Co. Mayo. This report deals with the impacts of the proposed marine survey and the site investigations and proposes appropriate measures to mitigate any impacts on cultural heritage resources. The report addresses the section within the Irish jurisdiction.

The assessment comprises an introduction to the study area; and the identification of cultural heritage sites, features and deposits located along the proposed cable route corridor. In order to provide a comprehensive assessment, an extensive desk-based study of the route corridor has been undertaken. The potential impact of the proposed scheme on the receiving environment is addressed and mitigation measures to ameliorate these impacts are presented.

The assessment concluded that there is one known potential cultural heritage asset located along the cable corridor. This is located on the foreshore at Old Head, Louisburgh, Co. Mayo and is the possible remains of a wreck (W11423) or the Coastguard Station or the Salt Pans which is recorded as in ruins on the 1st Ed. 6 inch OS map. The coordinates of the possible wreck site are 0483329/0782279. The assessment also however highlights the archaeological significance of Clew Bay and its surroundings. The shipwreck inventory (Appendix 1) in particular has copious entries with and without rough coordinates.

Consequently, given the results of the impact assessment, the mitigation strategies outlined here detail the measures to be adopted in order to ameliorate any unforeseen direct, indirect and secondary impacts that the proposed survey and site investigations may have on features of maritime cultural heritage interest. If these measures are employed it is envisaged that the proposed survey and subsequent cable installation will have no impact on features of maritime cultural heritage interest.

The proposed bathymetric and geophysical surveys will ameliorate the potential seabed impacts by highlighting specific areas of archaeological potential which can then be avoided by the site investigation work and the cable route will also be rerouted to avoid any such areas.

The following mitigation recommendations are presented in connection with the proposed cable:

1. *It is recommended that all sites of cultural heritage interested included in this report are avoided.*
2. *Inspection of the 3 No. proposed trial pits on the sea shore at Old Head should be archaeological-led. Where archaeological features, finds or deposits are identified the ~~trial pit excavation~~ shall be abandoned and the cable route and consequent trial pit locations will be revised.*
3. *The proposed bathymetric and geophysical survey results should be assessed by a suitably qualified archaeologist prior to any site investigations. A line plan showing number of survey lines as a function of depth will be provided prior to start of survey operations. Any previously unrecorded archaeological seabed or sub-seabed features will be avoided by rerouting the cable route as well as any proposed site investigations.*
4. *The proposed Diver Swim Survey will comply with the requirements of the Underwater Archaeology Unit of the Department of Culture, Heritage & the Gaeltacht. Results of dive swim survey to be assessed by a suitably qualified archaeologist. A diver swim survey (spot dive) may be required to investigate and identify any obstacles or archaeological features found during the small boat survey up to safe diving limits.*

5. *Should the proposed cable route be subject to further revision, details of these revisions will be forwarded to the project archaeologist for assessment*

6. *On completion of the surveys and site investigations a report will be produced summarising all archaeological aspects of the project and submitted to DCHG and the National Museum of Ireland*

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1. INTRODUCTION

1.1 Introduction

A new transatlantic telecom system, HAVFRUE, is being planned from New Jersey in the USA to Blaabergh in Denmark with a branching unit to Old Head, Co. Mayo. The project is being developed by America Europe Connect 2 (AEC2) Ltd, an Irish company who have recently constructed the AEC 1 transatlantic cable system. The system is being designed and will be installed by TE SubCom on behalf of AEC 2. MDM Ltd have been engaged by TE SubCom to procure a Foreshore Licence for Marine Survey from the Irish 12nm limit to the landing site at Old Head. This is currently underway and upon receipt of the licence, the survey of this sector is due to be undertaken in May 2018. This report addresses the section within the Irish jurisdiction.

The assessment comprises an introduction to the study area; and the identification of cultural heritage sites, features and deposits located along the proposed cable route corridor. In order to provide a comprehensive assessment, an extensive desk-based study of the route corridor was undertaken. The potential impact of the proposed scheme on the receiving environment is addressed and mitigation measures to ameliorate these impacts are presented.

1.2 Site Location:

The proposed cable route comprises a 500m corridor over a distance of 71.571km, extending from the limit of the Irish territorial waters in a NW- SE orientation to run between Achill Island and Clare Island and into Clew Bay before turning south to make landfall at Old Head Beach on the south side of Clew Bay

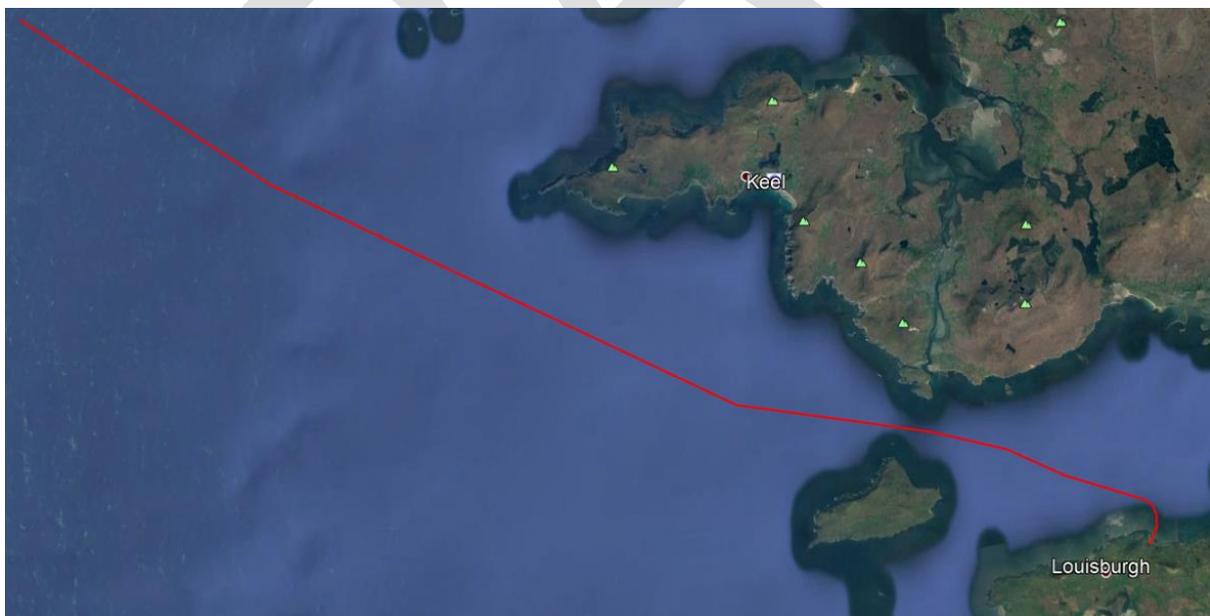


Figure 1. HAVFRUE Cable Route From 12NM Limit to Landfall at Old Head



Figure 2. HAVFRUE Cable Route through Clew Bay



Figure 3. Havfrue cable route at the landfall at Old Head

KEY TURNING POINTS (TO WGS-84)			
Turning Point	Chainage	Latitude	Longitude
TP 0	0	53°46'35.88	09°46'14.24
TP 1	0.02	53°46'35.86	09°46'13.25
TP 2	0.06	53°46'36.00	09°46'10.85
TP 3	0.18	53°46'38.24	09°46'05.51
TP 4	0.38	53°46'44.10	09°46'01.80
TP 5	1.11	53°47'05.34	09°45'43.86
TP 6	1.787	53°47'26.88	09°45'42.36
TP 7	2.407	53°47'45.93	09°45'52.99
TP 8	2.963	53°47'56.39	09°46'17.71
TP 9	7.567	53°48'51.35	09°50'11.53
TP 10	11.071	53°49'46.00	09°52'59.32
TP 11	15.272	53°50'26.93	09°56'38.40
TP 12	17.075	53°50'39.70	09°58'14.61
TP 13	26.27	53°51'42.61	10°06'26.24
TP 14	54.855	53°59'16.68	10°29'10.73
TP 15	71.541	53°04'44.22	10°41'19.37
TP 16	95.658	53°12'37.62	10°58'55.31

Table 1. Route Position List (WGS84)

1.3 Legislative Framework and Guidance

This assessment takes into account the following legislative procedures and guidelines:

- The National Monuments Act (1930-2004),
- The Foreshore Act (1933),
- Merchant Shipping Act (1995);
- Valetta Convention;
- ICOMOS; and
- UNESCO

2. ASSESSMENT METHODOLOGY

Archaeological assessment has been described as “the overall process of assessing the impact of a development” (DAHGI, 1999, Policy and Guidelines on Archaeological Excavation. Govt. Publications Office, Dublin).

The principle aim of assessment is to anticipate and avoid impacts on the archaeological resource. Archaeological assessment may be required as part of the planning process in response to developments which may be located in the vicinity of archaeological monuments (The Heritage Council. 2000).

This document has been prepared with reference to specific criteria set out in the Guidelines on Information to be Contained in an Environmental Impact Statement (EPA 2002) and the Advice Notes on Current Practice (in preparation of Environmental Impact Statements) (EPA 2003).

This report details 3 individual phases, all of which followed in succession and contributed towards the complete assessment of the project. These phases were:

1. Desktop study
2. Impact Assessment
3. Provision of suggested mitigatory measures

2.1 Desk based assessment

The desk-based assessment is a documentary and cartographic search utilising a number of sources in order to locate all known cultural heritage assets within the study area and within the general location of the proposed cable route. An additional purpose of the desktop study is to provide an historical and archaeological background to the subject site.

GeoMara consulted the following sources:

- Local and National Libraries
- The National Monuments and Site Register,
- The National Museum – topographical files included in the Heritage Council Heritage maps database (The hard copy topographic files were not available for the month of December)
- The Geological Survey of Ireland – aerial photographs,
- Examination of historic maps and related sources,
- The Architectural Archive of Ireland,
- The National Archives of Ireland,
- Historic Annals,
- Lewis’ Topographical Dictionary
- Mayo County Development Plan (2014-2020)

- Genealogical Societies and Local Historical Societies.
- The Ports and Harbour Archive
- The National Shipwreck Inventory

A variety of sources have been consulted to provide information on potential impacts and the relationship of the proposed cable route within the wider maritime context to include all known maritime and terrestrial cultural heritage assets. Together these provide an overview of the proposed cable route and its surroundings which can then be used to determine areas of archaeological potential.

2.2 Impact Assessment

Impact Assessment is the penultimate stage of the assessment process. It involves dissemination of the results of the desktop assessment and the determination of impact.

2.3 Mitigation measures

The final aspect of the overall assessment process is the provision of suggested mitigation measures. There are various ways in which potential impacts of a development can be mitigated. Mitigation measures usually involve avoidance (the implementation of exclusion zones and design alterations), reduction (the introduction of measures to deal with unexpected discoveries during works), or offsetting (excavation and recording of a site before an impact occurs). Ideally, sites and features of cultural heritage interest should be subject to as little disturbance as possible, where policy normally dictates a presumption in favour of preservation in situ in line with current national policy.

3. EXISTING ENVIRONMENT

3.1 Introduction

In describing the receiving environment, the context, character, significance and sensitivity of the baseline receiving environment into which the proposed development will fit is assessed. This takes account of any other proposed developments that are likely to proceed.

3.2 Planning Context in Relation to Archaeology and Cultural Heritage

The Mayo County Development Plan 2014-2020 addresses issues relating to Cultural Heritage and sets out a wide range of policies under a number of sub headings. This assessment takes account of all the stated policies and related objectives.

Appendix VIII of Section 2 of the County Development Plan also contains a list of Major Sites of Archaeological Importance in the County in State Ownership or Guardianship and National Monuments in Mayo that are the subject of Preservation Orders. Section 7 contains the List of Structures on the Record of Protected Structures for County Mayo.

Archaeology

For archaeological sites and material, the Mayo County Development Plan 2014-2020 includes the following policies:

- Protect the archaeological heritage and especially sites identified in the Record of Monuments and Places, National Monuments in the ownership or guardianship of the State, and National Monuments that are the subject of Preservation Orders, and to safeguard the integrity of the archaeological sites in their setting.
- Require that planning applications within the zones of archaeological potential as outlined in the Record of Monuments and Places include an archaeological assessment as set out in the Development Guidance document.
- Require that all large-scale planning applications (i.e. development of lands on 0.5 ha or more in area or 1km or more in length) include an archaeological assessment as set out in the Development Guidance document¹⁶
- Facilitate appropriate guidance in relation to the protection of the archaeological heritage in the County.
- Promote public awareness and appreciation of the archaeological heritage of the County.
- Protect the tentative World Heritage Site in Mayo on the UNESCO Tentative List - Ireland 2010, The Céide Fields, from inappropriate development and support its nomination to World Heritage Status.
- Facilitate public access to National Monuments in State care or in the ownership of the State where it can be demonstrated that the development will not have significant adverse effects on the environment, the integrity of the Natura 2000 network, residential amenity or visual amenity.

- Ensure the preservation of National Monuments that are the subject of Preservation Orders and features of archaeological interest in areas that are identified as Zones of Archaeological Potential in the Record of Monuments and Places.
- Protect, enhance and promote awareness of the industrial heritage of the County.
- Protect historic burial grounds within the County and encourage their maintenance in accordance with best conservation principles.

Architecture

The Planning and Development Act 2000 (Part II, Section 10) places an obligation on all Local Authorities to include in its Development Plan objectives for the protection of structures or parts of structures, which are of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. These buildings and structures are compiled on a register known as the Record of Protected Structures (RPS), and are outlined in Section 7 of the Mayo County Development Plan 2014-2020.

The following policies are considered relevant:

- AH-01 It is an objective of the Council to protect buildings and structures included in the Record of Protected Structures (RPS) which forms part of this Plan (Volume 4).
- AH-02 It is an objective of the Council to review the Record of Protected Structures including taking into consideration ministerial recommendations arising from the National Inventory of Architectural Heritage and add structures of special interest as appropriate, including industrial, maritime or vernacular heritage.
- AH-03 It is an objective of the Council to ensure that any development, modification, alteration, or extension affecting a Protected Structure and/or its setting is sensitively designed and sited and is appropriate in terms of the proposed materials, scale, density and layout, impact on historic features and junction with the Protected Structure and would not detract from the special interest, character and setting of the Protected Structure.
- AH-04 It is an objective of the Council to promote and improve the understanding of the architectural heritage of Mayo.
- AH-05 It is an objective of the Council to ensure that any new development or alteration to a building within or adjoining an Architectural Conservation Area positively enhances the character of the area and is appropriate in terms of the proposed materials, scale, density and layout, proportions, plot ratio and building lines.
- AH-06 It is the objective of the Council to identify places of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and to define them as Architectural Conservation Areas and to undertake an assessment to inform the potential ACA designation for the following areas:
 - a) Ballinrobe
 - b) Killala

- c) Pontoon
- d) Dugort
- AH-07 It is an objective of the Council to protect the character of an Architectural Conservation Area and to prohibit the demolition of a structure that positively enhances the character of an Architectural Conservation Area, except in very exceptional circumstances. Where demolition is granted an assessment of the impact of the replacement structure on the character of the Architectural Conservation Area will be required.
- AH-08 It is an objective of the Council to require that proposals for development within historic gardens, demesnes and estates include an appraisal of the designed landscape prior to the initial design of any development, so that this evaluation informs the design and respects the built heritage and horticultural elements of the site.
- AH-09 It is an objective of the Council to protect buildings and features of industrial and maritime heritage.
- AH-10 It is an objective of the Council to promote the sympathetic maintenance and re-use of vernacular built heritage and to encourage the retention of original fabric such as windows, doors, renders, pub/shop-fronts, roof coverings and interiors etc.
- AH-11 It is an objective of the Council to promote the sympathetic maintenance of traditional features and other built heritage such as stone walls and other elements such as post-boxes, water pumps, paving etc.
- AH-12 It is an objective of the Council to ensure that measures to upgrade the energy efficiency of Protected Structures and historic buildings do not damage the historic fabric.
- AH-13 It is an objective of the Council to promote a high quality built environment by encouraging excellence in design (both rural and urban); and innovative design and site layout solutions that address concerns of environmental sustainability, with regard to matters such as energy efficiency, use of materials etc.

3.3 Landscape Character Areas

The Mayo County Development Plan recognises that the county's landscape is not homogenous, and neither are the pressures on it. Section 4 of the Mayo County Development Plan 2014-2020 defines the objectives of Mayo County Council in relation to heritage.

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

- It is an objective of the Council to protect the unique landscape of the County which is a cultural, environmental and economic asset of inestimable value.

'Landscape and scenery are often important considerations in making planning decisions. It is important, therefore, to provide clear, fair and easily anticipated landscape policies to guide applications and decisions. In this way disappointments can be anticipated and avoided while also ensuring that decisions are more easily understood and accepted. To address these, an independent 'Landscape Appraisal for County Mayo' was commissioned. Its purpose was to identify and describe the landscape character of each part of the County. Following this, the capacity of each area to accept change – without disproportionate effects was evaluated and a series of policies to guide developments in each type of landscape was proposed.'

The *Landscape Appraisal for County Mayo* is contained in Section 4 of the Mayo County Development Plan 2014 - 2020. Section 2.3.4 of the document states that with regard to coastal vistas, *'The main concern for natural linear features such as coast lines and ridge lines is to avoid penetration by development that will interrupt and reduce the integrity of such elements.'*

3.4 Geological Baseline

Clew Bay is dominated by a spectacular example of a drowned drumlin field. These elongated hills are composed of glacially derived sediments which were inundated by rising sea levels at the end of the last glaciation. The Geological Survey of Ireland (GSI) Bedrock Geology of Ireland 1:1,000,000 map indicates that the area of landfall at Old Head is composed mainly of Paleozoic Serpentinite and sedimentary melange. Further within the bay area between Louisburgh and Mulranny and towards Clare Island the geological formation is comprised mainly of Mississippian limestone and calcareous shale. The ridge between Achill Island and Clew bay is composed of a Silurian sandstone/siltstone conglomerate. Further offshore to the west, beyond Clare Island and Achill, are paleozoic metasedimentary rocks.

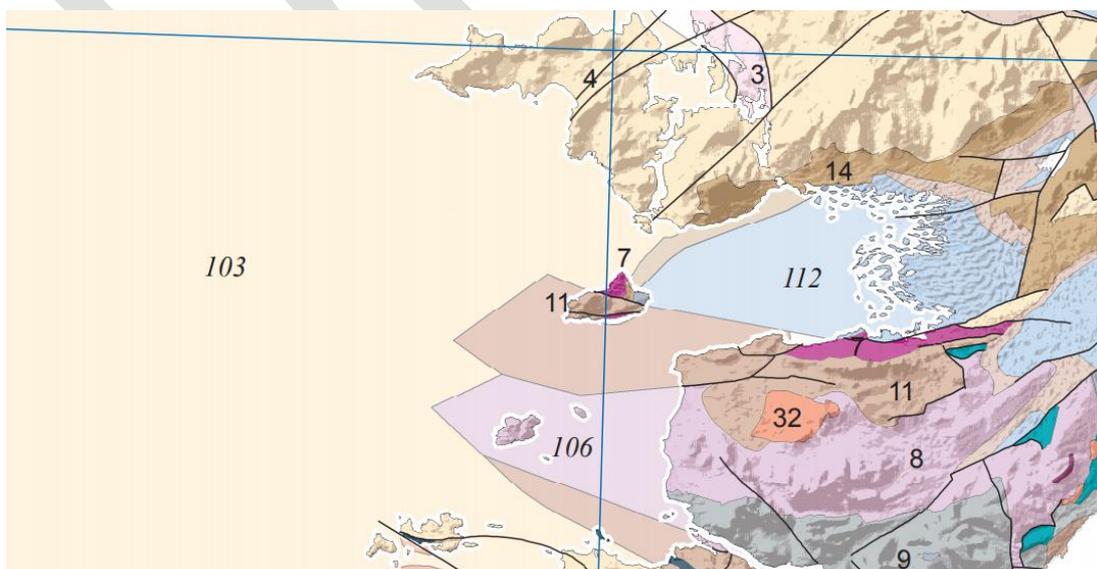


Figure 4. Extract from the GSI Bedrock Geology of Ireland 1:1,000,000 map

3.5 Bathymetry and seabed typology

The proposed cable route runs from the 160m contour roughly south west where it passes across a ridge which rises to approximately 25m between Achill Island and Clare Island. It then crosses the relatively flat expanse of Clew Bay before turning southward to make landfall at Old Head.

The maps and profile below show the cable route overlaid on the GEBCO (General Bathymetric Chart of the Ocean) gridded bathymetric data sets which are available at 30 arc second of latitude and longitude. The profile of the route clearly shows the high ridge encountered between Achill Island and Clare Island.

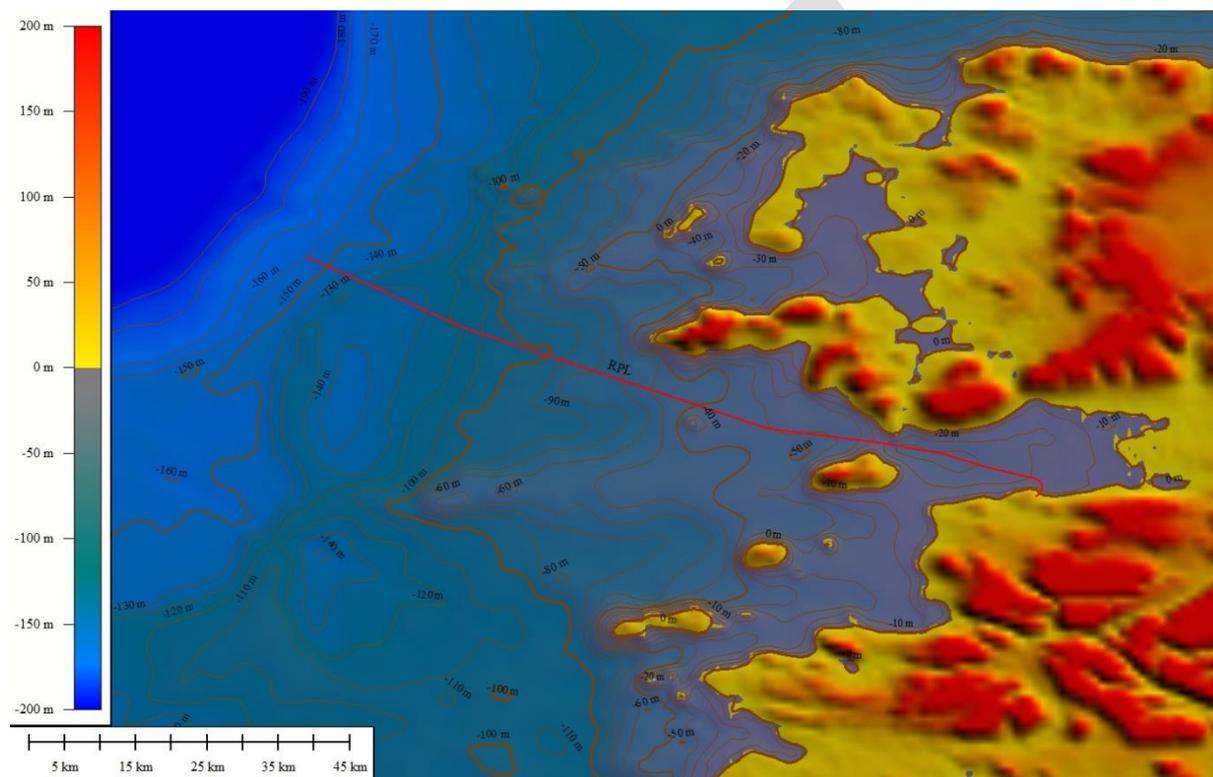


Figure 5. Proposed Cable route overlaid on the GEBCO gridded bathymetry data set with contours

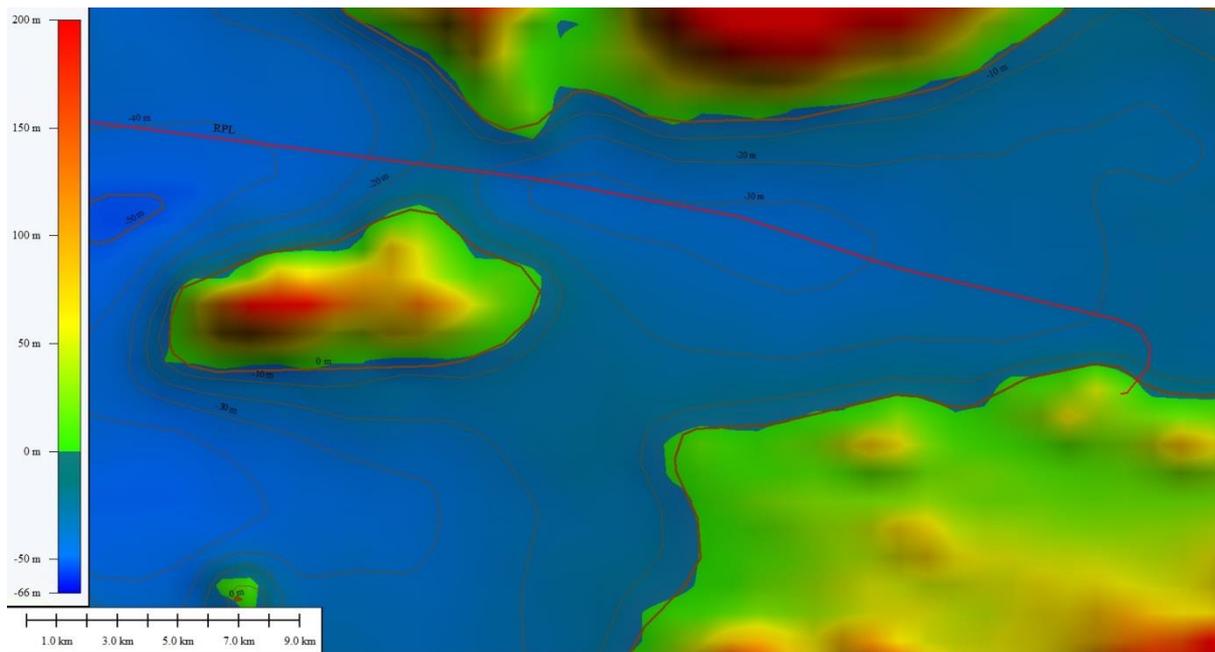


Figure 6. Proposed Cable route through Clew Bay overlaid on the GEBCO gridded bathymetry data set

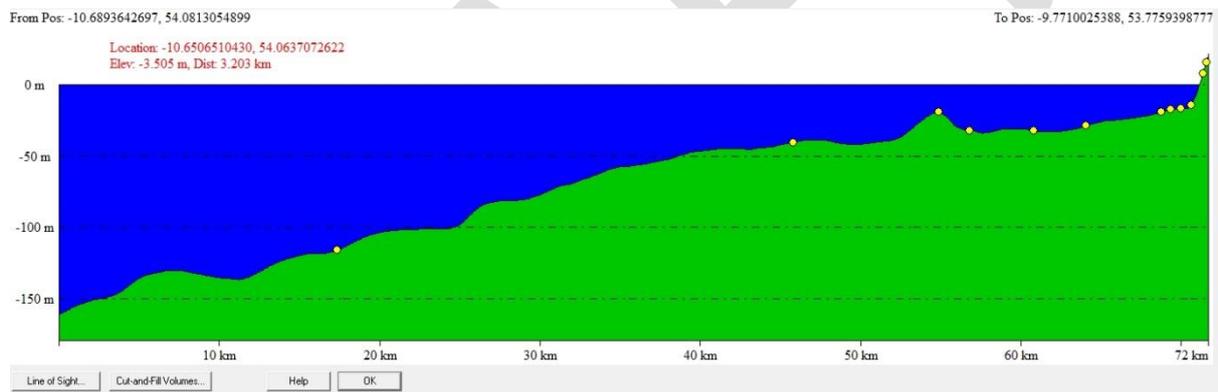


Figure 7. Profile of the proposed cable route from the 12NM limit to the landfall at Old Head

3.6 Clew Bay

Clew Bay is a west facing bay made up of a drowned drumlin field. The bay is overlooked by Croagh Patrick to the south to the north the Nephin Mountain range dominates the landscape. Clare Island is positioned on the most western extent of the bay and lies between Roonagh Point to the south and Achill Beg. Clew Bay has a rich maritime past and a long history of fishing and shipping which has contributed to the local economy and to its industries in the area. The bay is well known due to the O’ Malley family and their possessions in the middle ages. Grace O’ Malley known as the Pirate Queen owned castles on Clare Island, Achill and Rockfleet. The UíMháille were a seafaring family and controlled most of what is now the barony of Murrisk. Human settlement dates to prehistory and the Ceide Fields to the north date back to the first farmers during the Neolithic Period. Additionally, evidence through extensive excavations on Achill Island to the north of the cable route identified numerous archaeological sites such as a deserted village (**MA053-003003**), Megalithic Tombs (**MA042-020**, **MA042-021001**) and Enclosure sites (**MA042-021005**). Achill Beg to the south of Achill

Island is also rich with archaeological monuments and sites such as enclosures (**MA075-01800**), children's burial grounds and hut sites (**MA065-033002**). Clare Island to the south of the proposed cable has a long history of occupation similar to Achill and sites such as Bronze Age fulachtfiadh (**MA085-009005**), holy wells (**MA085-012002**) and enclosures (**MA085-009002**) are all present throughout the island. Old Head, where the cable route will finally make landfall, is possibly an anglicised version of the original placename meaning Sean and there is evidence of prehistoric occupation in the area. Two Midden sites (**MA086-012 & MA086-018**) suggest ecofacts associated with human occupation in the area which can date to prehistory and further evidence backs up this evidence with an ancient cooking site called a FulachtFiadh (**MA086-017**) which is located 1km southwest of the beach at Old Head. The construction of the Old Head pier, begun in 1822, completed in 1829, 'perfect' 1830, is a cranked L-shaped in plan and has a sandstone ashlar battered wall. It represents an important component of early 19th century built heritage in the area.

3.7 Cartographic evidence

Cartographic sources indicate that the landfall location and the surrounding area is a sandy beach area with only one possible discernible cultural heritage asset which is noted to be in the immediate vicinity of the cable route where it makes landfall. The aerial view below indicates a possible wreck (**W11423**) or the remains of the Coastguard station or Salt Pans which are recorded as in ruins on the 1st Ed. OS 6-inch map.

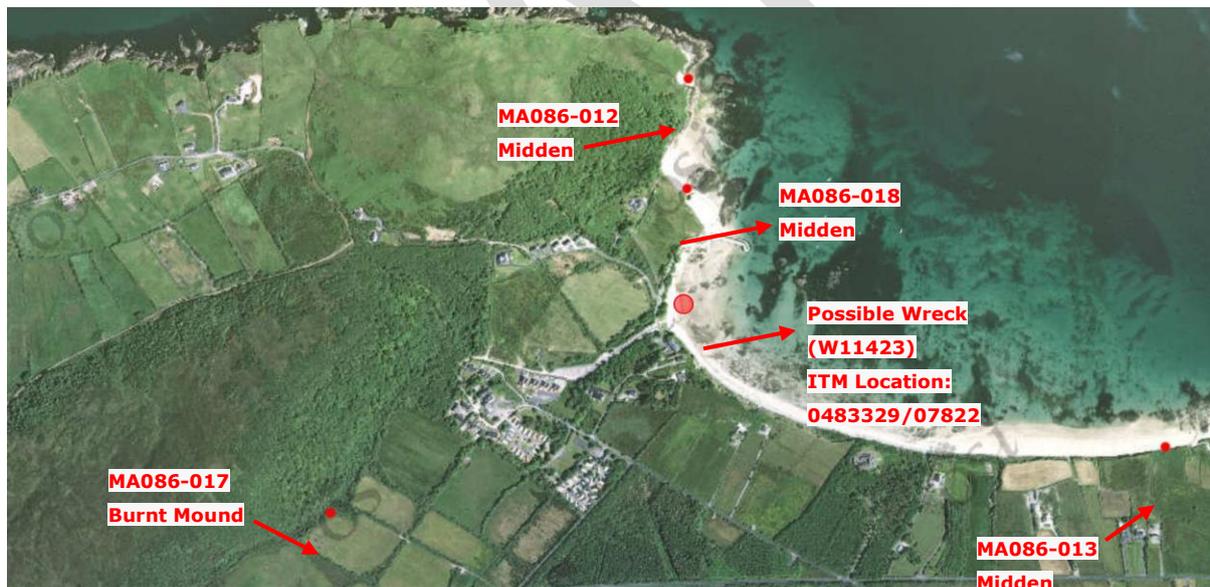


Figure 8. RMP site locations at Old Head including the possible wreck site (W11423)

4. CULTURAL HERITAGE WITHIN CABLE ROUTE CORRIDOR

The cable route is 71.5 km long and has a 0.5km wide corridor.

4.1 Sites of cultural heritage interest along the cable corridor.

The baseline environment has been divided into four categories, each of which is addressed individually. These are as follows:

1. Onshore cultural heritage assets listed by DAHG and National Museum of Ireland,
2. Known wrecks and obstructions as per Shipwreck Inventory/Receiver of Wreck and UKHO,
3. Unrecorded maritime archaeological sites, features and deposits identified through assessment of geophysical and hydrographic data,
4. Areas of archaeological potential.

4.2 Onshore cultural heritage assets listed by DAHG and National Museum of Ireland

There are four known archaeological sites in the vicinity of the proposed route corridor. These are listed on the Sites and Monuments Record of the DAHG. A Fulacht Fiadh (**MA086-017**) this is located 1km west of the proposed cable route. The three other SMR's are located directly to the north and one to the southeast of the proposed cable route where it makes landfall. The two archaeological sites to the north are middens (**MA086-012 & MA086-018**) these are roughly 300m and 500m away from the cable route. The last midden (**MA086-013**) is in the townland of Falduff almost 1km to the southeast. None of these sites will be affected by the proposed development.



Figure 9. Six inch OSI Map indicating RMP's including sites and monuments nearest to the cable route

4.3 Known Shipwreck Site

There is one known possible wreck (**W11423**) which was reported and identified in 2010 on Old Head beach which may be impacted by the proposed cable route making landfall. The timbers are c. 150m from the wheelchair access ramp for Old Head and are located at ITM co-ords: 0483329, 0782279. The timbers have

been allocated a wreck no. W11423 with the National Shipwreck Inventory of Ireland. There is a possibility of the timbers being part of the Coastguard Station or Salt Pans shown on the 1st Ed. OS Map but due to the uncertainty of the amount of timbers they have been left in-situ on Old Head Beach. The initial proposed route has been modified to stay further away from this feature.



Plate 1. Timber beam and block on the beach at Old Head

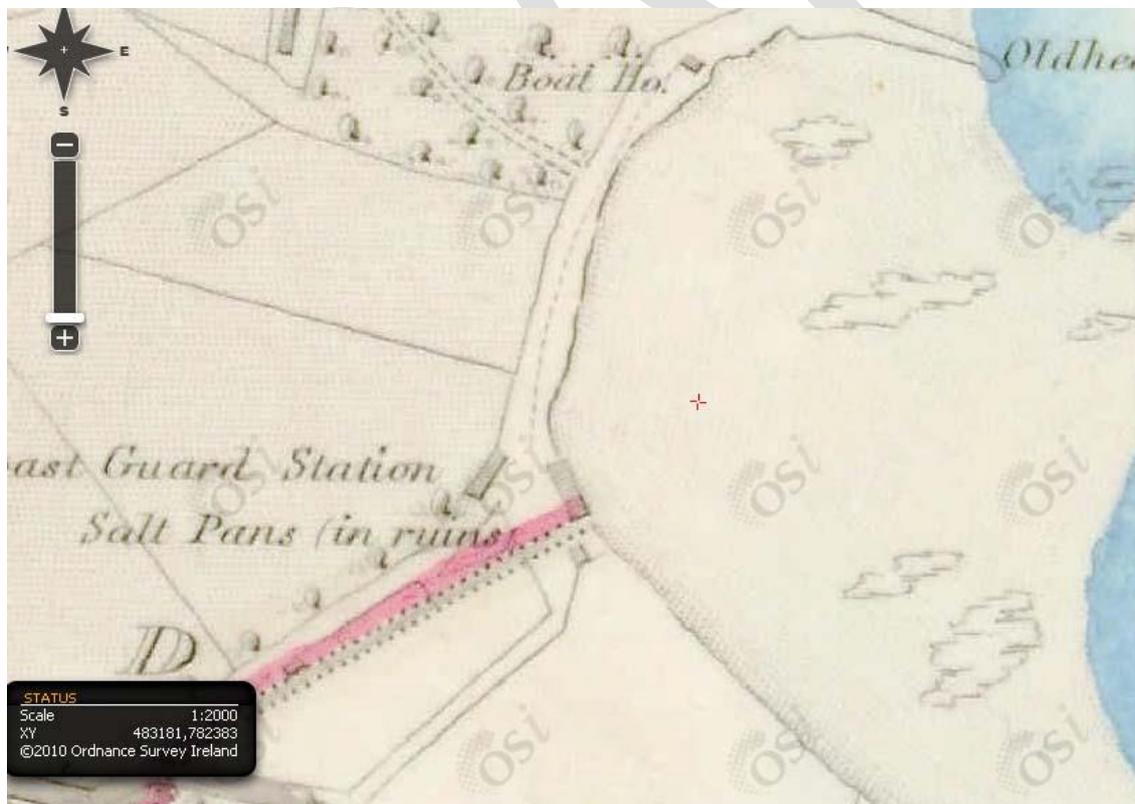


Figure 10. Coast Guard Station, Pier and Salt Pans are all marked on the Ordnance Survey six inch map. The location of the timbers on the beach are marked by a red cross



Figure 11. Cable route and possible wreck site overlaid on an aerial photograph of Old Head beach

4.4 Areas of archaeological potential

The assessment of the desktop study data indicates that the cable corridor is a narrow 500m wide strip of seafloor that is typified by a sandy substrate derived from Palaeozoic Shales. It is well possible the sediments along the route corridor are not conducive for the preservation of archaeological material. However, with the large cluster of coastal sites (see plate 2) surrounding the cable route corridor such as promontory forts, enclosures, hut sites, standing stones and middens etc it should be noted the potential for areas of archaeological activity is significant.

5. PROPOSED MARINE SURVEY AND SITE INVESTIGATIONS

The principal objective of the Marine Survey & Site Investigations is to ascertain a feasible and safe route for cable system design, deployment, survivability and subsequent maintenance with due regard for environmental considerations. The survey will also allow decisions to be made about cable armouring and burial. The survey will identify all route obstacles and cable hazards and provide detailed information to support cable route and installation engineering. The site investigations will enable “ground-truthing” of the seabed along the route.

The Survey Operations will be broken down into separate but overlapping areas, with boundaries defined by water depth as specified in the technical requirements outlined below. These water depth boundaries may be adjusted due to suitability of the survey vessel(s) and survey gear. The surveys will ensure that there are no gaps or un-surveyed areas between all of the different survey operations. For the marine route survey, the sidescan ranges will be limited to those providing the greatest resolution possible (able to resolve a 0.5m object or better), while following the requisite line spacing and overlap. The maximum speeds outlined will be used as guidelines. Bathymetry data collection will, at minimum, comply with the requirements in this document or with International Hydrographic Office standards (S44).

Survey line spacing is to be designed to ensure adequate coverage and overlap of geophysical measurements. For swathe bathymetry, “20% overlap” signifies that adjacent acquisition swathes within the survey corridor overlap by 20%. For side scan sonar (SSS), 100% overlap requires two passes of complete coverage over a given area of sea-floor, with the two passes each ensonifying the sea-floor from opposite directions to ensure targets are adequately imaged.

In order to ensure data continuity, the following overlaps between survey regions are to be established as a minimum;

- Landfall Site Survey to Diver Swim Survey – 50m overlap
- Diver Swim Survey to Small Boat Survey – 50m overlap
- Small Boat Survey to Offshore Survey – 500m overlap

5.1 Landfall Site Survey and Site Investigations

A non-intrusive topographic survey of the beach along the line of the proposed cable route is required from the carpark to the low water mark.

Site Investigations at Old Head will consist of;

- • 3 No. Trial Pits on the beach (2.5m depth, excavated and immediately reinstated by JCB)
- • Bar probes on the beach (effectively non-intrusive investigation)
- • Bar probes from the Low Water Line to the 3 metre contour (effectively non-intrusive investigation)

The sampling required on the beach at Old Head will involve 3 No. Trial Pits at 50m centres starting seaward of the High Water Mark. The 3 No. Trial Pits will be excavated (to a depth of 2.5m), logged, photographed and backfilled in a single intertidal period of less than 1 hour. The trial pits will be backfilled with the original excavated materials in the sequence in which they are excavated

Bar probes will be conducted every 25m from the High Water Mark out to 3m water depth. The bar probes will be used to prove the depth of sand, gravel or soft material.

5.2 Diver Swim Survey

The Diver Swim Survey will extend from the low water line outward to the small boat survey limits in accordance with the defined overlaps. A diver swim rope with 25m gradations will be positioned along the route. Dive lines will be configured to provide representative coverage across the entire survey corridor (nominally spaced at 125m).

Bathymetry will be measured by diver depth gauge at each 25m gradation. Geomorphology will be determined by underwater video along the length of the diver swim rope. The diver video will be undertaken along each line in the survey swathe; divers will use a dive slate or other clearly written method to indicate Kilometre Point (KP) and water depth at the specified gradations along the rope.

Tie-lines will be nominally spaced at 125m parallel to shore and will verify primary survey data within the Diver Swim area. Bathymetry and seabed composition are to be noted along tie-lines. A minimum of 2 tie-lines will be performed.

The Diver Swim Survey will also investigate and identify any obstacles found during the Small Boat Survey up to safe diving limits.

5.3 Small Boat Survey

The area extending seaward from the 3m water depth contour and inshore of the safe working draft limits of the primary survey vessel will be accurately surveyed with a small craft using Multibeam Echosounder (MBES), Side Scan Sonar and Sub-bottom Profile equipment. Sub-bottom Profile equipment will be able to discern the nature and density of the upper 3 metres of seabed, and will be used on a non-interfering basis with other sounding systems. A minimum of seven survey lines, based upon the Survey RPL, is required.

Features such as shallow reefs, surge channels, debris fields, archaeological features or anything that could be a hazard to the cable or installation team will be noted. General reconnaissance of the survey corridor beyond the planned survey lines and tie-lines may be necessary to describe the seabed as accurately as possible.

5.4 Offshore Survey

A continuous bathymetric swathe (Multibeam Echosounder), along with Side Scan Sonar imagery and Sub-bottom Profile will be obtained, centred on the preliminary route and along all wing lines needed to complete the corridor coverage. A minimum depth accuracy of 0.5% is required. Sub-bottom equipment will be able to discern the nature and density of upper 3m of seabed, and is to be used on a non-interfering basis with other sounding systems. Additional sounding lines may be necessary to identify any obstacles or archaeological features that may be encountered, and/or to meet the overlap and corridor requirements

5.5 Seabed Sampling

Seabed sampling will be required at locations covered by the Small Boat and Shallow Water Surveys.

A minimum of two attempts will be made at each sampling location to acquire a suitable seabed sample. If an acceptable sample is achieved on the first attempt, there is no need to perform a second attempt.

An acceptable sample is defined as;

- Grab Sample – recovery of approximately a full bucket of soils. Recovery of rocks and/or large size granular material will be taken as indication of a hard seabed and be deemed an acceptable sample.
- Gravity Core – recovery of no less than a 2m deep core of soil. If stiff or hard soils are encountered below 1m of seabed and are clearly indicated in the sample, a 1m+ soil sample will be deemed acceptable. Any sample site yielding less than 1m of recovery must be investigated a second time unless there is obvious damage to the coring equipment indicating a hard or rocky substrate.
- CPT – Penetration to a target depth of 2 metres but with a maximum of 3 metres.. Any push resulting in less than 2m penetration will warrant a second attempt.

Survey Area	Depth	Type	Avg Spacing	No. of samples
Small Boat	3 – 15m	Grab Sampler	1/500m	2
Offshore	>15m	Gravity Corer Or Cone Penetrometer	1/10km	6

Table 2. Seabed Sampling Requirements

6. IMPACTS

The following impact assessment is based on the results of the preceding section (desktop study).

6.1 Possible Impacts

There is one known site of cultural heritage interest along the cable corridor; consequently there could potentially be a direct impact. The area of interest is a possible wreck (W11423) located at ITM co-ordinates: 0483329/0782279 (Section 4.3). This location is approximately 80m to the north of the initially proposed cable route on Old Head beach. The route has now been modified to run further away from ~~be well clear of~~ the area of the possible wreck. ~~and~~ The possibility that the 3 trial pits would have an impact on subsurface features associated with the site of the potential wreck is quite low. It is possible that the timbers found on the beach could have been associated with the nearby Coastguard station. Possibly, and more likely though, they may be connected to the Salt Pans which is recorded as in ruins on the 1st Ed. OS 6" map and is located approximately 100m to the SW of the timbers.

The middens and fulacht Fiadh located on the shore close to the cable landing point to the possibility of uncovering similar subsurface remains on the beach (Figure 8).

Clew Bay and the Achill Island and Clare Island coasts are noted locations for shipwrecks as can be gleaned from the Shipwreck Inventory (Appendix 1). The precise locations of these shipwrecks are difficult to identify even when location details are present in the inventory. The sheer numbers of wrecks however recorded for the area means the proposed sampling strategy has the potential to impact on a wreck site

The recorded cultural heritage sites on the coast surrounding Clew Bay and the results from excavations undertaken in the area highlight the intense human activity in the general Clew Bay area from earliest times up to the present day (Appendix 3 and 4). This activity has the potential to yield associated features, finds or deposits. Any site investigation works on the seabed or sea has the potential to impact on unrecorded features finds and deposits.

7. MITIGATION MEASURES

There are various ways that potential impacts of a development can be mitigated. Mitigation measures usually involve avoidance (the implementation of exclusion zones and design alterations), reduction (the introduction of measures to deal with unexpected discoveries during works), or offsetting (excavation and recording of a site before an impact occurs). Ideally, sites and features of cultural heritage interest should be subject to as little disturbance as possible, where policy normally dictates a presumption in favour of preservation in situ in line with current national policy.

Overall, the aim is to minimise the impact on cultural heritage assets through the appropriate siting of infrastructure and works. As such, the preferred mitigation for the disturbance of a site of cultural heritage interest would be avoidance, so that, when it comes to installation, the cable and associated operations are micro-sited to avoid wrecks or identified sites and features of cultural heritage interest.

This can be achieved through the use of 'exclusion zones'. These should be marked on project charts to avoid potential sites and features of maritime cultural heritage interest. The size of the exclusion zone is normally dependent on the certainty the target represents a wreck or site and the potential importance or sensitivity of that asset (historically significant or not).

Adherence to the implementation of the exclusion zones during subsequent cable installation operations can be checked through procedures and protocols set out in a works method statement. Protocols should be established before the start of subsequent installation operations detailing instructions to follow in the event of unexpected discoveries, with contact details of the relevant stakeholders.

Given the results of the impact assessment above, the mitigation strategies outlined here detail the measures to be adopted in order to ameliorate the direct, indirect and secondary impacts that the proposed cable may have on features of maritime cultural heritage interest within the proposed scheme. If these measures are employed it is envisaged that the proposed cable installation will have no impact on features of maritime cultural heritage interest.

The proposed bathymetric and geophysical surveys will ameliorate the potential seabed impacts by highlighting specific areas of archaeological potential which can then be avoided by the site investigation work and the cable route will also be rerouted to avoid any such areas.

The following mitigation recommendations are presented in connection with the proposed cable:

1. *It is recommended that all sites of cultural heritage interest included in this report are avoided.*

2. *Inspection and testing at the 3 No. proposed trial pits on the sea shore at Old Head should be archaeological led. Where archaeological features, finds or deposits are identified the ~~excavation trial pit~~ shall be abandoned and the cable route and consequent trial pit locations will be revised.*
3. *The proposed bathymetric and geophysical survey results should be assessed by a suitably qualified archaeologist prior to any site investigations. A line plan showing number of survey lines as a function of depth will be provided prior to start of survey operations. Any previously unrecorded archaeological seabed or sub-seabed features will be avoided by rerouting the cable route as well as any proposed site investigations.*
4. *The proposed Diver Swim Survey will comply with the requirements of the Underwater Archaeology Unit of the Department of Culture, Heritage & the Gaeltacht. Results of dive swim survey to be assessed by a suitably qualified archaeologist. A diver swim survey (spot dive) may be required to investigate and identify any obstacles or archaeological features found during the small boat survey up to safe diving limits.*
5. *Should the proposed cable route be subject to further revision, details of these revisions will be forwarded to the project archaeologist for assessment*
6. *On completion of the surveys and site investigations a report will be produced summarising all archaeological aspects of the project and submitted to DCHG and the National Museum of Ireland*

DRAFT

APPENDIX 1 SHIPWRECK INVENTORY

The Shipwreck Inventory of Ireland includes all known wrecks for the years up to and including 1945. The Shipwreck Inventory is principally a desktop survey with information gathered from a broad range of cartographic, archaeological and historical sources, both documentary and pictorial. Approximately 10,000 records have been compiled and integrated into the shipwreck database thus far. Wrecks over 100 years old and archaeological objects found underwater are protected under the National Monuments (Amendment) Acts 1987 and 1994. Significant wrecks less than 100 years old can be designated by Underwater Heritage Order on account of their historical, archaeological or artistic importance as is the case with the wreck of the RMS Lusitania located off Kinsale Head. Underwater Heritage Orders can also be used to designate areas of seabed or land covered by water to more clearly define and protect wreck sites and archaeological objects. Under the legislation all diving on known protected wreck sites or with the intention of searching for archaeological underwater material is subject to licensing requirements. The Shipwreck Inventory for County Mayo was consulted in the Underwater Archaeology Unit offices for vessels lost in the survey area using the following place names; Achill Island, Achill Beg, Clare Island, Clew Bay, Corraun, Dooagh, Keel, Killaallagh, Louisburgh, Mallaranny, Newport, Old Head, Westport. There were a large number of shipwrecks recorded in the area and they are as follows:.

Site Name	Date of Loss	Place of Loss	Description	Reference
AghiaEirine (SS) W06657	10/12/1940	Achill Island, Zone 909, Western shore adjacent to Claggan and DumhaEige townlands 53 53 13.420N, 09 59 03.180W	4,330 ton steamer foundered en route from Cardiff to Buenos Aires with cargo of coal. The steamer lost control of its steering and ran ashore on the western cliffs of Achill Island. Part of the wreck was salvaged in 1941 by Mr. J Sweeney and a local diver, Mr j, Gorman. The wreck lies on a rocky seabed in roughly 15 meters of water.	Bourke 1994, 188: Meide 2006.
Abigail W06656	24/01/1847	Westport, Zone 909, exact location unknown	No description available	PP 1851, Vol. L11, 6; Lloyd's List 10,255, Wednesday 27 th January 1847
Allen	4 Jan. 1811	near Westport	This ship was en route from the Azores to Liverpool, under Price, when she was wrecked. The crew and cargo were saved.	L. L. no. 4530, 22 January 1811
Amelia W06668	19/12/1815	Achill Head, Zone 909, exact location	No description available	Bourke 1998,138, Llyods Listno.5032 19 th

		unknown		December 1815, Freemans journal LVII, 4 th January 1816, 4.
Apapa (MV) W06678	15/11/1940	Achill Head, 235 nautical miles west of Zone 909 54 34 00.000N, 16 47 00.000W	No description available	Hocking, 1969, 39; BVLS 1939- 45, 13.
Argyle W06683	15/10/1842	Louisburg, Zone 909, exact location unknown	No description available	PP1843, Vol. IX, 42
Arrow W06684	20/09/1782	Mayo Coast, Zone 909, exact location unknown	No description available	Bourke, 2000, 105.
Ashcrest (SS) W06685	07/12/1940	Mayo, 54 35 00.000N, 09 20 00.000W	No description available	UKHO Wreck Data 1996, Hocking 1989, 51
Assistance W06686	16/04/1838	Black Island Bay, near Westport, Zone 909, exact location unknown	No description available	Bourke, 2000, 105.
Botley Wood W06690	05/02/1847	Westport (on shore), Zone 909 Exact location unknown	No description available	PP 1851, Vol LII, 7.
Clan Menzie SS W09551	29/07/1940	54 10 00.000N, 54 10 00.000W	No description available	N/A
Clyde W06701	22/12/1847	Achill Island, Zone 909, exact location unknown	No description available	PP 1851, Vol. LII, 39; Lloyds list 10, 539, Tuesday 28 th December 1847

Columbus W06702	10/05/1834	Louisburgh, Zone 909, exact location unknown	No description available	PP1836, Vol. XVII, 310.
CS Parnell W06705	Unknown	Inishgort Lighthouse, Clew Bay, 5 cable degrees from 53 50 04.000N, 09 36 56.000W	No description available	UKHO Wreck data 1996
Catherine	5 Feb. 1822	near Westport	This vessel of Leith was en route from Westport to Liverpool under Captain Morrison. She went ashore and broke up.	Bourke, 1998, 138
Catharine / Catherine	19 Nov. 1822	Clew Bay	A vessel laden with timber, supposedly the Catharine, was totally wrecked.	Bourke, 1998, 137 L. L. no. 5754, 26 November 1822
Charles Stuart Parnell	June 1928	between Island Mór and the channel between Inisgort and Collanbeg, Ilanmore Harbour, Westport Bay	This 200-ton wooden ketch was a rigged sailing vessel and worked as the supply ship for the local lighthouses. She was burned and lost but now lies on sand and coral at 12 metres, in a broken state.	Bourke, 1994, 188
Chio	24 Jan. 1852	Culleen Island, Clew Bay	This Greek brig dragged her anchor in a force 9 gale and went ashore on the island. She sustained a lot of damage but was expected to be got off on the next spring tide. She got off on the 20th with her copper slightly damaged.	CSP, 1852-53, Vol. LXI, 26-27
Creteboom	22 Sept. 1937	Mayo Position 54 08 08.5N, 009 08 15.0W WreckNo.0073 000	This British tug weighed 685 tons and measured 125 x 27 x 14 feet. She was built during WWI to tow barges of iron ore from Spain to the UK. She was built by John Ver Mehr and Co. of Shorham and was constructed of ferroconcrete due to the shortage of steel. She had a 3 cylinder, 725ihp engine. The vessel was tied to the hull of registered tug Pressman when she arrived at Ballina on the 22nd September 1937. They	Admiralty Data 1996

			<p>encountered bad weather whilst crossing the bar and collided. The Creteboom suffered a crack below the waterline but it was not noticed until she came alongside the jetty. Efforts were made to keep her afloat, but she was let go away from the jetty where she sank and settled into mid stream. She stayed there for 30 years before being re-floated during the mid-70's and moved 25 yards to her present position. In 1967/68, a stranded wreck was seen on a sandbank in mid stream, on the approaches to Ballina, on an aerial photograph.</p>	
Dispatch W06707	02/11/1884	Iniskea, Zone 909, exact location unknown	No description available	Bourke, 2000, 106.
Dunvegan Castle (SS) W06711	28/08/1940	Achill Head, 37 miles west of Zone 909, 55 05 00.000N, 11 00 00.000W	No description available	ASS.P26; BVLS. 1939-45, 5; Larn and Larn 2002, LCLSR. 1939-45, 118; LR 1940-41 No. 73466(D); SIC Vol.2, 134; Union castle line history, 118, Hocking 1989, 198; Lloyds list 30,278, Friday 27 th September 1940.
Edward W06714	24/12/1815	Achill Head, Zone 909, exact location unknown	No description available	Bourke 1998, 138
El Grand Grin W06715	C 1588	Clare Island, Zone 909, exact location unknown	No description available	Bourke 1994, 189; Bourke 1998, 137; Flanagan, L, 1988, 22.
Eliza	13 Nov. 1847	Westport Bay	This 123-ton sailing vessel was on the shore	. CSP, 1851, Vol. LII, 35

Embassage (SS) W06718	27/08/1941	Achill Head 100 miles west of Zone 909, 54 00 00.000N, 13 00 00.000W	No description available	Hocking 1969, 212; BVLS 1939- 45, 26.
Emerald W06720	15/07/1847	Louisburgh, Zone 909, exact location unknown	No description available	PP 1851, Vol. LII, 25.
Fancy	1696	Inishlyre Roads, Clew Bay	This Man O' War vessel originally belonged to Charles II of the 1694 Spanish expedition from Corunna. Henry Everly (Long Ben) took over the vessel and used her for piracy. The vessel is recorded arriving in Mayo in June 1696 with 20 pirates on board. It is not certain what happened to the ship but it is thought to have been abandoned or wrecked	Bourke, 1994, 193
Flor W06729	18/03/1854	Westport, Zone 909, exact location unknown	No description available	PP 1854-55, Vol XXXIV, 44-5; PP 1861, Vol.LXII, 39; Lloyds List No 12579, July 20th 1854
Flora	7 April 1899	Inishlyre Roads, Clew Bay	This 44-ton wooden sloop of Westport was 52 years old. The master and owner was J. Moran of Careholly, Westport. She was at anchor at Inishlyre, in ballast, with two crew aboard. She was hit by the schooner Kate, of Westport, in a WSW force 9 wind and she became a total loss.	CSP, 1900, Vol. LXXVII, 157
Flying Cloud W06732	25/07/1895	Achillbeg, Zone 909, exact location unknown	No description available	PP 1898, LXXXIII, 107
Forest Monarch	20 Nov. 1848	Inniskeagh Island (Inishkea ?)	N/A	CSP, 1852-3, Vol. XCVIII, 2
Gemini W06738	12/12/1822	Clare Island, Zone 909, exact location	No description available	Bourke 1998, 139; Lloyds Listno. 5736, 18 th

		unknown		October 1822
George W06739	02/02/1802	Westport, Zone 909, exact location unknown	No description available	Bourke 1998, 138; Larn and Larn 2002; Lloyds Listno. 4226, 2 February 1802; Lloyds list, No 4226, 02/02/1802 Tuesday. LR 1801 No 61 (G); SIC Vol. 2, 138
George W06740	26/11/1822	Clew Bay, Zone 909, exact location unknown	This vessel was en route from Quebec to Greenock, under Captain McAlpine. She was abandoned by the crew and the vessel drifted into the bay. The captain and one of her 12 crew were picked up by the Sultan.	Bourke 1998, 137; Lloyds list 5, 745, 26 th November 1822.
Gertrude W06743	18/09/1744	Westport, Zone 909, exact location unknown	No description available	Lloyds list, No. 921, 18 th September 1744
Helena	1 March 1833	off Westport	This 97-ton vessel of Alloa (Port of Grangemouth) was 30 years old and second class. She was en route from Glasgow to Limerick when she was lost.	Bourke, 1998, 137 CSP, 1836, Vol. XVII, 300, 371
Helena W06751	12/01/1808	Newport, Zone 909, exact location unknown	No description available	Larn and Larn 2002, Llyods list No 4205: 20/11/1807
Hope W06756	19/12/1835	Achill Island, Zone 909, exact location unknown	No description available	ILR; Larn and Larn 2002 STS Apx 1, 88.
Hope W06757	05/04/1818	Achill head, Zone 909, exact location unknown	No description available	Bourke 1994, 194, PP 1896, Vol XVII, 293.
Hopewell W06758	26/12/1833	Achill Island, Saddle head, Zone 909, exact location	No description available	Larn and Larn 2002 LR 1833 No 884 (H)

		unknown		
Jane	25 Feb. 1794	near Westport	This ship was en route from Lisbon to Dublin, under Buchanon, when she went ashore.	Bourke, 1998, 138 L. L. no. 2589, 25 February 1794
Jeanie W06770	1894	Achill, Zone 909, exact location unknown	No description available	PP 1894, Vol. LXXVI, Floating derelicts, 87
Jenny W06771	13/01/1894	Achillbeg Island, Zone 909, exact location unknown	No description available	Bourke 1998, 188; Larn and Larn 2002, LCR 1894, 15(h); LR 1893-4 No 364(j); PP 1985, LXXVII, 138; SIC Vol. 1, 188; Lloyds list, No 17, 589 Mon. 15 th January 1894, 7, c.16 Lloyds list, No. 17, 592 Thursday 18 th January 1894, 10; Lloyds list, No 17, 601 Monday 29 th January 1894, 7, c 18; Lloyds list, No 17, 604 Thursday 1 st February 1894, 10.
Leguan	15 Sept. 1860	Clew Bay	Official Number: 13,026. This Glasgow based, 349-ton, vessel was en route from Grenada to Greenock with a cargo of rum, sugar and molasses. She was caught in a gale on the 13th and took shelter at Mayo Island but drifted into Clew bay. She was at risk of going ashore at Leckanvey, near Westport, so the master, William Buchanan, had the masts cut. On the 14th three pilot boats went out to the stricken vessel despite the bad weather. The men boarded the vessel but their three boats sank. The master of Leguan was unable to get	CSP, 1861, Vol. LXIII, 418, 432

			ashore until 6 a.m. on the 15th. While he was ashore trying to get an anchor and a steam tug, a fire broke out on his vessel. The fire spread rapidly so the crew, fearing there was powder on board, left the vessel. She became a total loss. An inquiry ordered at Westport found Master Buchanan at fault for anchoring at Mayo Island when he could have gone to Inishgort. He was also blamed for going ashore on the 15th when the officer left onboard was not capable of holding the vessel. The cause of the fire was not discovered. The crew of the three pilot boats were rewarded with £5 by the Merchant Mariner Fund	
Leopard	1665	Mayo	This 400-ton Dutch vessel left Wielingen on 28 th October 1665. The vessel was thought to have been wrecked west of the Shetlands but it is likely to have occurred at Mayo. Attempts were made to salvage the vessel in August 1666. A ship came from Crookhaven to retrieve the anchor and cables.	Bourke, 1994, 192
Leopard	9 Dec. 1794	Near Westport	This ship was en route from London to Galway when lost. Part of the cargo was saved. She was under Ross or Captain Fose. Bourke, 1998, 136, 138	L. L. no. 2671, 9 December 1794
Loven	3 Sept. 1802	Off Westport	This vessel was en route from Altona to Marseilles under Cornelefon when she was lost. The crew survived.	L. L. no. 4287, 3 September 1802
Liberator W06784	14/01/1895	Clew Bay, Achill Island, Curran Coast, Zone 909, exact location unknown	No description available	Larn and Larn 2002 BOT WkRtn 1895 Appx C Table 1, 135 (656); NLR; PP 1896, LXXV 135.
Lizzie D. Small W06785	25/11/1922	Westport, offshore, Two mile rock E of, Zone 909, exact location unknown	No description available	Larn and Larn 2002 LCR 1922, 12(g); NLR
Love W06786	26/06/1833	Louisburgh, Zone 909, exact location	No description available	Bourke 1994, 194; PP 1836, Vol. XVII, 302

		unknown		
Lugar	1889	Inishgort	This steam ship was in a derelict state when the Lightkeeper of Inishgort noted it. The vessel struck some rocks but floated off and 'proceeded.'	CSP, 1894, Vol. LXXVI, Floating Derelicts, 85
Maria	10 Jan. 1849	Westport Bay	This vessel of Londonderry was en route from Liverpool or from New York to Galway when she was lost. The crew survived.	Bourke, 1994, 194; CSP, 1852-3, Vol. XCVIII, 2
Mary and Sally	30 Jan. 1808	near Westport	This vessel was en route from Belfast or from Charlestown to Belfast, under Captain Brown. She was wrecked but the cargo was hoped to be saved.	Bourke, 1998, 139 L. L. no. 4230, 19 February 1808
Mary	2 June 1890	off Rosmoney Point, Clew Bay	This 1-ton unregistered wooden lug was 16 years old. The master and owner was M. Gibbons of Rosmoney, Co. Mayo. She was en route from Rosmoney to a vessel in Clew Bay with 2 crew and a cargo of stone. She encountered a SW force 9 wind and was lost. One life was lost.	CSP, 1890-91, Vol. LXXVI, 111
Mary	11 Sept. 1894	Rosspport	This wooden Curragh weighed 1 ton. She was fishing at Rosspport, Co Mayo, when it capsized and later broke up. One of the four crew was lost.	CSP, 1896, Vol. LXXV, 150
Mary	26 Dec. 1897	Co. Mayo	This 4-year old wooden fishing canoe weighed 1 ton. The master and owner was M. Ryan from Beelderig, Co. Mayo. She was en route from Balderig, Mayo, fishing.	CSP, 1899, Vol. LXXXVII, 132
Nelson	27 Jan. 1847	Westport	This sailing vessel was on the shore.	CSP, 1851, Vol. LII, 6
Nimroud	28 Jan. 1875	abandoned off the coast of Mayo	This 826-ton wooden barque of Cardiff, Official No. 3,913, was built in Miramichi, New Brunswick in 1853. Her owner was R. W. Morris of Clifton, Gloucestershire, and her master was William Oakley. She was en route from the Penarth Roads to St. Vincent, Cape de Verd, with a 1,000-ton cargo of coal and 20 crew. During bad weather several of the lanyards of the fore and main rigging were lost and had to be replaced. On the 11 th the mainmast went over the side, carrying with it the mizen mast. The wreckage was cut away but the ship continued to labour heavily. On the 12 th the foremast went over the side, carrying the bowsprit with it. A raft was got over the bows, with an anchor hung over to keep her head to the sea. Other	CSP, 1875, Vol. LXX, 204, 318

			<p>efforts were made to erect temporary sails. The vessel drifted until off Slyne Head and then northwards towards the Bills Rocks, and on towards Achill Head. When within 3 miles of land, the crew insisted on leaving the ship. They took to the boats with the master but 2 crewmen stayed on board. The boats landed with the assistance of coastguards. The two men on board let go the anchors and were rescued the following day. The vessel was eventually taken in tow by the Rose of Glasgow and brought to Westport. The court found that the master was placed in such a position that he was not considered guilty of default in leaving the vessel but he did show a want of energy and decision. His certificate was returned.</p>	
Nancy W06814	15/02/1893	Clew Bay, Innislyre, Zone 909, exact location unknown	No description available	Larn and Larn 2002 BOT WK Rtn 1893 Appx C Table 1, 114(474); NLR; PP 1894 LXXXVII, 114
Neptune W06816	21/01/1860	Meenaun (Minion) Cliffs, Mecnaxon Hill, Dukenella Townland, Achill Island, Zone 909, exact location unknown	No description available	Lloyds list, No.14, 293, Wednesday 25 th January 1860; Lloyds list, No.14, 295, Friday 27 th January 1860; Bourke 1994, 188; PP 1861, Vol. LVIII, 39, 53, 66; PP 1861, Vol. LXIII, 408/39
Neptune W06817	23/01/1838	Iniskea, Zone 909, exact location unknown	No description available	Bourke 2000, 105, Lloyds List, No. 7460 Wednesday January 31 st , 1838
No Name W06820	21/03/1896	Clare Island, Zone 909, exact location unknown	No description available	Larn and Larn 2002 BOT WkRtn 1896, Appx C

				table 1, 136 (866); NLR; PP 1897, LXXXVIII, 136
No Name W11142	Unknown	Currown peninsula clew bay 53 5123.069N, 09 5048.306W	No description available	No Name W11142
No Name W11423	Unknown	Old Head Clew bay 53 46 37.226N, 094612.494W	No description available	No Name W11423
Ortolan W06826	01/10/1882	Achill Island, Zone 909, exact location unknown	No description available	Lloyds List, No 21, 424, Thursday 28 th December 1882; PP 1886, Vol LIX, 182-83, PP 1884 LXXI 124.
Pearle W06833	28/01/1854	Achill Island, Zone 909, exact location unknown	No description available	PP 1845-55, Vol XXXIV, 30-31; Lloyds List, No. 12437, Thursday 2 nd February 1854, 4 c 8
Pearl	6 Dec. 1904	Innislyre	This wooden smack of Westport weighed 36 tons and was 57 years old. The master and owner was T. Kelly of Island More, Westport. She was at anchor at Innislyre, in ballast, with no crew aboard when she burnt. She was a total loss. There was a SSW force 7 at the time.	CSP, 1906, Vol. CVIII, 147, 637
Otter	unknown	Clew Bay	A number of cannon balls were found in the bay and are thought to have come from the Otter.	Bourke, 1994, 193
Reformer	24 March 1856	south point of Innishack	This 145-ton brig was carrying a cargo of wheat when she was stranded in a SE force 3 wind. She became a total loss and four of the eight men on board were lost.	CSP, 1861, Vol. LXIII, 39
Rodney	May 1834	Westport	The American brig Rodney of Boston was laden with cotton and naval stores. The brig Douglas of Southerland rescued her and brought the passengers safely to	Freemans Journal, 21 May 1834, Column Ship News

			Westport.	
Rosa W06845	02/02/1822	Westport 10 Miles W of Zone 909, exact location unknown	No description available	Larn and Larn 2002, Lloyds List No 5671 and 5680: 03.02 and 12.03.1822 Tuesday. LR 1822 No 271 (C); SIC Vol.2, 138. Lloyds list 5, 671, 3 rd February 1822
Rudyard Kipling W06848	16/09/1939	Clare Island, 74km West Zone 909, 53 50 00.000N, 11 10 00.000W	No description available	BVLS 1939-45, 56; Larn and Larn 2002 LCWLR 1939-45, 7; Lloyds List No. 38, 961 Tuesday 19 th September
Salem W06851	Feburary 1840	Westport, Zone 909, exact location unknown	No description available	Irish National archive, Westport harbour commission 1081/1/1
San Nicholas Prodanelli W06852	1588	Curraun Peninsula, Zone 909, exact location unknown	No description available	Bourke 1994, 189, Irish Independent 26.6.1997
Sentry (SS) W06857	04/05/1911	Achill Island entrance to Keel Harbour, Zone 909, exact location unknown	No description available	Bourke 1994, 188; Lloyds List, No. 22, 964, Thursday 4 th May 1911, 10 c. 22; Lloyds List, No. 22, 966 Saturday 6 th May 1911, 11 c.22; Lloyds list, No. 22, 967 Monday 8 th May 1911, 8 c.22
Shamrock W06858	05/11/1911	Achill Island, Derreen Point, Zone 909, exact location	No description available	Larn and Larn 2002 BOT WkRtn 1911 Appx C Table 1, 95 (393);

		unknown		NLR
Six Brothers W06865	01/04/1763	Newport ' sound of actrill', Zone 909, exact location unknown	No description available	Larn and Larn 2002, Lloyds List No 2840: 01.04 1763 Friday; Lloyds List No 2840, Friday 1 st April 1763
Sollecito Bochese W06866	10/02/1850	Achill, Zone 909, exact location unknown	No description available	Bourke 1994, 194; PP 1852-3, Vol XCVIII, 4; Lloyds list, No. 11 203, Friday 15 th Feburary 1850; Lloyds list No 11205, Monday 18 th Feburary 1850
Somand W06867	20/09/1886	Achill Head, Zone 909, exact location unknown	No description available	Lloyds list, No. 15, 326, Tuesday 5 th October 1886, BOT WkRtn 1886 Appx C Table 1, 121 (887); Bourke 1994, 195; Larn and Larn 2002; LR 1886-7 No 1315(S); PP 1888, XC, 121; SIC Vol 1, 194
Sophia W06868	22/11/1901	Clare Island, Zone 909, exact location unknown	No description available	Bourke 1994, 192; PP 1902, LXIII, 127
St Patrick W06877	09/11/1876	Achill, 130 miles of, Zone 909. Exact location unknown	No description available	PP 1877, Vol. LXXV, 75
St Patrick W06878	16/10/1792	Achill Head, Zone 909, exact location	No description available	Lloyds Listno, 2445, 16 1792

		unknown		
St Patrick W06881	16/10/1793	Achill Head, Zone 909	No description available	Larn and Larn 2002, Lloyds List No 2445,; 16.10.1792 Tuesday; NLR
Star of Peace W06884	26/02/1886	Clare Island, Zone 909, exact location unknown	No description available	Lloyds list No. 15, 140, Monday 1 st March 1886; PP 1887, LXXIV, 134
Successful W10071	Unknown	Achill Sound Bleannohaeg Strand, 53 5607.476N, 09 5552.788W	No description available	
Sutherland W06886	Unknown	Clare Island, Zone 909, exact location unknown	No description available	Bourke 1994, 192
Swallow W06887	01/12/1825	Westport, Clogher Head, Zone 909, exact location unknown	No description available	Larn and Larn 2002, Lloyds list No 6071: 09.12.1825 Friday (R)
Sheldrake	7 May 1842	Clew Bay	This 119-ton schooner was built in 1827 and was classed as 'Æ 1 – 41'. She belonged to the port of Dartmouth and the master was Foster. She was en route from Liverpool to Westport when she became stranded.	CSP, 1843, Vol. IX, 36
Speedwell	Jan. 1760	near Newport	This vessel was en route from America with a cargo of flax when she was lost. The captain was Pratt.	Bourke, 1998, 136
T.H Haviland W06888	06/01/1884	Westport, Zone 909, exact location unknown	No description available	Bourke 2000, 105
Thistle W06895	04/03/1832	Westport, Quay near, Zone 909, exact location unknown	No description available	Bourke 2000,106, Lloyds list No. 6724, Tuesday March 13, 1832

Thomas W06896	14/12/1830	Westport Bay, Zone 909, exact location unknown	No description available	Bourke 2000, 105; Lloyds List No. 6596, Tuesday December 21 st 1830
Thomas Richardson W06898	18/12/1842	Achill Head, Zone 909, exact location unknown	No description available	PP 1843, Vol, IX, App 3, 44
Thomas and Rebecca	1835	in Westport Bay	This vessel of Dumfries weighed 91 tons. She was 34 years old when she was wrecked.	Bourke, 1998, 137; CSP, 1836, Vol. XVII, 371
Valiant	21 Nov. 1819	c.30 miles from Westport	This vessel of Aberdovey was en route from Kilrush to Glasgow, under the command of Lewis, when she was lost. One of the crew drowned.	L. L. no. 5443, 30 November 1819
Ulysses W06903	12/01/1808	Newport, Zone 909, exact location unknown	No description available	Larn and Larn 2002, Lloyds List No 4, 219: 12.01.1808 Tuesday (R)
Unknown W06926	Unknown	Achill Sound May, 53 56 10.000N, 55 55 00.000W	No description available	UKHO Wreck Data 1966
Upwey Grange MV W06964	08/08/1940	Achill Head 200 miles W, 54 20 00.000N, 15 28 00.000W	No description available	Hockinf 1969 726-7 BUIS 919- 459
unknown	20 April 1830	Aunasead, Westport	A boat containing nineteen people who had been employed to collect seaweed was upset in a storm off Aunasead, in the bay of Westport. 10 of the crew were drowned.	Freemans Journal, Tue. 20 April 1830, Column Melancholy Accident and loss of life
unknown	18th / 19th century	Poll na Raite	This vessel was under the command of Captain O' Malley, a well known smuggler, and was carrying goods for Newport. The vessel was sunk by the revenue boat Sloopeen Vaughan 12551.	Bourke, 1994, 194
unknown	14 June 1894	Clew Bay	This hooker was en route from Achill to Glasgow with passengers when she was overturned by a gust of wind. Thirtytwo people were drowned. The Gardinia, the Laird line steamer, had been waiting	Bourke, 1994, 190

			to take aboard passengers for its Westport to Glasgow service. The bodies of the victims were taken back to Achill on the new railway.	
unknown	1917 - 1918	near Westport?	This 27-foot steam pinnacle was part of the coastguard station at Ros na Mihil, near Westport. A local man swam to the vessel and released the anchor. He then holed the vessel causing her to sink. The wreck was not found despite searches by two naval vessels.	Bourke, 1998, 137

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APPENDIX 2. TOPOGRAPHICAL FILES

The following files were found in and around Newport, Westport and Clew Bay. These are listed below:

Townland	Finds Description
Newport	Bronze palstave 1933: 570; copper hammer head 1929: 1353
Kilbride	Later Bronze Age hoard
Muckanagh	Wooden bowl 1977: 2173
Derryloughan More	Bog butter with wooden container

*The NMI research section was closed for the month of December. Topographical files included in the Heritage Council Heritage maps database were examined.

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APPENDIX 3. RECORDED SITES AND MONUMENTS

The following townlands were researched:

Achill Island, Achill Beg, Clare Island, Clew Bay, Carraholy, Dooagh, Glen, Keel, Killsallagh, Leckanvy, Louisburgh, Mallaranny, Murrisk, Newport, Old Head, Westport

SMR No.	Class	Townland	ITM Easting	ITM Northing	Irish Grid Easting	Irish Grid Northing
MA065-004-	Church	Beal Feirste	474274	798570	74296	298556
MA085-009002-	Enclosure	Capnagower	471598	786226	71620	286210
MA085-009003-	House - indeterminate date	Capnagower	471778	786226	71800	286210
MA085-009004-	House - indeterminate date	Capnagower	471686	786218	71708	286202
MA085-009005-	Fulachtfia	Capnagower	471449	786246	71470	286230
MA085-009006-	Fulachtfia	Capnagower	471469	786256	71490	286240
MA085-009007-	Fulachtfia	Capnagower	471479	786256	71500	286240
MA085-009008-	Anomalous stone group	Capnagower	471778	786216	71800	286200
MA085-012001-	Ringfort - cashel	Capnagower	471824	786017	71846	286001
MA085-012002-	Ritual site - holy well	Capnagower	471820	786031	71842	286015
MA085-012003-	Altar	Capnagower	471823	786021	71845	286005
MA085-012004-	Clochan	Capnagower	471822	786024	71844	286008
MA085-012005-	Penitential station	Capnagower	471811	786003	71833	285987
MA085-031----	Midden	Capnagower	471384	785407	71405	285390
MA085-046----	Fulachtfia	Capnagower	471801	786048	71823	286032
MA085-048----	Fulachtfia	Capnagower	471710	786058	71732	286042
MA085-049----	Fulachtfia	Capnagower	471701	786025	71723	286009
MA085-050----	Fulachtfia	Capnagower	471629	786006	71651	285990
MA085-051----	Fulachtfia	Capnagower	471739	785987	71761	285971
MA085-052----	Fulachtfia	Capnagower	471754	785963	71776	285947

MA085-053----	Fulachtfia	Capnagower	471759	785984	71781	285968
MA085-054----	Enclosure	Capnagower	471745	785997	71767	285981
MA085-055----	Fulachtfia	Capnagower	471839	785965	71861	285949
MA085-056----	Fulachtfia	Capnagower	471592	785933	71614	285916
MA085-057----	Fulachtfia	Capnagower	471669	786107	71691	286091
MA085-058----	Fulachtfia	Capnagower	471487	786220	71508	286204
MA085-059----	Fulachtfia	Capnagower	471576	786214	71598	286198
MA085-060----	Fulachtfia	Capnagower	471586	786196	71608	286180
MA085-062----	House - indeterminate date	Capnagower	471763	786022	71785	286006
MA085-016001-	Fulachtfia	Glen	470174	784764	70195	284747
MA085-016002-	Fulachtfia	Glen	470155	784752	70176	284735
MA085-016003-	Fulachtfia	Glen	470145	784729	70166	284712
MA085-016004-	Fulachtfia	Glen	470127	784717	70148	284700
MA085-016005-	Fulachtfia	Glen	470168	784793	70189	284776
MA085-017----	Fulachtfia	Glen	470299	784827	70320	284810
MA085-018----	Fulachtfia	Glen	470459	784887	70480	284870
MA085-022----	Promontory fort - coastal	Glen	470990	784675	71011	284658
MA085-023001-	Castle - unclassified	Glen	471474	785115	71495	285098
MA085-023002-	Promontory fort - coastal	Glen	471489	785124	71510	285107
MA085-040----	Burial ground	Glen	470600	785045	70621	285028
MA085-041----	Fulachtfia	Glen	470689	784984	70710	284967
MA085-042----	Fulachtfia	Glen	471168	785204	71189	285187
MA085-043----	Fulachtfia	Glen	470830	785139	70851	285122
MA085-078----	Midden	Glen	471479	785097	71500	285080
MA075-027----	Water mill - unclassified	Maum	470709	786516	70730	286500
MA085-047----	Fulachtfia	Maum	470364	786285	70385	286269
MA075-029----	House - 18th/19th century	Ballytoohy beg	469569	786946	69590	286930
MA075-005001-	Promontory fort - coastal	Ballytoohy more	469986	787971	70007	287955
MA075-005002-	Hut site	Ballytoohy more	469965	787955	69986	287939

MA075-005003-	Hut site	Ballytoohy more	469996	788007	70017	287991
MA075-026----	Standing stone	Ballytoohy more	469879	786896	69900	286880
MA075-028----	Redundant record	Ballytoohy more	0	0	0	0
MA075-030----	Fulachtfia	Ballytoohy more	469499	787476	69520	287460
MA075-031----	Enclosure	Ballytoohy more	470169	786986	70190	286970
MA075-032----	Enclosure	Ballytoohy more	470339	787046	70360	287030
MA075-033----	Fulachtfia	Ballytoohy more	469844	787941	69865	287925
MA075-034----	Mass-rock	Ballytoohy more	469364	787351	69385	287335
MA042-020----	Megalithic tomb - court tomb	Keel east	464560	807312	64580	307300
MA042-021001-	Megalithic tomb - court tomb	Keel east	464939	807597	64959	307585
MA042-021002-	Megalithic structure	Keel east	464801	807571	64821	307559
MA042-021003-	Earthwork	Keel east	464880	807578	64900	307566
MA042-021004-	Megalithic tomb - unclassified	Keel east	464930	807492	64950	307480
MA042-021005-	Enclosure	Keel east	464910	807482	64930	307470
MA042-021006-	Mound	Keel east	464770	807342	64790	307330
MA042-021007-	Stone circle	Keel east	464670	807452	64690	307440
MA042-021008-	Cist	Keel east	464740	807519	64760	307507
MA042-021009-	Cist	Keel east	464756	807600	64776	307588
MA042-021011-	Cist	Keel east	464970	807592	64990	307580
MA042-021012-	Cist	Keel east	464960	807482	64980	307470
MA042-037----	Standing stone	Keel east	462603	806126	62623	306114
MA054-008----	Cairn - unclassified	Keel east	462460	805002	62480	304990
MA054-009----	Structure	Keel east	0	0	0	0
MA054-010----	Enclosure	Keel east	462853	804845	62873	304833
MA054-011----	Redundant record	Keel east	462790	804792	62810	304780
MA054-012----	Road - road/trackway	Keel east	462670	804656	62690	304644
MA054-013----	Children's burial ground	Keel east	463041	804516	63061	304503
MA054-014001-	Midden	Keel east	464038	804800	64058	304788
MA054-014002-	Field system	Keel east	464038	804800	64058	304788
MA054-015001-	Megalithic tomb - unclassified	Keel east	462430	805634	62449	305622

MA054-015002-	Megalithic tomb - unclassified	Keel east	462482	805725	62502	305713
MA054-015003-	Megalithic tomb - unclassified	Keel east	462284	805825	62303	305813
MA054-015004-	Cairn - unclassified	Keel east	462820	805662	62840	305650
MA054-015005-	Cairn - unclassified	Keel east	462594	805718	62614	305706
MA054-015006-	Standing stone	Keel east	462716	805558	62736	305546
MA054-015007-	House - indeterminate date	Keel east	462577	805826	62597	305814
MA054-015008-	Structure	Keel east	462576	805825	62596	305813
MA041-002----	Settlement cluster	Keel west	458879	806372	58898	306360
MA041-003----	Settlement cluster	Keel west	458679	806032	58698	306020
MA053-001----	Booley hut	Keel west	454223	805523	54241	305511
MA053-002----	Burial	Keel west	455792	805112	55810	305100
MA053-003001-	Cross	Keel west	455816	804487	55834	304474
MA053-003002-	Altar	Keel west	455816	804487	55834	304474
MA053-003003-	Settlement cluster	Keel west	455822	804477	55840	304464
MA053-003004-	Field system	Keel west	455817	804433	55835	304420
MA053-003005-	House - indeterminate date	Keel west	455638	804556	55656	304543
MA053-003006-	House - indeterminate date	Keel west	455751	804374	55769	304361
MA053-003007-	House - indeterminate date	Keel west	455817	804433	55835	304420
MA053-003008-	Standing stone	Keel west	455817	804433	55835	304420
MA053-003009-	Ogham stone	Keel west	455531	804431	55549	304418
MA053-004----	House - indeterminate date	Keel west	456127	803690	56145	303677
MA053-005----	House - 18th/19th century	Keel west	458911	804253	58930	304240
MA054-001----	Structure	Keel west	459865	805292	59884	305280
MA054-002----	House - 18th/19th century	Keel west	459612	804370	59631	304357
MA054-024----	House - indeterminate date	Keel west	459743	804418	59762	304405
MA054-025----	House - indeterminate date	Keel west	460003	804661	60022	304649

MA087-025----	Enclosure	Leckanvy	487991	782116	88016	282099
MA087-026----	Ringfort - cashel	Leckanvy	488355	781777	88380	281760
MA087-068----	Mill - unclassified	Leckanvy	488782	782373	88807	282356
MA087-054----	Standing stone	Murrisk demesne	491609	782490	91635	282473
MA087-055----	Standing stone	Murrisk demesne	491638	782491	91664	282474
MA087-056----	Standing stone	Murrisk demesne	491762	782467	91788	282450
MA087-054----	Standing stone	Murrisk demesne	491609	782490	91635	282473
MA068-013----	Enclosure	Newport	497862	793906	97889	293891
MA065-002----	Children's burial ground	Na Sraithã	471586	797641	71607	297627
MA086-012----	Midden	Old Head	483340	782756	83364	282739
MA086-017----	Burnt mound	Old Head	482586	781837	82610	281820
MA086-018----	Midden	Old Head	483338	782525	83362	282508
MA055-016----	Settlement cluster	Poll Raithnã (sweeney)	475243	800007	75265	299994
MA055-018----	Field boundary	Poll Raithnã (sweeney)	474219	800355	74241	300342
MA055-019----	Field boundary	Poll Raithnã (sweeney)	474181	800345	74203	300332
MA055-020----	Field boundary	Poll Raithnã (sweeney)	474177	800353	74199	300340

APPENDIX 4. ARCHAEOLOGICAL EXCAVATIONS

Achill Island, Achill Beg, Clare Island, Clew Bay, Carraholy, Dooagh, Glen, Keel, Killsallagh, Leckanvy, Louisburgh, Mallaranny, Murrisk, Newport, Old Head, Westport

County	Mayo	Site Name	Old Head
SMR No.	SMR:86:12, 86:18	Licence No.	99E0552
Site Type	Monitoring	Description	Monitoring of pipe-laying in the vicinity of two middens did not reveal anything of archaeological significance.
ITM	E 482546m, N 781837m	Latitude/Longitude	53.772863, -9.781837

County	Mayo	Site Name	Clare Island
SMR No.	N/A	Licence No.	04E0346
Site Type	Monitoring	Description	Nothing of archaeological significance has been found so far while monitoring the excavation of the seabed in preparation for the construction of a new pier on the island. Work was postponed in the autumn due to the unreliability of the weather. The project is due to restart in the spring.
ITM	E 468589m, N 785728m	Latitude/Longitude	53.804477, -9.99510

County	Mayo	Site Name	KINNAWONEEN, CLARE ISLAND
SMR No.	N/A	Licence No.	02D048, 02R091
Site Type	Underwater assessment	Description	An assessment took place of the impact of the proposed pier development at Kinnawoneen, Clare Island, on any submerged archaeological heritage. The proposed development will construct a 110m piled harbour wall travelling east from the tip of Kinnawoneen. Associated with this construction will be the placement of rock armour on the exposed exterior and interior landward side of the harbour. Dredging of the interior of the harbour will allow access at all stages of the tide. A desktop survey has shown that the

			<p>development area has been subject to significant human influence, both from landward and seaward fronts, for several centuries. Its proximity to SMR 85:23(01, 02), Granuaile's Castle, combined with the considerable erosion which has taken place in the area, makes this landscape an area of archaeological importance.</p> <p>The inspection undertaken on 14 June revealed that there are no archaeological sites within the development zone.</p> <p>Editor's note: Though carried out in 2002, this summary was received too late for inclusion in the bulletin of that year.</p>
ITM	E 471479m, N 785017m	Latitude/Longitude	53.798806, -9.950959

County	Mayo	Site Name	KINNAWONEEN, CLARE ISLAND
SMR No.	SMR 85:23	Licence No.	04E0346
Site Type	Monitoring	Description	<p>Monitoring of the excavation of the seabed in preparation for the construction of a new pier on Clare Island, Co. Mayo, was carried out in August 2004 (Excavations 2004, No. 1142) and again from May to June 2005. The pier was constructed within the zone of archaeological potential for a tower-house said to have been built by the pirate queen Granuaile, and the possible site of an earlier promontory fort.</p> <p>The excavation works were carried out by a long-reach mechanical excavator using a toothed bucket. A haul road c. 6m wide, constructed from core rock, was built from the landward end of the works</p>

			<p>towards the pier. While sitting on the haul road, the long-reach excavator excavated the toe to the required depth (1.6m below existing bed level) and cast the material towards the structure for later incorporation into the permanent works. The later stages of the excavation were carried out from a barge. The area excavated for the toe measured between 11m and 12m wide by c. 120m long.</p> <p>An overhanging part of the headland upon which the castle was built, c. 5m wide by c. 2m deep, was also removed. The thin layer of topsoil was removed first to reveal bedrock, which was then removed by the mechanical excavator with a toothed bucket. Nothing of archaeological significance was found in the course of the project.</p>
ITM	E 468589m, N 785728m	Latitude/Longitude	53.804477, -9.995108

County	Mayo	Site Name	Glen, Clare Island
SMR No.	N/A	Licence No.	CO27, E2017
Site Type	Testing	Description	<p>Testing of the area of a proposed carpark on Clare Island adjacent to the national monument MA085-023(01), Grania Wael's castle, and MA085-023(02), a possible promontory fort, was carried out on 24 and 25 October 2006. The proposed development area was a section of land situated immediately south-south-west of Grania Wael's Castle just outside its current boundary wall; it measured c. 51m south-west/north-east by c. 23m.</p>

		<p>The site had been levelled off about 25 years ago by its then owner to accommodate three sheds that occupied the site until recently. This levelling involved reducing the original ground level by about 3m along the south-south-west edge of the proposed development area. Local information suggests that there had been a pronounced downhill slope, which extended at least to the middle of the area. The removal of this portion of the hill, which overlooked the proposed carpark area from the south-south-west, created a steep scarp that cut deeply into natural on that edge and removed over half of the original topsoil on a good deal of this area. The clearing of the area 25 years ago has left little of the original ground on this site untouched.</p> <p>The test-trenches, all 2m wide, were laid out as three, set parallel and 6m apart; these first three crossed the main area of the carpark from north-east to south-west. They ranged in length from 25m to 18m, depending on the outline of the carpark area. A fourth, 2m-wide, test-trench crossed a narrow 9m-wide extension to the carpark at the south-west corner; this trench was 27m long. These four trenches were dug by a small mechanical excavator using a toothless bucket.</p> <p>As the spoil from the trenches was deposited it was scattered as a thin layer to allow examination by sifting with</p>
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			shovel and trowel. As the ground was dug up it became obvious that what was being excavated was largely natural sandy gravel and moraine material. A small area of organic beach sand in Trench I indicated where original ground surface survived. No archaeological material was revealed by this testing.
ITM	E 470625m, N 784910m	Latitude/Longitude	53.797634, -9.963867

County	Mayo	Site Name	Capnagower, Clare Island
SMR No.	MA085-050	Licence No.	10E0375
Site Type	Burnt Mound	Description	<p>Pre-development testing was carried out between 20 and 23 September 2010 at a site at Capnagower townland on Clare Island. The proposed development consists of the construction of a hostel, lodge, marine activities centre and reference library with public bar and restaurant, effluent treatment system and all ancillary site works. Testing was required, as six monuments were located within the area. These consisted of five fulachtafiadh, MA085-049-053 and an enclosure, MA085-054. One of the fulachtafiadh was not extant (MA085-051). The proposed development had the potential to adversely impact on only one of the fulachtafiadh (MA085-050).</p> <p>The site was located along the east coast of Clare Island near Kinnacorra Point. It consisted of undulating poor pasture with rock outcrop and was enclosed by drystone walls. A marshy area was located in the north-western half of the site, drained by a stream running through</p>

			<p>its south-east end. The site was subdivided by drystone walls, especially in its south-eastern half, while the remains of former cultivation ridges or 'lazy-beds' were prominent along the north-west end and in the south-eastern half of the site.</p> <p>Testing consisted of the excavation (by machine) of seven trenches located to best cover the development area, especially that portion of the proposed access road which was near MA085-050. The trenches measured 33m, 39.3m, 5.3m, 43.2m, 9.9m, 40.3m and 34.4m long respectively, 1.4-2m wide and 0.1-0.9m deep.</p> <p>Evidence of the burnt mound was revealed in two of the test-trenches excavated. Below the topsoil in the remaining five trenches were orange/grey/brown plastic sandy clay and orange/grey/brown loose sand (natural subsoils). No artefacts were recovered during testing.</p>
ITM	E 471731m, N 785886m	Latitude/Longitude	53.806680, -9.947499

County	Mayo	Site Name	Strake, Clare Island
SMR No.	MA085-013	Licence No.	13E056
Site Type	Possible Ditch	Description	Monitoring of groundworks at a development at St Patrick's National School in Strake townland on Clare Island, County Mayo was carried out on 5 and 10 April 2013. The development consisted of an extension to the school, which is located at Kille in the south-west of the island. Monitoring was necessary

		<p>due to the location of the site within the constraint for ecclesiastical remains (MA085-013) with a graveyard (MA085-013002) 40m to the east and Clare Island Abbey (MA085-013001 and National Monument No. 97), 51m to the east.</p> <p>The existing school building was constructed in the 1880s with an extension added in the 1990s. The location of the proposed extension consisted of an area of grass bisected by the concrete footprint of an outbuilding demolished in the past and bounded to the east and south by concrete footpaths. The excavated area measured 10m east-west by 7m and 0.3-0.8m deep. Below the topsoil and concrete on the surface was modern rubble fill, which contained a number of services, orange/grey loose sand and orange/brown (rust coloured) bedrock.</p> <p>In the western half of the area excavated a possible ditch feature extended north-north-west/south-south-east across the site (NGC 068907 284462). The feature was located 0.5–0.8m below the surface at its north-north-west end and measured 5.2-5.3m long, 1.8-2.4m wide and up to 0.7m deep (not fully excavated). It was filled with dark grey/brown friable silt loam with a moderate amount of small rocks and appeared to be cut into the bedrock. Unfortunately the fill did not contain any datable artefacts or material. The south-south-east end of the possible ditch was disturbed by the existing school building.</p>
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			Given its location and orientation the feature could form part of an ecclesiastical enclosure, although there is no surface evidence for such an enclosure in the vicinity of the monument (MA085-013). Following discussions with National Monuments Service and Mayo County Council it was decided not to excavate the feature as it could safely be preserved <i>in situ</i> .
ITM	E 468887m, N 784476m	Latitude/Longitude	53.793302, -9.990042

County	Mayo	Site Name	CORRAUN
SMR No.	N/A	Licence No.	09E0124
Site Type	No archaeological significance	Description	Testing was carried out of a greenfield site adjacent to a quarry at Corraun, Ballyhaunis. The work was conducted as part of the planning application for the proposed development, which was an extension of the existing sand and gravel extraction pit with all associated site works. Test-trenches were excavated c. 10m apart and were running north-west to south-east with five trenches running parallel at 50m intervals. No subsurface archaeological remains were found during the testing programme.
ITM	E 549388m, N 774984m	Latitude/Longitude	53.722069, -8.766856

County	Mayo	Site Name	Corraun
SMR No.	N/A	Licence No.	16E0186
Site Type	Burnt spread and possible wooden trackway	Description	Fadó Archaeology were commissioned to carry out a programme of archaeological testing at Corraun Co. Mayo on behalf of Archer Consulting Engineers for M.F. Sand Ltd. The proposed development

		<p>work entailed the extension of the quarry by an area of 5.029ha, for the extraction of sand and gravel, together with a programme of reinstatement works. The quarry was located in undulating pasture land characterized by small field systems enclosed by stone walls. Natural drumlin features occurred to the north and north-east of the site. An extensive area of bogland lay to the west of the proposed development area.</p> <p>32 linear test trenches were excavated across the entire development site. The length of the trenches ranged between 8m to 162m. The depth of the trenches ranged from 0.15m to 1m. The stratigraphy in Test Trenches 1, 2, 13-32 consisted of grass sod over topsoil over a substrate consisting of dark orange boulder clay and light greyish yellow clay with frequent deposits of sandy gravel. In the south-western area of the development, where Test Trenches 3-12 were excavated, the stratigraphy consisted of peat overlying light greyish white clay.</p> <p>During the course of the testing in this area archaeological material was noted in Test Trenches 9-12. In Test Trench 9 traces of a burnt spread was found 0.5m below the ground level. The spread consisted of charcoal, ash and fire-cracked stones over an area of approximately 24m north-south x 9m. In Test Trenches 10-12 there were remnants of what may be a possible wooden trackway or togher measuring 7m south-west/north-east by 41m.</p>
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			<p>Several timbers were noted lying in a horizontal position and embedded in the peat substrate, 0.35m below the surface. The largest timber measured 1.2m x 0.2m, while the smallest measured 0.2m x 0.1m. There were also small fragments of twigs and other vegetation occurring along with these larger pieces. There were no traces of tool marks on the exposed timbers.</p> <p>Following consultation with Mr Gerry Walsh, planning archaeologist for Mayo County Council, it was decided that the exposed archaeological material be covered in geotextile material and carefully backfilled under strict archaeological supervision. An exclusion zone of 5m from the archaeological material was set out and a wire and post fence erected to prevent access to this area of the site. It was recommended that no future work take place in this area of the site to prevent any unnecessary disturbance to the subsurface archaeological remains.</p>
ITM	N/A	Latitude/Longitude	53.720916, -8.773805

County	Mayo	Site Name	Dungurrough, Achillbeg
SMR No.	MA065-032(1-3)	Licence No.	08E0515
Site Type	Promontory fort	Description	This licence was one of two taken out to facilitate the taking of phosphate samples from Dun Kilmore (see No. 865

			below) and Dungurrough promontory forts by Johanna Ullrich for a PhD she is pursuing with the Department of Archaeology, UCD. The samples were taken at regular points on a grid over both promontories. Areas of relatively high phosphate content were identified, mainly reflecting the visible earthworks, but others reflecting further subsurface remains. None of the levels located were deemed high enough to indicate definite areas of settlement. The full results of the work will be outlined in Johanna's forthcoming PhD.
ITM	E 470789m, N 793245m	Latitude/Longitude	53.872532, -9.964881

County	Mayo	Site Name	Dun Kilmore, Achillbeg
SMR No.	MA075-001(1-4)	Licence No.	08E0514
Site Type	Promontory fort	Description	This licence was one of two taken out to facilitate the taking of phosphate samples from Dun Kilmore and Dungurrough (see No. 864 above) promontory forts by Johanna Ullrich for a PhD she is pursuing with the Department of Archaeology, UCD. The samples were taken at regular points on a grid over both promontories. Areas of relatively high phosphate content were identified, mainly reflecting the visible earthworks, but others reflecting further subsurface remains. In particular one area of increased phosphate on Dun Kilmore might signify the location of an additional structure, perhaps a watchtower. None of the levels located were deemed high enough to indicate definite areas of settlement. The full results of the work

			will be outlined in Johanna's forthcoming PhD.
ITM	E 470811m, N 792589m	Latitude/Longitude	53.866648, -9.964271

County	Mayo	Site Name	Keem bay, keel west, achill island
SMR No.	MA053-00303	Licence No.	09E0302
Site Type	Deserted village	Description	<p>An excavation was undertaken at a house site within the deserted village settlement at Keem Bay, Achill Island, Co. Mayo. This excavation formed part of the 2009 programme for the Achill Archaeological Field School.</p> <p>The purpose of the excavation was to investigate the deserted village settlement at Keem Bay, to better understand the date of the settlement, the nature of the buildings and whether it was a site of permanent or seasonal occupation.</p> <p>The results of the excavations indicate that the buildings within this settlement are likely to be closely comparable to those found at Carraun Point and also to the beehive huts recorded in early archival photographs taken on the island. The localisation of demolition rubble or collapse material within the interior of the structure investigated indicates that it may have been deliberately demolished at the end of its use.</p> <p>Unfortunately, due to the limitations of the investigation, definitive dating evidence was not obtained, nor was it</p>

			possible to fully establish the nature of the settlement (permanent/seasonal).
ITM	E 455982m, N 804351m	Latitude/Longitude	53.968360, -10.195099

County	Mayo	Site Name	Boycott's House, Keel West
SMR No.	MA053-003	Licence No.	12E0059
Site Type	Archaeological complex	Description	<p>Situated on high ground overlooking Keem Bay at the western end of Achill Island, 'Boycott's House' is a ruined single-storey structure which, according to local tradition, was built by 'Captain' Charles Cunningham Boycott upon his arrival to Achill in 1854. A cursory analysis of the site indicated that the standing L-shaped structure represented the second and third phases of construction, while a rectangular, grass-covered mound adjacent to the end of the second-phase building appeared to represent the first phase of Boycott's House.</p> <p>The Achill Archaeological Field School undertook an excavation on the site of the first-phase structure from March to June 2012 and an 11m x 7m trench revealed the complete ground plan of the building. The first-phase building was a timber-framed structure which rested upon a stone plinth and which was clad externally with corrugated iron – proof of the local tradition that Boycott lived in an 'iron house' when he first came to the island to farm 2,000 acres of rented land in the vicinity of Keem Bay. The timber-framed house appears to have been quickly extended with the construction of the stone-built phases (Phases 2 and 3)</p>

			<p>and the entire building was subsequently abandoned after being consumed in an accidental fire in the late 1860s. A very large artefact assemblage was recovered during the excavation and this included pottery and clay pipe fragments, various metal artefacts and numerous fragments of window and vessel glass, some of the lead and glass fragments showing clear evidence of heat distortion from the fire. A series of internal walls, first thought to represent room divisions, were later recognised as inserted sub-walls which carried the timber floor within the house and which replaced two original cross beams. A concentration of rubble in the centre of the house has been interpreted as a fallen chimneybreast, since many of the stones within this layer rested on-edge, though this interpretation cannot be fully proven.</p>
ITM	E 455650m, N 804556m	Latitude/Longitude	53.970108, -10.200251

County	Mayo	Site Name	Keel East
SMR No.	MA042-021002 & MA042-021003	Licence No.	14E0109
Site Type	Possible prehistoric enclosure	Description	<p>The 'Cromlech Tumulus' site in Keel East, Achill Island, Co Mayo, was partially excavated by the staff and students of Achill Archaeological Field School during the summer of 2014. The site is listed on the Mayo sites and monuments record as 'Megalithic Structure', but its actual nature has been debated since the late 19th century when Wood Martin described it as a "sepulchral complex" and suggested that at least parts of the</p>

		<p>site belonged to the megalithic tradition. Westropp and O’Kelly both described the site as a series of huts, probably of an early medieval date, whilst Pigott and Powell suggested that it was a ruined megalithic tomb with a later burial mound constructed over the western end. De Valéra and Ó Nualláin examined the site as part of the Megalithic Survey of Ireland but did not list the site as being megalithic and suggested it represented a series of post-medieval buildings. Prior to excavation the site was subject to a detailed GPS and a topographic survey, confirming the general layout as described by Pigott and Powell. The site appeared to consist of two distinct elements, a circular mound with a central hollow at the west, and a series of small stone structures at the east. A pre-bog field wall connects the eastern end of the site to the well-known court tomb located about 130m to the east. Excavation in 2014 focused on the western half of the site. Rather than being a distinct circular mound this turned out to be the edge of a large ovoid enclosure defined by an earthen bank with inner and outer dry stone faces and a width of over 2m. The course of the enclosure was not fully traced but it must measure at least 15m by 20m. An entrance was located at the south, defined by two orthostats set into the top of the bank. Inside the enclosed space were a large number of post-holes and pits suggesting a lengthy occupation, although in the area so far examined no</p>
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			<p>building ground plans have been identified. No dateable artefacts were recovered, only a small selection of coarse stone tools, but charcoal samples have been submitted for radiocarbon dating. Two very slight buildings constructed of turf and stone walls were discovered overlying the enclosure bank, the latest of which had created the impression of the circular mound with the central hollow. At this stage the site appears to be an enclosed large scale settlement site overlain by a much smaller scale period of occupation. In addition, a single trench was excavated over the pre-bog wall that connects the 'Cromlech Tumulus' to the court tomb. This proved to be a simple boulder wall around 1m wide, quite different to the large and complicated Bronze Age walls excavated elsewhere on Slievemore. During 2015 excavations will examine more of the interior of the enclosure and the stone foundations visible in the eastern part of the site, and several more stretches of the pre bog wall.</p>
ITM	E 64820m, N 307560m	Latitude/Longitude	53.595880, -10.344023

County	Mayo	Site Name	Keel West
SMR No.	MA053-003003 & MA053-00300	Licence No.	09E0302 Extension
Site Type	Settlement cluster and field system	Description	<p>During July and August 2015 Achill Archaeological Field School undertook a series of excavations within a settlement cluster at Keem Bay, Achill Island (MA053-003003). The largest visible foundation within the settlement, House 3, had originally been the subject of a</p>

		<p>limited excavation directed by Teresa Bolger in 2009. The earlier work had demonstrated that a substantial stone-built foundation survived underneath the turf and, importantly, that intact floor deposits were present. Excavations in 2015 were conducted as an extension to the original license issued in 2009. A large rectangular trench measuring 13m by 7m, with a 0.5m wide cross baulk running through the centre, was placed over the building. The cross baulk was removed towards the end of the excavation, once the intact floor deposits were reached.</p> <p>House 3 proved to be a small sub-rectangular house with neatly constructed dry stone walls. The curved corners incorporated particularly large boulders, presumably placed to reinforce these natural weak points in the building. The house measured 8.75m by 4.7m externally and just 6.66m by 2.8m internally. It was divided into two compartments, separated by a stone-lined cross drain, with a larger living compartment with an open hearth on one side and a smaller compartment on the other which was probably used to house animals. Despite the small size of the house it was arranged in the classic byre style. The upslope end of the building was set into a terrace cut into the hillside and the floor of the downslope end had been built up to provide a level interior. House 3 appears to be a permanently occupied house which conforms to historical accounts of</p>
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		<p>early 19th-century houses on Achill. A total of 291 artefacts were recovered during the 2015 season. The majority of these came from a narrow area between the upslope end of the building and the cut of the terrace on which the building was constructed, an area which was clearly used as a dump. The majority of the artefacts were small pieces of late 18th-century/early 19th-century creamware. The dump was sealed over by a layer of collapse from the building's walls, indicating that the dump was contemporary with the occupation of the house rather than being a later deposit. A fragment of an iron stove door and a very well manufactured Ericsson Wizard stropping handle for sharpening razor blades (patented 1924) were also recovered, but these came from the base of the overlying turf and seem to have been dumped at the site during the early 20th century. Added to the 48 artefacts recovered in 2009 a grand total of 339 artefacts were recovered from this building.</p> <p>A small linear trench measuring 10m by 2m was placed over a series of lazy beds separated by a sunken linear feature located around 60m south of House 3. This showed that the linear feature was a narrow open drain but although 30 finds with a general 19th-century date were recovered from the trench, the finds were not from contexts that could be used to accurately date either the lazy beds or the drain.</p> <p>A small rectangular trench measuring 4m</p>
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			<p>by 3m was placed over the corner of an elongated rectangular foundation defined by a narrow earthen bank located about 85m south east of House 3. The bank was found to be of a simple earthen construction and it seems unlikely that it could have been the foundation of a domestic building, and it was probably an unroofed animal pen although it could have been a crude agricultural building. A massive assemblage of over 1327 finds came from this trench, a mixture of glass and creamware fragments and small heavily corroded iron objects. Unfortunately the vast majority of these finds came from upper layers and are thought to result from the site being used as a dump either during the occupation or subsequent renovation of the adjacent Coastguard Station. The construction date of the enclosure was therefore not established.</p>
ITM	E 455817m, N 804433m	Latitude/Longitude	53.969054, -10.197656

County	Mayo	Site Name	Keel East
SMR No.	MA042-021002 & MA042-021003	Licence No.	14E0109
Site Type	Bronze Age building and medieval huts	Description	<p>The second season at the Cromlech Tumulus site on Slievemore (MA042-021002) concentrated on Quadrant 3 at the north-west of the site, completing the investigation of the western half of the Cromlech Tumulus. The trench investigated the interior and north-western part of the wall of a large oval-shaped Middle Bronze Age building which has previously produced a</p>

		<p>radiocarbon date of 1409 and 1229 BC. The wall of the building was examined in detail and shown to be a complex construction with stone faces retaining an earthen core. The outer wall face consisted of several courses of long narrow boulders whilst the internal wall face consisted of large upright stone slabs on top of which rested several courses of neat dry stone work made out of medium sized stones. The earthen core consisted of thin layers of yellowish brown charcoal-rich soil, suggesting the material had been relocated from elsewhere, possibly a nearby midden deposit. The three elements combined to create a wall 2.4m wide and 0.7m high. The interior of the building contained a dense spread of features. Around the perimeter of the building there was a band of substantial post-holes, with diameters of around 0.4m and depths of between 0.4m and 0.8m. Although not displaying a particularly regular pattern it did seem that two concentric rings were present, and the close spacing between the two rings suggested they had not been used simultaneously. In the central area there was a dense spread of smaller post-holes, stake-holes and shallow pits. The density of features within the central area again suggests a lengthy and complex period of use for the building, rather than the features all being in use simultaneously.</p> <p>An unusually large pit was found close to the northern perimeter of the building, where it had cut through a series of</p>
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			<p>earlier post-holes. A very unusual artefact was recovered from the upper fill of this pit, a small carved stone head made out of a small water-rolled pebble with a quartz core. Two small pieces of plain Bronze Age pottery were recovered from two of the smaller internal features, an extremely rare find for Achill which appears to be essentially aceramic until recent times. The rest of the finds assemblage consisted of small lithic flakes and simple cores, hammerstones and rounded pebbles of unknown purpose. This material is very reminiscent of the finds assemblages from the two Middle Bronze Age houses previously excavated by Achill Archaeological Field School on Slievemore, which are located about 2km to the west. An unexpected discovery during the 2015 season was to find that a substantial pre-bog field wall was connected to the north-west corner of the site, constructed over the outer edge of the oval building's wall. The course of this wall is difficult to follow as it has been damaged by a small stream, but it appears to continue northwards from the site for some distance. Work is due to continue in this eastern part of this site during 2016.</p>
ITM	E 64820m, N 307560m	Latitude/Longitude	49.287639, -15.360848

County	Mayo	Site Name	Keel East, Achill Island
SMR No.	MA042-021002	Licence No.	14E0109
Site Type	Bronze Age building and post-medieval huts	Description	During May and June 2016 a third season

		<p>of work was undertaken at the site of the Cromlech Tumulus (MA042-021002) and the Danish Ditch pre-bog field wall (MA042-021003). Work in 2014 and 2015 had completed four large trenches over the western side of the Cromlech Tumulus site, showing it to be a large Middle Bronze Age building overlain by a number of much smaller late medieval and post-medieval buildings. Two narrow trenches had also been excavated over the Danish Ditch pre-bog field wall establishing it to be a reasonably narrow field wall that survived to no great height.</p> <p>During 2016 work at the Cromlech Tumulus site concentrated on a single large trench, Quadrant 5, which was excavated over the eastern part of the site, and measured 10m by 5.5m. This area of the site contained the only standing building remains, a small section of a dry stone hut with a portion of a corbelled roof that was still intact. Dating this building and determining its function was one of the main goals of the season's work. Another main goal was to identify the eastern wall of the large Middle Bronze Age building. It was also suspected that the Danish Ditch pre-bog field wall connected to the Cromlech Tumulus site in this area and a third goal was therefore to identify and record this feature.</p> <p>Removal of the turf and overlying peat deposits revealed a dense spread of soil and small and medium size stones, overlain by a number of small slab-like</p>
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		<p>boulders which are thought to have resulted from the collapse of the roof of the stone-walled hut. A substantial area of rubble was located immediately east and south of the stone-walled hut, which is thought to have derived from the collapse of the walls of the eastern end of the structure. The interior of the small stone hut was cleared of rubble revealing a simple earth floor with a small hearth close to the western end of the building. The building was found to have been very small with dimensions of just 2.8m east-west by 2.4m. It is suspected to be either a small post-medieval booley house or other type of simple shelter.</p> <p>The walls of the Middle Bronze Age building were identified along the eastern side of the northern part of the trench, as had been expected. However an unexpected discovery was a long curving entrance passage that was lined with stone but unpaved, and which ran for over 5m across the northern end of the trench.</p> <p>The pre-bog field wall was identified coming into the middle of the trench from the east. It had a width of 1.4m and five courses of stonework survived <i>in situ</i>. An exploratory cutting was made through the deposit of soil and stone that covered the trench and this was found to be up to 0.7m deep and to conceal a substantial stone wall that may be part of a small circular building built against the southern side of the entrance of the Middle Bronze Age building; this wall overlay a large stone-filled pit of</p>
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			<p>currently unknown date and purpose.</p> <p>Work on the site during 2017 will concentrate on removing the rest of this soil and stone deposit and examining any other features it conceals.</p> <p>A trench measuring 10m by 2m was excavated over the Danish Ditch pre-bog field wall. Unexpectedly it revealed a pair of parallel east-west aligned field walls separated by a 4.5m wide terrace. It therefore appears that the Danish Ditch may actually be a formally laid out road, potentially making this is a very important finding. In the centre of the terrace a stone-built oval hearth was discovered, separating the road into two channels and potentially indicating that the road could be illuminated at night.</p>
ITM	E 64820m, N 307560m	Latitude/Longitude	49.287639, -15.360848

County	Mayo	Site Name	Keem, Keel West
SMR No.	MA053-003003	Licence No.	09E0302
Site Type	Early 19th-century house, settlement cluster	Description	<p>In June and July 2016 Achill Archaeological Field School (AAFS) carried out an excavation at the settlement cluster of Keem (MA053 – 003003), on the western-most tip of Achill Island, Co. Mayo. The excavation, directed by Stuart Rathbone and Eve Campbell, formed part of a broader programme of research by AAFS into the Keem Bay landscape, and was the fourth season of excavation in Keem (Rathbone 2015; Sherlock 2012; Bolger 2009). The first-edition OS map (1838) shows 40 buildings at the Keem settlement cluster. The village was demolished in the mid-</p>

		<p>19th century, possibly by Charles Boycott. Today the low, grassed-over remains of about 14 buildings can be made out. While morphologically the settlement bears many hallmarks of a permanent rundale house cluster, ethnographic material collected in the 1940s also associates it with booleying or transhumance (Ó Moghráin and Ó Duilearga 1943, 169).</p> <p>In 2009 Bolger began excavating Building 3, the largest footprint in the settlement cluster. Rathbone completed the excavation of Building 3 in 2015. In 2016 AAFS decided to return to Keem to investigate Building 4, located immediately west of Building 3. Prior to excavation the site appeared as a small grassed-over oval bank with occasional stones protruding through the surface. The bank defined a building that seemed to measure approximately 8m by 4m, a little smaller than Building 3 which measured 9.5m by 4.5m. A trench measuring 10m by 6m was set up over Building 4, divided into 4 separate quadrants by a pair of L-shaped baulks measuring 0.5m wide. The site was dug by hand and backfilled when the excavation was finished.</p> <p>Building 4 was oblong in plan, both internally and externally, with straight side walls and distinctive rounded corners. Internally it measured 2.5–2.7m wide (north-east/south-west), by 5.6m long. It was slightly trapezoidal in shape with the south-east end being 0.2m wider than the north-west end. The</p>
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		<p>entrance (0.7m wide and 1.2m deep) was located slightly off centre, in the south-east end of the south-west long wall of the building, c.2m from the internal face of the south-east end wall. The building had mass walls of earth and sod retained by inner and outer stone walls. The north-west end was c.1m wide, while the north-east and south-west walls were between 1.1m and 1.2m wide. The width of the south-east wall could not be discerned as its outer face was completely robbed-out. The structure was built directly on the old topsoil. At the north-west, upslope end of the building the old topsoil had been completely scarpd away by a shallow cut to create a level platform for the building. Excess topsoil was removed to the downslope south-east end of the site to raise it up.</p> <p>The building had a number of internal features including a drain running diagonally north-south across the north-west third towards the entrance. It was 1.8m long and 0.4m wide. The drain was composed of a shallow cut filled with at least two layers of tightly packed flat stones. A single side stone was found on the west side of the feature, held in place by a deposit of very firm orangey-brown sandy silt that served as packing material for the feature. The top level of stones in the drain would have been flush with the floor of the building. The drain's outlet appears to have simply been the entrance of the building. There was a curious short stone setting, 1.2m by</p>
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		<p>0.3m, perpendicular to the entrance. It was a single course deep and abutted the internal retaining wall. The feature is difficult to interpret. It is in a similar position to the cross-drain in Building 3, but there is no evidence for it having been part of such a feature. Nor is there evidence for it having traversed the width of the building. It seems unlikely to have formed a dry-stone internal dividing wall. One possibility is that it formed a low seating bench, perhaps associated with Heath 3 (see below).</p> <p>The occupation of the building was represented by a number of organic-rich accretions of soil, the laying down of at least two episodes of stony threshold material inside the entrance, and the making and use of three distinct hearths. External features, including an area of rough cobbling and a drainage gully, are also dated to this phase.</p> <p>The building had three hearths. All three were located in the central third of the building. Hearths 1 and 3 were bowl-shaped, cut into the soft old topsoil layer while Hearth 2 had a much more shallow cut and lay directly on the very hard B horizon subsoil. Hearths 1 and 2 were flush with the long north-east wall of the building, and were located roughly opposite the door. Hearth 3, probably the earliest, lay in the middle of the floor, just under 1m north-east of the entrance to the building. The pattern of use in all three hearths bears similarities. In pit-cut hearths 1 and 3, there is evidence for use (ash and charcoal layers) followed by</p>
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		<p>what seems to be deliberate backfilling. Analogously, Hearth 2 has a use layer, followed by a layer of backfilling.</p> <p>A number of contexts exterior to the building can also be assigned to this phase, including a shallow gully that ran around the north-west side of the building. To the north-east of the building, flush with the external retaining wall, was a layer of rough cobbling that consisted of a layer of sub-rounded cobbles in a matrix of mid brown sandy-silt. The context was truncated by the excavation trench from 2015 for Building 3, and presumably extended north-east across the narrow area between Building 3 and Building 4 (c.2m wide).</p> <p>There is some evidence for pre-structure activity to the south-east of the building. Three irregular pockets of charcoal-rich material were encountered downslope of the building on its south-east side.</p> <p>A total of 74 archaeological objects were unearthed during the excavation. Just over 40% of the assemblage comprised glass, most of it green or brown historic bottle glass. Pottery was the next largest category, making up about 23% of the assemblage (17 items). Creamwares, pearlwares and earthenwares dominated, indicating a late-18th or early-19th century date. Diagnostic pieces include a large (broken) piece of a shell-edged pearlware dish, black-glazed Buckley-type ware and a fragment of slip-trailed earthenware, possibly from Staffordshire.</p> <p>Fourteen stone objects were also</p>
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			<p>collected. These mostly comprised fragments of slate, which is not found in the local geology. Some of this slate may be roofing material derived from buildings in the vicinity. Amethyst was also retained. Keem was the site of an amethyst quarry that was well known from at least the early 19th century. Contemporary travel writers reported buying amethyst crystals from local children. The amethyst must have been deliberately collected and is therefore deemed to be of archaeological significance. A single worked stone object was found; it is an oblong piece of schist with a partially drilled hole through one end. It may be a half-made weight.</p> <p>Three fragments of very badly corroded iron were found. It is not possible to determine what they were.</p> <p>Two of the most interesting finds from the site are glass beads, one black and one white. The beads were both recovered from the north corner of the building. They may well have been part of a single object, perhaps a rosary.</p> <p>A sheep/goat skull was found in the later collapse layers, as were a number of animal teeth.</p>
ITM	E 455842m, N 804457m	Latitude/Longitude	53.969128, -10.196821

County	Mayo	Site Name	Keel East, Achill Island
SMR No.	MA042-021002-; MA042-021003	Licence No.	14E0109
Site Type	Bronze age building and fulachtfia	Description	<p>Introduction</p> <p>During July and August 2017 Achill Archaeological Field School carried out a fourth and final season at the Cromlech</p>

		<p>Tumulus (MA042-021002) and the Danish Ditch pre-bog field wall (MA042-021003), on Slievemore mountain, Keel East townland, Achill Island. The first three seasons at the site were directed by Stuart Rathbone, and the fourth season by Eve Campbell.</p> <p>During 2016 work a large 10m by 5.5m trench (Quadrant 5) orientated north-south was excavated over the eastern side of the site. This trench could not be fully excavated due to time constraints and so the picture that emerged was necessarily partial. At its uppermost levels the trench contained a small post-medieval <i>clochán</i> or corbelled stone hut (2.8m east-west by 2.4m). Rathbone identified part of the walls of the Middle Bronze Age (MBA) building in the north-east corner of the trench, and a feature that he termed an 'entrance passage' curving for 5m along the northern edge of the cutting. To the east of the trench he found part of a stone wall forming a 'small circular building built against the southern side of the entrance of the Middle Bronze Age building'. Finally, he uncovered part of a pre-bog field wall coming into the middle of the trench from the east. After the excavation was finished the trench was covered in terram and the sod was replaced.</p> <p>FulachtFia</p> <p>In 2017 Quadrant 5 was reopened in a bid to fully resolve the area. Work began by excavating the overlying layer of soil and stone rubble concealing the structural remains. Once this was</p>
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		<p>removed the curving eastern wall of the MBA structure became visible along the western side of the trench. The wall was composed of a bank of earth and stone. It soon became apparent that what Rathbone had identified as the MBA building's 'entrance passage' and the 'small circular building' were both structural elements of a stone-lined fulachtfia. The feature comprised a stone-lined trough orientated north-west/south-east and measuring 1.8m long by c. 1m wide and 0.45m deep. It was built in the corner between the junction of the eastern wall of the MBA building and the pre-bog field wall, and thus post-dates both features. A stone ledge or platform flanked the southern side of the trough and the entire feature was surrounded by a low stone wall/kerb of variable height. This wall or kerb served as a revetment for the burnt mound that formed part of the fulachtfia. The mound arced around the trough and was most pronounced on its northern and eastern sides. To the south the burnt mound respected the earlier pre-bog field wall. It comprised a deposit of heat-shattered and degraded stone mixed with charcoal and silty sediment up to 0.5m deep. Significant quantities of water-rolled beach cobbles were present in the deposit; most of these were pink sandstone ultimately derived from the Corraun Peninsula. No bone was found in the burnt mound, but a deposit of ceramics thought to represent a single coarse Bronze Age vessel was found in</p>
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		<p>the deposit to the north of the trough. After the final use of the fulachtfia it was deliberately filled in with large stones and the trough was paved with rough slabs to create a level surface. A large sherd of coarse prehistoric pottery found above this layer indicates that this 'closing' of the monument occurred in antiquity.</p> <p>Lithics Scatter</p> <p>A sondage through the burnt mound in the north-east corner of the trench showed that it overlay a layer containing dense concentrations of worked chert, flint and quartz, with occasional sherds of prehistoric pottery, and moderate concentrations of charcoal. This layer was found to extend along the entire eastern edge of the trench at its lowest levels. A line of four stake-holes were associated with this layer in the southern half of the trench. The dense concentration of lithics, including chips of debitage and partially worked beach-rolled flints suggest that this may constitute a knapping area. A small chert leaf-shaped arrow head and a chert hollow scraper retrieved from this layer suggest a Neolithic date.</p> <p>Other notable finds from the 2017 season include a stone spindle whorl recovered from the upper layers in the southern half of the site.</p> <p>The 'Danish Ditch'</p> <p>During the last two weeks of the excavation a 12m by 2m trench was excavated across the path of the 'Danish Ditch', the pre-bog field wall running</p>
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			<p>between the MBA building and a nearby Neolithic court tomb. This was the fourth slot trench excavated over the features since we began our project here in 2014. Previous work has tracked the path of the monument and our 2016 trench was especially significant, revealing that the feature comprises a pair of parallel banks. Our 2017 trench was empty, despite being carefully lined up with the known line of the monument. While analysis is ongoing it seems that it may have been robbed out in antiquity—perhaps related to the construction of the <i>fulachtfia</i>.</p>
ITM	E 464801m, N 807571m	Latitude/Longitude	53.999659, -10.062213

County	Mayo	Site Name	Dooagh Beach
SMR No.	N/A	Licence No.	14E0125
Site Type	Early Modern animal burial ground	Description	<p>Heavy storms at the beginning of 2014 cleared away a deep shingle bank on Dooagh Beach, Achill Island, Co Mayo, exposing a large peat bed. Examination of this peat bed revealed that a large number of rectangular pits had been cut into its upper surface. In some instances it could be seen that some of the pits contained large mammal bones but it was not clear from surface examination if the pits contained complete animal burials or if they simply contained assortments of articulated or semi-articulated animal bones in a manner consistent with waste disposal.</p> <p>The site was subject to a detailed GPS and photographic survey which established that a total of 26 pits were</p>

		<p>visible in the area of freshly exposed peat, although it later became clear that further pits were present to the immediate east of the site where the same peat formation was exposed in a vertical cliff face from which large animal bones could be seen protruding in at least 20 separate locations.</p> <p>In May 2014 two of the most intact looking pits within the cluster were excavated by Achill Archaeological Field School. Pit 22 was found to measure 2.67m by 1.02m with a maximum depth of 0.49m. It contained an intact pony skeleton with its legs folded up underneath its body in a fashion thought to indicate that the animal had been killed at the burial site. Pit 26 was found to measure 2.03m by 1.63m, with a maximum depth of 0.67m. It contained an intact pony skeleton with its legs fully extended out from the body, necessitating the excavation of a much larger pit. It is thought therefore that the animal died elsewhere and had been brought to the beach for burial after rigor mortis had set in.</p> <p>Examination of the two pony skeletons suggested that both animals had a hard working life and had been fed a nutritionally poor diet. The pony in Pit 22 is estimated to have had a withers height of between 13 and 15 hands, whilst the pony in Pit 26 is estimated to have a withers height of between 12 and 14 hands. These heights lie comfortably within the height range for Connemara ponies and it is known that a large</p>
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			<p>number of Connemara ponies were imported to Achill in the late 19th century.</p> <p>The horseshoes associated with the two excavated ponies indicated that the animals date from the middle of the 19th century or later. Local accounts indicate that animals were being buried in this location up until the 1950s. The site seems to have been used for the burial of large animal carcasses in a community that was too far removed from an abattoir to make removal of animals feasible.</p> <p>In July 2014 the shingle bank that had previously protected the site was re-established by Mayo County Council engineers, during work to remedy storm damage in advance of the Achill Half Marathon. It is thought that the site is currently reasonably well protected.</p>
ITM	E 460535m, N 804916m	Latitude/Longitude	53.974686, -10.126023

County	Mayo	Site Name	MURRISK DEMESNE
SMR No.	SMR 87:46	Licence No.	97E0007
Site Type	N/A	Description	Test-trenching in advance of development yielded no features, deposits or finds of archaeological significance.
ITM	E 491334m, N 782510m	Latitude/Longitude	53.780814, -9.648830

County	Mayo	Site Name	NEWPORT
SMR No.	SMR 67:37, 67:61	Licence No.	04D078
Site Type	Intertidal assessment	Description	An impact assessment was undertaken of a proposed sewerage scheme in Newport. The proposed development consists of the upgrading of the

			<p>sewerage scheme at Newport, with the construction of a new pumping station wastewater treatment plant, while two different options for outfall pipes were proposed. Some of the proposed development is located within the intertidal zone. A number of sites are located within or adjacent to the intertidal zones proposed in the present development. These include SMR 67:37, an enclosure and possible hut site in Lisduff; 67:61, a possible enclosure in Rosmore; and 68:13, an enclosure in Newport, which is no longer extant. The proposed development would particularly impact on the former two sites. No new archaeological features or artefacts were identified during the walkover of the relevant areas of the intertidal zone.</p>
ITM	E 498339m, N 793982m	Latitude/Longitude	53.885276, -9.546368

County	Mayo	Site Name	NEWPORT ROAD REALIGNMENT SCHEME
SMR No.	N/A	Licence No.	05E0699
Site Type	Testing	Description	<p>The Newport road realignment scheme involves the construction of 3km of new road immediately west of Castlebar, Co. Mayo. Groundworks associated with this scheme are being monitored. Two burnt spreads were found during monitoring and these were excavated under licence 05E1056 (see No. 1119 above). Excavation is ongoing at the site of a windmill (SMR 78:10) at Drumshinnagh, under licence 05E0733 (see No. 1118 above). Work on this scheme is ongoing.</p>

ITM	E 511244m, N 799206m	Latitude/Longitude	53.934581, -9.351646
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County	Mayo	Site Name	Castlebar to Newport Road Realignment Scheme
SMR No.	N/A	Licence No.	05E0699
Site Type	Testing	Description	Three kilometres of new road were constructed as part of the R311, Castlebar to Newport road realignment scheme, in Co. Mayo. During the monitoring of groundworks associated with this scheme (Excavations 2005, No. 1129) six fulachtafiadh were found. Two of these (Drumshinnagh I and II) were excavated under licence 05E1056 (Excavations 2005, No. 1119). Two more (Drumshinnagh III and IV) were excavated under licence 06E1018 (see No. 1449 below). Two further fulachtafiadh, one located in Derrycoosh townland and a second in Drumshinnagh townland, at the limits of the land acquisition line, were preserved in situ. In addition, excavation was undertaken at the site of a recorded windmill (MA078-010) in Drumshinnagh townland under licence 05E0733 (see Excavations 2005, No. 1118, and No. 1448 below).
ITM	E 511244m, N 799206m	Latitude/Longitude	53.934581, -9.351646

County	Mayo	Site Name	N59 Rossow Bends Roads Scheme
SMR No.	N/A	Licence No.	13E0250

Site Type	Fulachtafiadh, burnt	Description	
	spreads and pits		<p>Pre-development testing was carried out on the N59 Rossow Bends Roads Scheme: Part of the overall N59 Westport-Mallaranny Road Realignment Project. Test excavations were carried out in green field areas that are within the footprint of the proposed N59 Rossow Bends Section and also within seventeen proposed areas for the recovery of material excavated during the construction of the road that is unsuitable for reuse.</p> <p>The stratigraphy of the test areas ranged from light, well-drained sandy topsoil on the large drumlin within the footprint of the road, to pockets of low-lying waterlogged peat, also within the footprint of the road and in the Proposed Recovery areas.</p> <p>A total of ten archaeological sites were identified by these test excavations. All were identified within the Proposed Recovery Areas. Three of these sites are located in peripheral areas and preservation <i>in situ</i> is proposed. Disturbed material from a fourth site in Carrowbeg (Fergus) was identified, however there is no predicted impact on this site.</p> <p>A burnt spread (Drumard 1), four <i>fulachtafiadh</i> (Drumard 2-4 and Keeloges 1) and two conjoined pits (Keeloges 2) were identified in Drumard and Keeloges townlands. As these sites will be directly impacted on by the development, a programme of excavation is scheduled for 2014.</p>

		<p>Drumard Townland (Recovery Area No. 28)</p> <p>Four archaeological sites are located in this Recovery Area adjacent to the current N59, 3km north of Westport, Co. Mayo. Sites Drumard 1-4 are located in a wet, peaty hollow between a modern house, which is on raised ground, and the existing main road.</p> <p>Drumard 1, burnt spread (NGR: 498091 787722), consists of a deposit of burnt stone and charcoal, roughly circular in plan with a diameter of 4m and a thickness of 0.1m where cut at the northern edge and has a maximum thickness of 0.2m. The deposit consists of angular heat-fractured stone in a charcoal-rich matrix. The stones are generally light grey sandstone c. 0.08m in diameter with frequent smaller stones and grit and occasional larger stones up to 0.2m in diameter. A broken flint disc scraper was recovered from the top of the stone deposit. This site is scheduled for excavation in 2014 under licence 14E0031.</p> <p>Drumard 2, <i>fulachtfiadh</i> (NGR: 498269 787601), is located near the southern field boundary and appears to be an undisturbed site. The mound, consisting of heat-fractured stone in a charcoal-rich peaty matrix, is oval in plan measuring 6m by 8m with a maximum thickness of 0.6m. There is a large hollow in its northern half (1.7m by 3.2m) creating a classic crescent-shaped mound. The hollow may overlie an intact trough. This site is scheduled for excavation in 2014</p>
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		<p>under licence 14E0032.</p> <p>Drumard 3, <i>fulachtfiadh</i> (NGR: 498218 787629), is located to the south of the centre of the field on peat, adjacent to a large land drain. The mound, consisting of heat-fractured stone in a charcoal-rich peaty matrix, is roughly circular in plan with a diameter of 9m and a maximum thickness of 0.7m. The northern extremity of the mound was cut by the land drain. This site is scheduled for excavation in 2014 under licence 14E0033.</p> <p>Drumard 4, <i>fulachtfiadh</i> (NGR 498188 787624), is located on the subsoil, 10m north of Drumard 3, at a depth of c. 0.7m from the surface overlain by peat. It consists of a 0.1m thick (max.) spread of burnt stone and charcoal which is circular in plan with a diameter of 5m. An isolated wood feature was located adjacent to this spread c. 0.35m higher in the peat and 2m to the north. It consists of a number of poorly preserved horizontal roundwoods placed parallel to each other possibly forming a wooden platform or trough base. At least one of these timbers was cut and retains distinctive chop-marks. The surviving feature measures 1.8m north-south by 0.9m. This site is scheduled for excavation in 2014 under licence 14E0034.</p> <p>Keeloges (ED Newport East), (Recovery Area No. 12)</p> <p>Two archaeological sites are located in a Recovery Area adjacent to the current N59, 5km west of Newport. Sites</p>
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		<p>Keeloges 1-2 are located on relatively dry ground within a field which is predominantly comprised of wet peat.</p> <p>Keeloges 1, <i>fulachtfiadh</i> (NGR: 494766 795749), is located on the eastern end of low glacial ridge immediately adjacent to lower lying marshy ground. The <i>in situ</i> remains of a mound of burnt stone and charcoal rest directly on firm, relatively dry boulder clay with the eastern side (c. 2m) resting on low-lying marshy ground, The mound is roughly oval in plan measuring 21m north-south by 12m. The <i>in situ</i> mound material is generally less than 0.2m thick reaching up to 0.6m thick where the natural subsoil slopes down to the south-east. The western side of the site is delimited by a substantial drain and the overlying topsoil contained frequent displaced burnt stones and modern pottery. This site is scheduled for excavation in 2014 under licence 14E0035.</p> <p>Keeloges 2, two pits/hearths abutting each other (NGR: 494794 795792), are located in a low-lying wet area adjacent to Keeloges 1. They consist of two roughly circular charcoal-rich deposits c. 0.8m in diameter, resting on or cut into the natural, stony boulder-clay. This site is scheduled for excavation in 2014 under licence 14E0036.</p> <p>Four sites, to be preserved <i>in situ</i>, were identified in three recovery areas in Carrowsallagh, Conrea and Carrowbeg (Fergus) townlands.</p>
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		<p>Carrowsallagh I: <i>fulachtfiadh</i> (NGR: 4993181 796077)</p> <p>A <i>fulachtfiadh</i> mound was identified in the south-east adjacent to and 10m from the river. This mound was located on sandy subsoil adjacent to the river. Its upper level was exposed for a length of 10.5m east-west and a 12m perpendicular trench was opened across the centre of the mound to establish its north-south dimensions which were 6.7m. The <i>in situ</i> remains consist of a low compact mound of burnt stone and charcoal, c. 0.4m (max.) above the surrounding subsoil falling away gradually from its centre. The upper levels of this mound are likely to have been disturbed by subsequent agriculture as heat-fractured stones were spread through the topsoil around and adjacent to the mound. The overlying sod and topsoil reached a maximum thickness of 0.4m and there were no surface indications of the underlying mound.</p> <p>Carrowsallagh II: possible <i>fulachtfiadh</i> (NGR: 493100 796105)</p> <p>Remains of a possible <i>fulachtfiadh</i> were located 70m to the west of Carrowsallagh I, also adjacent to the river which runs along the southern boundary of Recovery Area 7. This site consists of a low mound of burnt stone and fragments of charcoal, 4.5m north-south by 2.5m with a maximum thickness of 0.4m. Two patches of burning and a loose deposit of</p>
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			<p>burnt stone occur adjacent to this mound.</p> <p>Conrea I: burnt spread (NGR: 498342 787456)</p> <p>A burnt spread was identified in the northern corner of this Recovery Area. It had a maximum diameter of 3.5m, occurred at a depth of 0.2m and was at least 0.1m thick forming a low mound and rested on the natural subsoil. This feature continued beyond the limit of excavation to the north-east. Further burnt stone was identified in the adjacent drain 7.5m to the north-east. This burnt spread may be the remains of a <i>fulachtfiadh</i> and it has been proposed for preservation <i>in situ</i>.</p> <p>Carrowbeg (Fergus) I: disturbed burnt spread (NGR: 492700 796344)</p> <p>Disturbed burnt stone similar to <i>fulachtfiadh</i> mound material was identified in the west of the area but no <i>in situ</i> remains were identified. This is indicative of a <i>fulachtfiadh</i> within or near the area which has been disturbed or destroyed. Topsoil was removed from this disturbed area prior to its acquisition by Mayo County Council and there is no predicted further archaeological impact.</p>
ITM	E 498392m, N 790675m	Latitude/Longitude	53.855584, -9.544470

County	Mayo	Site Name	Keeloges 1, Newport
SMR No.	N/A	Licence No.	14E0035
Site Type	Late Neolithic - Middle Bronze Age	Description	Keeloges 1 consisted of two Late Neolithic/Copper Age burnt spreads (004) and (005) and a trough (007). A Middle Bronze Age trough (006) and the remnants of an undated former timber

			<p>platform (014) were also present. The final evaluation of the findings of the excavation indicates that the <i>fulachtfiadh</i> at Keeloges 1 most likely represents two phases of activity dating to the Late Neolithic/Copper Age and the Middle Bronze Age respectively. A fragment of willow charcoal taken from burnt spread material (005) returned a Late Neolithic/Copper Age date of 2456 – 2204 cal BC (2σ) (UBA-26942); a fragment of alder charcoal taken from burnt spread material (004) returned a Late Neolithic/Copper Age date of 2435 - 2142 cal BC (2σ) (UBA-26943). A fragment of alder charcoal taken from the fill (010) of the trough (006) returned a Middle Bronze Age date (1608 – 1436 cal BC (2σ) (UBA-26944). The excavation was undertaken between 5 and 16 May 2014 in advance of the construction of the N59 Rossow Bends Scheme, Co. Mayo, which extends from Deerpark East townland located to the north of Westport, to Murrevagh townland to east of Mulranny village.</p>
ITM	E 494766m, N 795749m	Latitude/Longitude	53.541583, -9.364693

County	Mayo	Site Name	Keeloges 2, Newport
SMR No.	N/A	Licence No.	14E0036
Site Type	Early/Middle Neolithic	Description	Keeloges 2 consisted of two spreads (004) and (005) of burnt mound material commonly associated with fulachtafiadh. One phase of activity was identified. While usually associated with the Bronze Age, radiocarbon dating of ash charcoal from one of the spreads returned an

			<p>Early/Middle Neolithic date. An oak charcoal fragment taken from one of the spreads of burnt mound material (004) returned an Early/Middle Neolithic date of 3637 – 3382 cal BC (2σ) (26945). The excavation was undertaken on 14 May 2014 in advance of the construction of the N59 Rossow Bends Scheme, Co. Mayo, which extends from Deerpark East townland located to the north of Westport, to Murrevagh townland to east of Mulranny Village.</p>
ITM	E 494794m, N 795792m	Latitude/Longitude	53.542994, -9.363213

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