

Historic Environment Division

Guidance for Peatland Restoration and the Historic Environment in Northern Ireland

June 2026



Historic Environment Division's Aim

“Helping communities to enjoy and realise the value of our historic environment”

We do this by:

- Recording, protecting, conserving, advising, promoting and enhancing its value
- Utilising and growing our specialist knowledge and expertise in collaboration with a wide range of groups and individuals
- Contributing to the Executive's objectives as laid out in the Programme for Government

Our historic environment provides authentic and attractive places which increase our pride, character and identity, lead to improved wellbeing and community engagement, and to prosperity through tourism, investment, skills, regeneration and creativity. It is a precious and finite resource available to present generations, and with appropriate management, to future generations.



This document provides guidance on the protection of the historic environment in peatland restoration. It should be read in conjunction with associated guidance

documents, which can be obtained from the Department of Communities website:
www.communities-ni.gov.uk

1 Introduction

Historic Environment Division (HED) within the Department for Communities is responsible for safeguarding Northern Ireland's historic environment, from archaeological sites and monuments to historic landscapes and buried remains. This guidance supports everyone involved in peatland restoration to understand how restoration activities can affect heritage assets and how these impacts should be assessed, avoided, minimised, or mitigated. It outlines the key principles and processes needed to ensure that peatland restoration—an important component of climate action and environmental recovery—also protects and enhances archaeological and cultural heritage.

This document is intended for all restorers of peatlands, including private landowners, councils, environmental organisations, and landscape partnerships. It provides high-level guidance and does not replace site-specific advice from HED, which should be sought at the earliest opportunity. Because peatlands contain both known and as-yet undiscovered archaeological features, and because restoration projects vary widely in scale and sensitivity, early engagement with appropriately qualified heritage professionals and with HED is essential. Additional technical guidance for archaeologists is provided in **Appendix 2**. A glossary of terms is provided in **Appendix 3**.



Copney stone circles, State Care site, Co. Tyrone.

2 Background

The Northern Ireland Peatland Strategy to 2040¹ sets out the overarching framework for peatland restoration, including commitments on climate action, biodiversity, water quality, and heritage protection. This guidance aligns with that framework and sets out how heritage considerations should be embedded into restoration works from the outset.

In addition to the Peatland Strategy, the International Union for the Conservation of Nature UK Peatland Code² stipulates that if a peatland restoration project is to be Peatland Code validated, then it must engage with the historic environment. Many government funding streams will also stipulate that a peatland restoration project requires consideration and management with the historic environment, including the production of a **Peatland-specific Archaeological**

Impact Assessment (see **Appendix 1**).

In many cases, peatland restoration projects will not have a significant adverse impact upon the historic environment and should have a positive impact upon buried archaeological remains. However, there remains the risk that peatland restoration works may cause inadvertent harm to both designated and undesignated heritage assets, including those not yet identified. Evidence from individual case studies across Great Britain and Ireland highlights that failure to consider heritage assets in peatland restoration can result in damage to archaeological remains.

This guidance sets out the mechanism for ensuring such impacts are properly assessed and mitigated.

3 Key Principles

Peat covers up to 25% of the total land surface of Northern Ireland: that is c.250,000 hectares. Healthy peatlands are hugely important, not just for carbon storage but also for the management of hydrology in preventing floods, supporting biodiversity, the quality of our drinking water, as well as providing recreational opportunities and a record of past environment and human activity. However, about 85% of our peat is considered degraded or in an unfavourable condition. This means that rather than acting as a carbon sink, degraded peat soils are net emitters of carbon. Peat holds more than half of our terrestrial carbon

(1 hectare of peat holds four times the carbon of 1 hectare of rainforest) and is therefore crucial to tackling climate change.

Peatland restoration is part of the strategy to help deliver net zero greenhouse gas emissions by 2050 (**The Climate Change Act (Northern Ireland) 2022**). The Climate Change Committee has advised that land-use change, and nature-based solutions (such as afforestation, biomass production, and peatland restoration) should be a significant element of a holistic strategy to deliver the set target of net zero.

¹ Northern Ireland Peatland Strategy to 2040

² The Peatland Code is the certification standard for carbon-funded peatland restoration in the UK. It is developed and managed by the International Union for Conservation of Nature IUCN, the peatland industry and carbon market experts. **Peatland Code | IUCN UK Peatland Programme**

Peatlands in Northern Ireland contain many of our finest prehistoric archaeological monuments, and large numbers of significant archaeological sites and artefacts have been identified during past peat-cutting works. However, most of our peatland areas have not been subject to systematic archaeological

survey. Archaeological remains are a valuable source of information about the past. In studying, understanding and debating the past, modern societies learn about their present and influence their future. Our unique archaeological remains are of public benefit, and the following key principles are of vital importance:



Before and after drain blocking © Ulster Wildlife Trust.

- **Preservation in situ:** peatlands are vital archives of archaeological and environmental information. Restoration must aim to preserve heritage features where they lie, avoiding disturbance whenever possible.
- **Risk mitigation:** restoration activities may inadvertently damage buried archaeological remains. Early identification, assessment and monitoring are essential.
- **Opportunity for discovery:** peatland restoration presents a unique opportunity to identify and enhance both designated and undesignated heritage assets, many of which may be undocumented.
- **Whole-environment approach:** restoration projects must consider the landscape as a whole, including industrial, agricultural and intangible cultural heritage.



Broghderg megalithic tomb, Co. Tyrone.

4 Assessment and Planning the Project

Considering the historic environment in a peatland restoration project is very much an iterative and dynamic process. It begins with an assessment of the known historic environment and an assessment of the potential for unknown heritage assets. This forms the beginning of the Peatland-specific Heritage Impact Assessment which is submitted to HED for review (see Appendix 1). The study area shall include the area of restoration as well as any borrow pits / donor sites and access routes. It may also incorporate the wider landscape if fluctuations in water tables are likely to have an effect beyond the restoration area.

It is imperative that appropriately qualified and competent archaeologists and heritage professionals using recognised standards and guidance are engaged early in the project. The chosen archaeological consultant should have demonstrable experience in peatland or wetland archaeology, as this is a specialised environment with unique challenges. This will be particularly important if archaeological excavation is required, as a prospective licensee may be asked to demonstrate an appropriate level of experience and expertise in working in similar environments in advance of an excavation licence being granted. Early engagement with HED is also advised to provide additional advice and to ensure that the

most efficient approaches to the archaeological assessment process and mitigation development are followed.

This stage establishes a baseline understanding of the historic environment within the project area and ensures that restoration proposals are designed with appropriate safeguards in place.

- **Desk-based assessment:** existing records, including but not limited to, the HED map viewer (**Historic Environment map viewer | Department for Communities**, Sites and Monuments Record, old Ordnance Survey maps, Ordnance Survey Memoirs; aerial photographs) will be reviewed. Particular attention will also be given to scheduled and State Care sites, and to Areas of Significant Archaeological Interest (available on the HED map viewer): these are landscapes designated through the Local Development Plans and are of regional importance in Northern Ireland due to their distinctive historic landscape character and landscape-scale heritage value.

If there are any scheduled monuments within the restoration area, HED's Scheduled Monuments Team must be contacted as soon as possible to discuss suitable mitigation and to process Scheduled Monument Consent, where required. **These sites are protected under the Historic Monuments and Objects (Northern Ireland) Order 1995 and any unauthorized works to them or within the associated scheduled area could result in prosecution.**

As Northern Ireland's peatlands have not been comprehensively surveyed for heritage assets, it is imperative that aerial photography is examined. Heritage features are often more visible via cropmarks or with reduced vegetation cover during dry spells. Therefore, aerial photography from multiple years should be examined. The HED Map Viewer³ should be used, along with other sources e.g. Google Earth and World Imagery Wayback (arcgis.com).

LiDAR has the potential to record historic environment features with varying levels of survival, including those with very slight earthwork remains. It can reveal features that would not otherwise be seen, including those obscured by vegetation. However, its effectiveness for identifying heritage assets depends largely on the ability of the user to interpret the data effectively. Correct resolution is key (at least 1m), as is the ability to apply some basic enhancement techniques. It is best to interpret LiDAR alongside historic and modern aerial photographs, as interpreting potential features is often made easier by comparing different sources. As part of the Peatland-specific Heritage Impact Assessment you, or your archaeological consultant, should include examination of any available LiDAR imagery, and any potential historic environment features should be mapped to allow for further investigation.⁴

- **Archaeological survey:** once the initial desk-based assessment is complete, there may be localities within the restoration that contain, or have the potential to contain, heritage assets. These areas should be field walked to help define the existence

³ Historic Environment map viewer | Department for Communities

⁴ At the time of writing in 2026 much of Northern Ireland has been flown for LiDAR and is being processed by DAERA. Please check with DAERA if LiDAR is available for your restoration area.

and extent of these features. Peatlands are home to protected animals and plants (**Wildlife (Northern Ireland) Order 1985**). Archaeologists should ensure that protected species are not disturbed during surveys and should be familiar with any associated species restrictions or required mitigation measures. Survey work undertaken during the bird-breeding season (noting that timing varies across species) must be carried out with particular care. If surveyors encounter breeding birds or cause disturbance, they should immediately move away and avoid any further disruption. Surveys should also be scheduled for times of year when physical conditions are suitable—for example, avoiding periods when dense bracken growth makes fieldwork difficult. Field walking for restoration works also creates a valuable opportunity to note any indications of previously unknown heritage features, such as standing stones, stone alignments, cairns, rock art, and even megalithic tombs.

Other relevant field survey techniques can be used to gain a better understanding of the historic environment if the scope of the restoration project permits e.g. gouge or auger surveys; drone surveys; borehole sampling; geophysical surveys (especially GPR surveys). Please contact HED in advance to arrange any required Consents/

licences⁵. Surveys should be proportionate to the size of the site and to the benefits of restoring it. They should show the nature and extent of archaeology to a high enough resolution to inform peatland restoration. You do not need to collect information for historic environment research alone.

Particular attention should be given to known features:

- Stone monuments, alignments.
- Trackways, field systems, and upland huts.
- Townland boundaries.
- Springs (often marked on Ordnance Survey maps these are likely to have been a focus for past human activity).
- **Palaeoenvironmental analysis:** sampling of peat for palaeoenvironmental evidence may also be considered. Environmental sampling can provide evidence for past environments, showing previous habitats and species, and explain long-term environmental change, as well as the effects of changes in management practices through time. By identifying the types of plants and mosses which were historically present at the site, it will be possible to species match restoration plans, and these are more likely to be successful. While worthwhile, this can be costly, however.

5 Types of Archaeological Remains in Peatlands

During the Bronze Age (c.2500–700 BC) the combination of a wetter climate and deforestation led to rapid peat growth across many parts of Northern Ireland. This covered

and preserved many archaeological sites and artefacts which means that there are heritage assets **below**, **within**, and **above** the peat.

5 Please see: **Guidance for Conducting Licensed Archaeological Excavations in Northern Ireland**

Peatlands are among the richest environments for preserving archaeological material due to their waterlogged, anaerobic conditions. The following types of remains are commonly found:

- **Prehistoric megalithic monuments:** such as stone circles, cairns, megalithic tombs, and ceremonial sites (e.g. Beaghmore stone circles, Co. Tyrone). These stone monuments can often be small, for example, many of the stones that make up stone circles in Northern Ireland are under 30cm in height.
- **Artefacts:** such as gold ornaments, bronze and iron weapons, and flint tools. Peatlands were seen as important, liminal places, especially in prehistory, and many archaeological artefacts were deliberately deposited in bogs. These were highly valuable commodities and not lightly discarded; they most likely represent some form of ritual offering carried out in these liminal places.
- **Organic artefacts:** for example, leather, textiles, wooden tools, logboats, and butter which was often placed inside a wooden container. These organic artefacts are preserved due to lack of oxygen within the peat environment, meaning that these artefacts can survive for thousands of years.
- **Human remains:** for example, naturally mummified bodies (“bog bodies”) have been found from several bogs in Ireland, including in Bellaghy, Co. Londonderry/ Derry in 2023. These bodies were often associated with ritual practices and many date to the Iron Age (700 BC–AD 400).
- **Settlement evidence:** extensive settlements have been found within peatlands including crannogs (partially or entirely artificially created island usually with some form of habitation) and timber dwellings. One such example is Drumclay, Co. Fermanagh, where the remains of over 30 houses were recorded, representing occupation spanning AD 700–1700. Settlement evidence can often have minimal indicators which turn out to be more extensive when investigated, such as a few pieces of worked timber protruding from the ground which represent indicators of more extensive archaeological activity.
- **Trackways:** prehistoric inhabitants used brushwood and upright timbers to construct wooden trackways and paths which formed networks of safe passage through the bogs. Remains of these trackways are still being uncovered.
- **Field systems and boundaries:** comprising ancient field walls sometimes covered in grass and peat, and townland boundaries which can resemble large drains within peatlands. Some field walls can date back to prehistory, while some townland boundaries can be several hundreds of years old. Particular attention should be paid to where townland boundaries converge in bogs, as there is a significant chance of archaeological deposition in these areas.
- **Industrial heritage:** the remains of peat extraction, mining, spoil heaps, and related infrastructure form an important record of industrial activity within our peatlands. Archaeological evidence for ore mines, open-cast workings, mineral railways, quarries, and kilns is prevalent in particular areas.

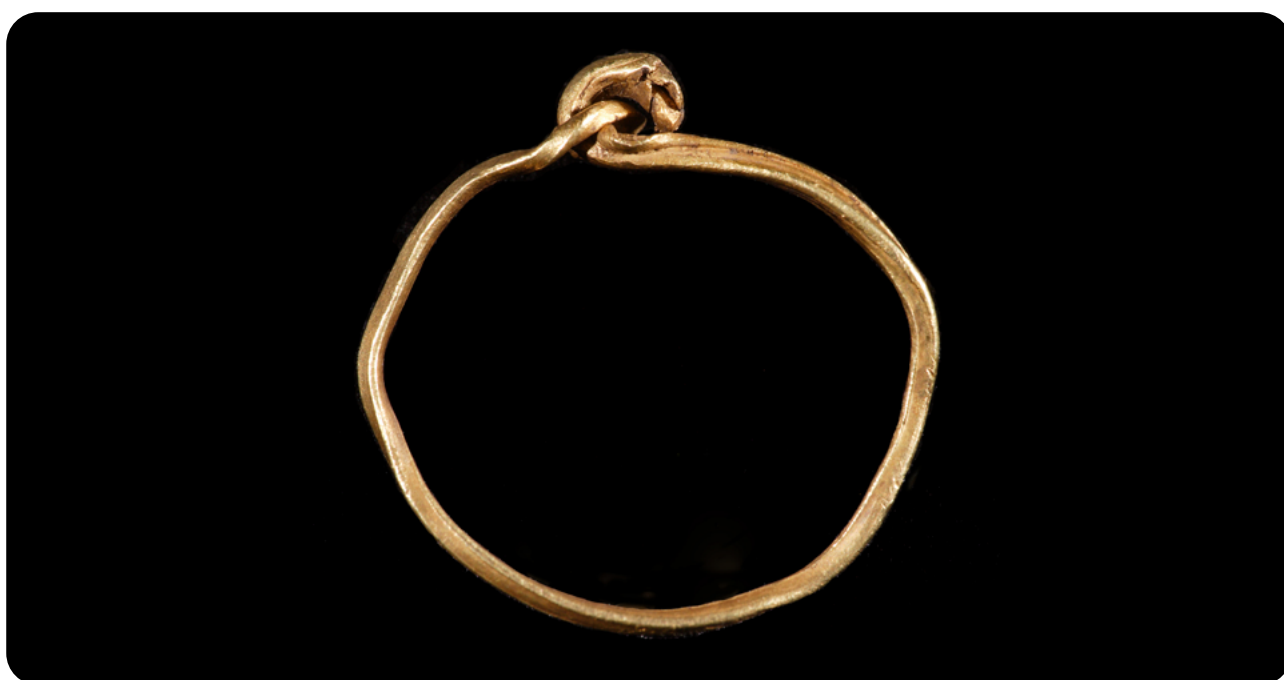
- **Vernacular heritage:** remnants of medieval and post-medieval farming comprise important heritage assets in peatlands. These include booleying huts and upland settlements which are often covered by grass and other vegetation. This includes the history of peat cutting itself, the

archaeological evidence for which is still apparent in many places.

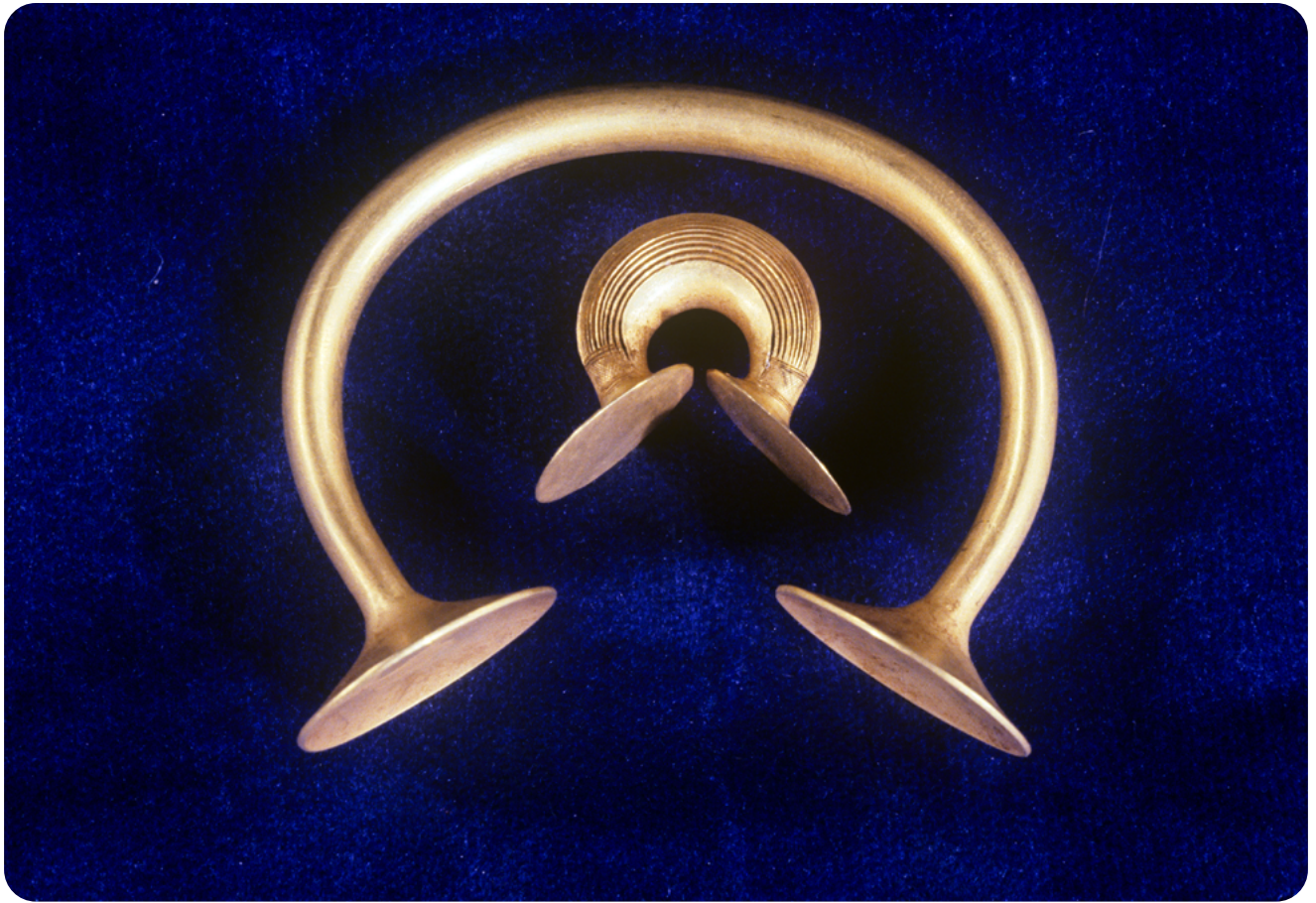
- **Environmental evidence:** the conditions within peatlands provide an excellent arena for the preservation of pollen, seeds, tephra (volcanic particles), and other indicators of past climate and vegetation.



Remains of a megalithic tomb at Craigban, Co. Antrim.



Gold ring found during the excavations at Drumclay crannog, Co. Fermanagh.



Gold dress fasteners from Killymoon, Co. Tyrone.



Bog butter and its associated wooden vessel © National Museum Ireland.



Log boat from Crevenish being lifted for conservation in 1975, Co. Fermanagh.



Excavation of settlement at Drumclay crannog, Co. Fermanagh.



Worked wood and uprights: wood preserves exceptionally well in the anaerobic conditions, Drumclay, Co. Fermanagh.



Wooden stakes protruding from a section at Drumclay crannog, Co. Fermanagh.



Partial remains of a trackway running through a bog in Garvaghullion, Co. Tyrone.



Carved wooden figure found in Lettersheedony bog, Co. Derry.

These remains may be visible at the surface or buried beneath several metres of peat and can be vulnerable to damage if restoration activities are not carefully managed. Where peatlands have dried, or are in the process of drying out, these archaeological remains are likely to have been badly affected. Well-managed peatland restoration, therefore, can help preserve these elements of the historic environment.

6 Specific Considerations

There are other specific historic environment considerations that need to be addressed during restoration development and implementation. These include:

- **Peat depth:** the potential impact of restoration works varies according to peat depth. Certain types of archaeological remains, such as flint scatters, are often concentrated at the interface between peat and the underlying mineral soils. In some peatlands, extensive peat cutting, milling or erosion has removed the upper, more recent peat deposits, leaving older peat layers closer to the surface. These deeper, earlier peat deposits are more likely to contain archaeologically significant material and are therefore more vulnerable to disturbance. Where possible, restoration designs should employ shallow or low-impact interventions to avoid disturbing these archaeologically sensitive layers.
- **Waterlogged preservation:** peat preserves organic material (e.g. leather, textiles, wooden tools) and human remains. Drying or degrading peat can irreversibly damage these. Restoration should aim to re-wet peatlands without disturbing layers that protect organic archaeological remains.
- **Industrial and agricultural heritage:** restoration works should respect the heritage of peat cutting, mining and farming in upland areas. Features such as spoil heaps, field walls, huts and quarries may have historical significance. All restoration works should avoid removing stones from field walls or obscuring boundaries, **especially** townland boundaries. Machinery should not cross such features, and mats

should be used if this is unavoidable.

Where townland boundaries are within the restoration area these should be dammed in a way that retains their steep sides and leaves them legible within the landscape.

- **Intangible heritage:** restoration is unlikely to affect intangible heritage directly. However, cultural landscapes and local traditions linked to the land (e.g. folklore) should be documented and preserved when possible. Placename evidence⁶ should be considered as this may indicate previously unrecorded historic features: for example:

- **Móin:** bog.
- **Móin an Chatha:** bog of the battle.
- **Móin na nIonadh:** bog of wonders.
- **Móin na bhFeart:** bog of the groves/graves.
- **Seisceann Siúil:** the walking bog.
- **Tóchar:** Causeway, path or roadway.



Vernacular landscape with booley huts in Torglass, Co. Antrim.

- **Setting:** consideration shall be given to the potential impact of peatland restoration works upon the setting of historic environment features. This is particularly true of:

- State Care and scheduled monuments.
- Areas of Special Archaeological Interest.
- Listed Buildings.
- Historic Parks, Gardens and Demesnes of Special Historic Interest.

In most cases, peatland restoration works will not have an adverse impact upon setting; however, some aspects may. For example, planting swathes of willow in certain areas may block or alter important views to and from a site, and may change the historic integrity of a site, or its visual amenity. Another example might be the re-wetting of large-scale areas creating large pools or ponds: this may have an adverse impact upon the setting of some historic environment features.

- **Battle sites:** known battle sites are also shown on the HED map viewer. Depending on the nature of the battle site, there may be potential for encountering associated archaeological remains such as human or animal remains, weapons, evidence for encampments / sieges etc.

⁶ PlacenamesNI



Railway used from the early 1900s for peat collection in Mullenakill North, Co. Armagh now an industrial heritage site.



An area of slumped ground is the remains of an entrance to a bauxite mine, Tobernagee, Co. Antrim.

7 Best Practices for Restoration

It is important to consider the best practices and techniques for the restoration project depending on the **presence, type, and extent** of any archaeological remains or potential for remains identified through the desk-based and on-site surveys. Different parts of peatlands may have a different archaeological potential. The margins—and former margins—of bogs may have a higher potential, especially regarding the potential for the ends of trackways. Restoration works should avoid negative impact on historic features. Negative impacts can be caused by a range of activities undertaken during peatland restoration, such as:

- Vegetation removal or planting.
- Machine access.
- Ground disturbance.
- Excavation.
- Altering soil chemistry (e.g. liming).
- Dumping.
- Altering water levels on fragile or dried-out archaeology.
- Encouraging woody or deep-rooted vegetation.

There are two main approaches to counter these potential negative impacts: avoidance or mitigation.

- **Avoidance:** design restoration works to steer clear of known heritage sites. If the heritage assets cannot benefit directly from peatland restoration, use exclusion zones (e.g. 10m for undesignated sites; 20m

designated sites) and buffer areas where appropriate and mark on GIS and with hazard tape in the field.

- Consult your historic environment maps when you plan where works will take place.
- If appropriate, mark sensitive areas with exclusion zones of an appropriate size (this is site specific but approximately e.g. 10m for undesignated sites; 20m for designated sites) and ensure contractors are aware of these. These should be marked on GIS and with hazard tape in the field.
- Any permitted works taking place within sensitive zones should be under licensed archaeological supervision⁷, and where the site is designated, under Scheduled Monument Consent.
- Locate invasive features such as bunds or borrow pits away from historic environment features where possible.
- Avoid crossing historic environment features to access the site.
- Avoid storing materials or vehicles on historic environment features.
- Use temporary fencing or other demarcations where you have been alerted to very fragile sites.
- Ensure contractors are aware of what signs may indicate the presence of archaeology and when to stop work and seek additional expert advice.
- Use GPS-enabled machinery to help contractors avoid features during work, along with maps and other demarcations.

⁷ Guidance for Conducting Licensed Archaeological Excavations in Northern Ireland

- **Mitigation:** Where impacts on the historic environment cannot be fully avoided, restoration works should be designed to mitigate impacts in a way that contributes positively to the management and understanding of heritage assets. Mitigation should be proportionate, practical, and integrated into restoration design wherever possible, and must be agreed with HED. Mitigation may include recording, excavation, or relocation of features. Early design decisions will often reduce or remove the need for more intrusive mitigation measures.

Mitigation measures may include:

- **Alternative restoration methods** with lower impacts: e.g. blocking grips with another material rather than digging peat from borrow pits; revetting hagged areas rather than reprofiling them; using coir or wool logs.
- **Archaeological monitoring (watching briefs)** during ground disturbance to identify, record and protect previously unknown features by suitably qualified and licensed archaeological personnel. Damage to historic environment features may have further repercussions, such as impacting farm or grant payments, and unauthorized works to scheduled monuments may leave you liable to prosecution.
- **Targeted survey or recording** of features prior to works where limited disturbance is unavoidable.
- **Selective artefact recovery** where erosion or restoration works would otherwise result in loss.
- **Small-scale archaeological excavation**, where justified, to recover information from areas that cannot be

preserved in situ.

- **Large-scale archaeological excavation**, where justified, to recover information from areas that cannot be preserved in situ. This is anticipated in very occasional circumstances only.
- **Palaeoenvironmental sampling**, where appropriate, to improve understanding of past landscapes and inform restoration design.
- **Use matting** to prevent damage to buried features such as townland boundaries, stone walls, or buried structures.

Such measures can enhance understanding of peatland archaeology, contribute to regional knowledge, and support better long-term management of heritage assets. There is a balance to be achieved between restoring hydrology, attaining the best possible results from restoration, and protecting the historic environment.

Careful consideration should be given to the types and weights of vehicles used. Evidence from completed peatland restoration projects has demonstrated that compaction via wheeled 4x4 vehicular access appears irreversible. Low ground pressure excavators (below 3psi to avoid damaging buried features) with surface tracks (less damaging than mesh tracks) should be used. Designated refueling points should not be on historic features.



Use of coir logs for peatland restoration © Ulster Wildlife Trust. Coir logs can be used in areas to reduce impact.

Legal and Practical Considerations:

Mitigation may require:

- Archaeological licences for intrusive works.
- Scheduled Monument Consent, where works take place within scheduled areas.
- Additional time and cost, including post-excavation analysis and reporting.

All mitigation works and associated costs remain the responsibility of the peatland restorer. Project programmes should therefore include appropriate contingencies for archaeological input.

8 Opportunities for Enhancement

In addition to helping preserve heritage assets through the increase and stabilisation of water levels, restoration projects also provide other opportunities to make a positive contribution to the historic environment by:

- Revealing and interpreting new sites.
- Supporting educational and community engagement.
- Protecting heritage sites at risk from erosion.
- Enhancing landscape character.

There are also opportunities to improve the condition of known historic environment features:

- Restoration works can stop or repair erosion, thereby helping to preserve known historic features.
- Restoration works can restore water tables, thereby helping to preserve below-ground waterlogged historic features. This helps address heritage at risk with a principal vulnerability of dewatering.
- Restoration works provide the opportunity to remove woody or deep-rooted vegetation from known historic features to avoid root damage.



Eroded desire line on cairn where peatland restoration opportunities could help repair and protect, Co. Antrim.

9 Reporting and Compliance

Once the Peatland-specific Heritage Impact Assessment is complete (including the results of any field surveys; any proposals for palaeoenvironmental works; proposals for avoidance, minimizing and mitigating impacts upon historic environment features) it should be submitted to HED for comment (please email to: scheduling@communities-ni-gov.uk).

HED understands that restoration works are fluid and can change rapidly depending on the conditions on the ground. Close working relationships are therefore imperative to a successful peatland restoration project. There should be regular contact between the project partners, the contractors, your archaeological consultant, and HED.

Any queries should be directed to your archaeological consultant or to HED.

A pre-commencement meeting for the peatland restoration works should be held by the restorer with contractors and include a visit to any historic environment features to confirm buffer zones and how the sites will be protected. A check must also be made to ensure that they understand the maps, where the features are, and the contingency plans if suspected archaeological material is encountered.

If archaeological material is encountered during restoration works, then the following processes must be followed.

- **Legal obligations:**

- Archaeological artefacts must be reported to National Museums NI within 14 days (Article 42, Historic Monuments and Archaeological Objects (Northern Ireland) Order 1995)

(treasure@nationalmuseumsni.org).

There is a broad definition of what constitutes an archaeological object in Article 2(2) of the Order, so if there is any doubt, a report should be made. <http://www.legislation.gov.uk/nisi/1995/1625/article/42>

- Certain types of archaeological object may be considered Treasure under the Treasure Act 1996 and its amending legislation. National Museums NI are the body who take the lead where potential treasure is discovered (**The Treasure Act | National Museums NI**) and, in the event of potential treasure being discovered, a report must be made to National Museums NI (treasure@nationalmuseumsni.org) in accordance with the legislation. See: **Guidance for Conducting Licensed Archaeological Excavations in Northern Ireland**
- Human remains must be left in situ and untouched, covered and reported immediately to PSNI (call 101) and HED (excavationsandreports@communities-ni.gov.uk). It is also good practice to inform the landowner and/or client who has commissioned the work.
- **Good practice:** ensure all staff on site

10 Conclusion

Peatland restoration is central to tackling climate change and biodiversity loss. When planned and delivered with care and consideration of the historic environment, it also safeguards and celebrates Northern Ireland's rich cultural heritage. Restoration

are briefed on procedures for unexpected discoveries of archaeological finds (toolbox talk and handout available from HED).

If finds occur, follow the **STOP-PROTECT-REPORT** protocol:

- Stop works immediately in the affected area.
- Protect the find in situ.
- Send photos of suspected archaeology to your archaeological contractor and directly to HED, email scheduling@communities-ni.gov.uk.
- If human remains are suspected, contact **PSNI (Call 101)** and HED (excavationsandreports@communities-ni.gov.uk) at once.
- Agree next steps (e.g. preservation in situ, recovery, redesign of works) before resuming work.

Any unexpected discoveries of archaeological finds may require further archaeological evaluation, excavation and post-excavation works. All costs incurred by such chance discoveries remain the responsibility of the peatland restorer.

teams must embed heritage awareness at every stage of their work, leaving a legacy of both environmental recovery and cultural stewardship.

11 Contact Details and Useful Links

Northern Ireland Peatland Strategy to 2040

Peatland Collaborative Network - NI Environment Link

Peatlands Restoration - Bord Na Mona

IUCN UK Peatland Programme

Peatland Restoration and the Historic Environment in Scotland

Peatland Restoration and the Historic Environment in England

Peatland Restoration in Wales

Peatlands: The race to protect NI's valuable ecosystems - BBC News

Waterlogged Wood: Guidelines

Technique of the Week (carboncentre.org)

Natural England Recognising Archaeology During Peatland Restoration – YouTube Video

HED

For any queries relating to the historic environment in peatland restoration in general, scheduled monuments and Scheduled

Monument Consent, and for Peatland-specific Heritage Impact Assessment review, please email the Scheduled Monument Management Team:

HED general enquiries: **028 9081 9226**

Email: **scheduling@communities-ni.gov.uk**

For any queries relating to an archaeological licence application or general excavation enquiries, please contact the Excavation Licensing Team:

HED general enquiries: **028 9081 9226**

Email: **ExcavationsandReports@communities-ni.gov.uk**

For any queries relating to the Historic Environment Record of Northern Ireland, and the map viewer, please contact the HERoNI Team:

General enquiries: **028 9056 9701**

Email: **HERoNI@communities-ni.gov.uk**

National Museums NI

Email: **treasure@nationalmuseumsni.org**

Practical tip boxes:

Tip: avoid borrow pits in archaeologically sensitive areas.

Tip: stones in unusual patterns (alignments, circles, stacks) may indicate archaeological significance, even if small.

Tip: always check the **Historic Environment map viewer | Department for Communities** before survey.

Tip: a Peatland-specific Heritage Impact Assessment template is available from HED.

Tip: training and toolbox talks are available from HED (**scheduling@communities-ni.gov.uk**) and also from **Peatland Collaborative Network - NI Environment Link**

Appendix 1: Peatland-specific Heritage Impact Assessment

Restoration projects may require a Peatland-specific Heritage Impact Assessment (PHIA) to meet the conditions of their funding requirements. It is best practice to produce a PHIA even if one is not specifically required and these should be undertaken by a suitably qualified professional using recognised national standards and guidance. The PHIA will assess how proposed restoration works may affect the historic environment and is to be submitted to Historic Environment Division (HED) for review.

While peatland restoration generally helps protect buried archaeological features by reducing peat loss, there is a need to carefully identify and manage potential impacts on heritage assets. As most peatlands in Northern Ireland have not been subject to systematic archaeological survey, locating and assessing heritage features requires a staged approach.

See also: Appendix 2 provides professional guidance for archaeologists preparing or reviewing a PHIA and advising on restoration techniques.



Excavating Beaghmore stone circles, Co. Tyrone, in 1940s. Note the depth of peat and how some of the stones appear above the surface but most of the stones lie beneath the surface.

1 Desk-based Assessment

- The PHIA shall include a desk-based assessment of known heritage assets recorded in the Northern Ireland Sites and Monuments Record (Sites and Monuments Record | Department for Communities) and assess the wider archaeological potential of the restoration area. Existing records (e.g. the HED map viewer (Historic Environment map viewer | Department for Communities), old Ordnance Survey maps, Ordnance Survey Memoirs; aerial photographs from multiple years; LiDAR; place-name evidence) shall be reviewed.
- In addition to known archaeological sites the assessment should consider:
 - Scheduled monuments.
 - Listed buildings.
 - Defence heritage.
 - Registered parks, gardens and demesnes of special historic interest.
 - Maritime sites.
 - Battle sites.
 - Areas of Significant Archaeological Interest.
- The assessment **should focus on the nature and extent of features** rather than detailed analysis.
- The entire restoration area—including donor sites, access routes, working areas and a 20m buffer—shall be examined.
- For help interpreting peatland features and deposits, **refer to Appendix 2 (Section 2 Why Peatlands Matter for Archaeology)**.

2 Scheduled Monuments

- If any scheduled monuments fall within the restoration area, you must contact **HED's Scheduled Monuments Management Team (scheduling@communities-ni.gov.uk)**.
- **No unauthorized works are permitted** to or within scheduled areas under the **Historic Monuments and Objects (Northern Ireland) Order 1995**. Breaches are subject to prosecution.
- HED will work with you to develop suitable mitigation and, where necessary, issue Scheduled Monument Consent for agreed works.

3 Marine Sites

- If any part of the restoration site lies below the **mean high-water mark**, you must check with DAERA whether a marine licence is required (**MarineLicensingTeam@daera-ni.gov.uk**).

4 Field Survey

- Following desk-based work, areas with known or high potential for heritage assets should be subject to field survey (e.g. field walking, walkover survey).
- Conduct surveys with care during the bird-breeding season (noting that timing varies across species); if breeding birds are encountered or disturbed, surveyors must move away. Archaeologists should ensure that protected species (**Wildlife (Northern Ireland) Order 1985**) are not disturbed during surveys and should be familiar with any associated species restrictions or required mitigation measures.
- Schedule surveys for times when physical conditions are suitable (e.g., avoiding periods of dense bracken).
- Particular attention should be given to surface features such as:
 - Stone monuments, alignments, circles, or unusual arrangements.
 - Trackways, field systems, and upland huts.
 - Townland boundaries.
 - Earthworks, banks or boundaries.
 - Exposed timbers, peat cuttings, or erosion scars.
 - Springs (often marked on Ordnance Survey maps these are likely to have been a focus for past human activity).
- If potential new heritage assets are identified, you must notify HED and/or your contracted archaeologist immediately. **Appendix 2 (Section 5: Contingency for Unexpected Discoveries)** sets out on-site response procedures.



Pre-bog landscape at Tullybrick, Co. Tyrone: field walls, stone structures, possible megalithic tombs and cairns all lie beneath and within the peat in a large, scheduled area. A cairn is marked out with sticks.

5 Structure of the Peatland-specific Heritage Impact Assessment (PHIA)

The PHIA must include the following sections:

- 1. Front piece:** executive summary; author's name, qualifications, professional memberships of the author; date and version number.
- 2. Restoration Area:** clear mapping of the proposed works, including access, donor sites and buffers.
- 3. Heritage Assets:** brief description and significance of known assets (including townland boundaries), supported by cartographic, aerial, palaeoenvironmental, placement, and intangible heritage evidence along with an analysis of setting. There are many pollen records already in existence which be used in the desk top study and help inform mitigation strategies.
- 4. Characterization and Potential:** statement of the archaeological and cultural heritage potential of the site.
- 5. Survey Results:** findings from field walking, LiDAR, geotechnical or other relevant surveys.
- 6. Integrated Proposals:** restoration planning that incorporates archaeological and heritage considerations.
- 7. Impact Assessment:** description of positive and negative effects of the restoration on heritage assets (including access routes, donor sites, and adjacent areas).
- 8. Recommendations:** measures to avoid, minimise or mitigate impacts (e.g. buffer zones, alternative restoration techniques, professional monitoring). Advice should be sought from HED regarding scheduled monuments.
- 9. Consents and Licences:** confirmation of Scheduled Monument Consent and/or other statutory permissions (if required).
- 10. Contingency Planning:** clear protocols if archaeological material is encountered unexpectedly (cross-reference Appendix 2).
- 11. Opportunities:** identification of ways restoration may benefit heritage (e.g. stabilisation, erosion control, vegetation clearance).

6 Mapping Requirements

Maps accompanying the PHIA must show:

- Site boundaries.
- Scheduled monuments and all other known heritage assets⁸.
- Restoration features (e.g. bunds, drains, reprofiled areas).
- Access routes and machinery corridors.
- Monitoring points.
- Ditches, erosion gullies, areas of bare peat, scrub clearance and re-vegetation.

8 As recorded on the Historic Environment Record of Northern Ireland (HERoNI) | Department for Communities

7 Project Communication

- A pre-commencement meeting should be held with contractors, the archaeological consultant, and HED to confirm:
 - Location of heritage assets.
 - Buffer zones and protection measures.
- Contingency plans if unexpected archaeology is encountered.
- Contractors must be briefed on maps, heritage sensitivities, and agreed procedures.

8 Submission and Contact

The completed PHIA should be submitted, and case-specific advice requests directed, to **scheduling@communities-ni.gov.uk**

Appendix 2: Additional Guidance for Archaeologists

- This appendix provides **professional guidance for archaeologists** working on peatland restoration projects in Northern Ireland. It should be read alongside Appendix 1: Peatland-specific Heritage Impact Assessment (PHIA) and the wider peatland restoration guidance.
- Peatland restoration aims to “re-wet” the peat by reducing the flow of water from a peatland. Restoration methods include blocking drainage features; improving appropriate vegetation cover; removing scrub and forests; and the cessation of extraction and invasive agricultural activities.
- The processes involved in these methods range from largely ephemeral to more invasive. Archaeologists are not expected to be experts in peatland restoration techniques but they should ensure familiarity with the various types of peatland restoration techniques so they can advise the most appropriate methods given the nature of the archaeology within, or archaeological potential of, the restoration area.
- Peatlands are home to protected animals and plants (**Wildlife (Northern Ireland) Order 1985**). Archaeologists should ensure that protected species are not disturbed and should be familiar with any associated species restrictions or required mitigation measures. For examples, particular care is needed during the bird-breeding season (noting that timing varies across species); if breeding birds are encountered or disturbed, surveyors must move away.
- The role of the archaeologist is to **work collaboratively with peatland practitioners** to ensure that the historic environment is properly considered and that the risks are effectively managed.

Experimental forest to bog: leaving the stumps in situ.
Caffre Glenwhirry hillfarm, Co. Antrim.



1 The Role of the Archaeologist

- Act as the heritage advisor within the restoration team.
- Support the desk-based assessment, field survey and reporting required for the PHIA.
- Advise / collaborate on the most appropriate restoration techniques for areas of archaeological sensitivity.
- Provide input during pre-commencement meetings to ensure contractors understand risks, buffer zones, and contingency plans.
- Remain available during works to respond to unexpected discoveries, if appropriate.

2 Why Peatlands Matter for Archaeology

- Peatlands are one of the most important landscapes for preserving the historic environment. They provide:
 - Exceptional preservation of organic materials (timber, leather, textiles, human remains).
 - Environmental archives through pollen, insects, tephra, and other palaeoenvironmental evidence.
 - Evidence of prehistoric and later activity (trackways, megalithic sites, agricultural features, vernacular remains).
 - Intangible heritage such as placenames and folklore associated with bogs.

Refer back to Appendix 1 (Desk-based Assessment) for sources to capture these in the PHIA.

Key message: peatland restoration has the potential to **protect, stabilise and reveal** important archaeological resources.

3 Key Risks to Archaeology in Restoration

Different restoration activities can pose risks if not properly managed:

Restoration Method	Potential Archaeological Impact	Mitigation Considerations
Bunding and berm creation Used to break up surface flow of water thereby retaining rainfall. Bunding often takes form of turfed-over peat. Coir logs are not impermeable and therefore less effective.	Cutting/driving over sensitive areas; direct physical impact on archaeology.	Use non-invasive options (e.g. coir logs); avoid borrow pits in sensitive areas.
Drain blocking Historically drains were used to help dry the bog for turf and water extraction. Now they are badly eroded. Various methods of blocking drains (e.g. timber, plastic, stone or peat)—consideration should be given to invasiveness.	Disturbance from excavation from peat dams; obscuring townland boundaries.	Plan donor sites with care; avoid using stone from heritage features.
Reprofiling Making sides of drainage channels more or less steep thereby controlling speed of water. Carried out with diggers.	Digger tracks causing compaction or direct physical damage.	Use low-pressure machinery, spread weight, pre-map access routes.
Revetting Stops further erosion of bare peat by re-vegetating and stabilizing. Less invasive than reprofiling.	May harm or obscure features.	Survey thoroughly before stabilization.
Forest-to-bog Includes a range of restoration activities specific to sites which have been afforested. Often techniques are intense.	Stump removal damaging subsurface remains.	Limit disturbance, avoid mechanical pulling in sensitive areas.

Cross-reference these risks when drafting the PHIA’s “Integrated Proposals” and “Impact Assessment” sections.



Drain blocking © Ulster Wildlife Trust.

4 Consents and Licences

- It is a legal requirement, under the *Historic Monuments and Archaeological Objects (NI) Order 1995*, to obtain a Licence to Excavate for Archaeological Purposes from the Department of Communities before conducting an archaeological excavation⁹. This includes monitoring / watching briefs.
- Many other types of survey, including (but not limited to) geophysical, auger, and metal detection, on protected places—those scheduled under the **Historic Monuments and Archaeological Objects (NI) Order 1995**, and those in State Ownership and Guardianship—are regulated under Article 29 of the **Historic Monuments and Archaeological Objects (NI) Order 1995** and require a Detection Device Consent to be issued. There is no statutory requirement for a consent for surveys at sites which are not protected.
- In all cases where digging is taking place to determine if archaeology is present, an excavation licence must be obtained before any excavation for the object can be carried out. Please contact **excavationsandreports@communities-ni.gov.uk** for further information.
- If there are any scheduled monuments within the restoration area, HED's Scheduled Monuments Team must be contacted as soon as possible to discuss suitable mitigation and to process Scheduled Monument Consent, where required. **These sites are protected under the Historic Monuments and Objects (Northern Ireland) Order 1995 and any unauthorized works to them or within the associated scheduled area could result in prosecution.**

⁹ Guidance for Conducting Licensed Archaeological Excavations in Northern Ireland

5 Working in Partnership

- Establish early engagement with HED and restoration project leads.
- Ensure the PHIA process identifies all known heritage assets and potential risk areas (Appendix 1).
- Ecological constraints—including bird-nesting season—must be incorporated into the project timeline and survey methodology.
- Encourage adaptive management—restoration plans can change depending on ground conditions, so archaeologists must remain engaged.

6 Contingency for Unexpected Discoveries

- All contractors should be briefed to recognise potential archaeological material.
- If finds occur, follow the **STOP-PROTECT-REPORT** protocol:
 - Stop works immediately in the affected area.
 - Protect the find in situ.
- Notify the project archaeologist and HED.
- If human remains are suspected, contact **PSNI** and HED at once.
- Agree next steps (e.g. preservation in situ, recovery, redesign of works) before resuming work.

7 Wider Policy Context

- **The Climate Change Act (Northern Ireland) 2022** – peatland restoration is a nature-based solution central to achieving net zero.
- **Northern Ireland Peatland Strategy to 2040** – aims to bring 150,000 hectares into sustainable management by 2050.
- Heritage advice helps balance climate action with cultural stewardship.

8 Professional Standards

- All work should comply with the broader suite of HED, Chartered Institute for Archaeologists, and Institute of Archaeologists of Ireland standards and guidance.
- Reports must be concise, map-based, and clearly state **risks, impacts, and recommendations** for the restoration team.
- Ensure appropriate specialist input (e.g. palaeoenvironmental sampling, geophysical survey) if required.

Appendix 3 Glossary

Adaptive management

An approach to project delivery that allows restoration methods, layouts, and timings to be adjusted in response to changing ground conditions, new information, or unexpected discoveries, while maintaining environmental and heritage safeguards.

Archaeological excavation

Any intrusive groundworks undertaken to investigate, recover, or record archaeological remains. In Northern Ireland, all archaeological excavation requires a licence issued by Department of Communities' Historic Environment Division (HED).

Archaeological licence

Formal authorisation issued by HED allowing archaeological excavation or other intrusive archaeological works to take place. Licences are required before any digging intended to establish the presence, extent, or nature of archaeology.

Borrow pit / donor site

A location where peat, soil, or other materials are extracted for use elsewhere within a restoration site (e.g. for blocking drains or forming bunds). Borrow pits are ground-disturbing features and may impact buried archaeology; they must be included within the PHIA study area and assessed for archaeological potential.

Bund / berm

A raised barrier constructed across the peat surface to slow or retain water, helping to raise the water table. Bunds may be formed from

peat or alternative materials (e.g. coir or wool logs) depending on archaeological sensitivity.

Desk-based assessment (DBA)

A review of existing information (e.g. Northern Ireland Sites and Monuments Record, historic maps, aerial photography, LiDAR, placename evidence) to identify known heritage assets and assess the archaeological potential of a site prior to fieldwork.

Drain / grip

A channel cut to remove water from peatland, often associated with historic peat cutting, forestry, or agriculture. Blocking or reprofiling drains is a common restoration activity and may disturb archaeologically sensitive peat layers.

Excavation and Reports Team (HED)

The team within HED responsible for issuing excavation licences and overseeing archaeological investigations and reporting standards.

Heritage assets

Features or areas of archaeological, historic, architectural, or cultural significance, whether designated or undesignated. This includes monuments, structures, artefacts, landscapes, palaeoenvironmental deposits, and intangible heritage such as placenames.

Historic Environment Division (HED)

A division within the Department for Communities (DfC) with statutory responsibility for protecting, managing, and advising on the historic environment in Northern Ireland.

LiDAR (Light Detection and Ranging)

A remote sensing technique that uses laser scanning to create detailed digital models of the ground surface, capable of revealing subtle earthworks or buried features obscured by vegetation.

Low ground pressure machinery

Specialist machinery designed to exert minimal pressure on peat surfaces, thereby reducing compaction and damage to buried archaeological deposits.

Mitigation

Measures taken to manage unavoidable impacts on the historic environment after avoidance options have been explored. Mitigation may include archaeological monitoring, recording, excavation, or redesign of works, and can also create positive outcomes through improved understanding and protection of heritage assets.

Monitoring (archaeological)

The presence of a suitably qualified archaeologist during restoration works to observe ground disturbance, identify archaeological material, and advise on appropriate action if remains are encountered (often referred to as a watching brief).

Peat depth

The thickness of peat deposits above mineral soils. Archaeologically sensitive layers often occur at the peat–mineral interface; peat depth influences the risk posed by restoration works and the suitability of different techniques.

PHIA (Peatland-specific Heritage Impact Assessment)

A proportionate assessment that identifies known and potential heritage assets, evaluates the impacts of peatland restoration works on the historic environment, and sets out measures for avoidance, minimisation, mitigation, and enhancement.

Preservation in situ

The protection and retention of archaeological remains in their original location, without disturbance, as the preferred approach to managing heritage assets.

Reprofiling

Reshaping the sides of eroded drains or gullies to reduce slope steepness and slow water flow. This is an invasive technique and may impact buried archaeology if not carefully managed.

Revetting

Stabilisation of exposed peat faces using vegetation, geotextiles, or other materials to reduce erosion. Revetting is generally less invasive than reprofiling and may be preferable in archaeologically sensitive areas.

Scheduled Monument

An archaeological site or monument of national importance that is legally protected under the **Historic Monuments and Objects (Northern Ireland) Order 1995**

Scheduled Monument Consent (SMC)

Statutory consent issued by HED allowing works that would otherwise affect a scheduled monument or its associated scheduled area.

STOP-PROTECT-REPORT

A standard protocol for dealing with unexpected archaeological discoveries:

Stop work immediately in the affected area.

Protect the find in situ.

Report the discovery to HED and the project archaeologist.

Survey consent (non-protected sites)

Permission required from the landowner or relevant authority to carry out archaeological or geophysical surveys on sites that are not statutorily protected.



Digger installing peat dams, Cuilcagh, Co. Fermanagh, © Ulster Wildlife Trust.



Department for

Communities

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Helping communities to enjoy and realise
the value of our historic environment.

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