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21/06/2024	June 2024	➢ Revised text throughout ➢ Appendices expanded significantly. ➢ Appendix A - guidance for Registered Foresters completing the Environmental Considerations section on iNET ➢ Tables 1, 2 and 3 -water features, ABEs, woody habitats. ➢ Water crossings information. ➢ Changes in relation to reports required for environmental sensitivities	Kevin Collins

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Section 1: Introduction

1.1 Context

As set out in Ireland's Forest Strategy 2022-2030, the over-riding objective between now and 2030 is to radically and urgently expand the national forest estate on both public and private land in a manner that will deliver lasting benefits for climate change, biodiversity, wood production, economic development, employment and quality of life. A key part in chieving this expansion in Ireland's national forest resource is the provision of financial supports for farmers and landowners to create new forests on their land. The Afforestation Scheme, made available under the Forestry Programme 2023-27, offers attractive grants and premiums to develop a range of forest types, ranging from native woodland to agroforestry to multi-species forest plantations. This scheme represents part of the wider Forestry Programme 2023-27, funded by the Irish Government and subject to State Aid conditions.

As the consenting authority for afforestation, the Department of Agriculture, Food & the Marine (DAFM) must ensure that all afforestation (both grant-aided and non grant-aided) takes place in a way that complies with environmental legislation and State Aid conditions underpinning the Programme, and enhances the contribution new forests can make to the environment and to the provision of ecosystem services, such as carbon capture, water protection and landscape enhancement.

The overall aim of these *Environmental Requirements for Afforestation* is to ensure that the establishment of new forests are carried out in a way that is compatible with the protection and enhancement of our environment, including water quality, biodiversity, archaeology and landscape. (Sites proposed for afforestation must also meet requirements regarding eligible soil types and site fertility, as set out in DAFM's *Land Types for Afforestation*. This assessment is carried out by the Registered Forester ***before*** advancing to application stage, and sites that do not meet such requirements must not be submitted to DAFM for consideration.)

In assessing an application for afforestation, DAFM considers potential impacts across a range of issues and sensitivities and applies the necessary procedures regarding Appropriate Assessment and Environmental Impact Assessment. The following lists the primary components of the legal, regulatory and funding framework that apply:

- Forestry Regulations 2017 (S.I.191 of 2017), as amended
- Forestry Programme 2023-2027
- State Aid conditions set by the European Commission and underpinning the Forestry Programme 2023-27
- Legislation, both national and European, regarding species and habitats, water and the wider environment (including the various EU Directives regarding birds, habitats, water and Environmental Impact Assessment)
- Legislation regarding archaeology and built heritage, including the National Monuments Acts 1930 to 2014
- DAFM requirements, procedures and protocols, including: the requirements regarding soil type and fertility set out in the current *Land Types for Afforestation*; the terms and conditions of the Afforestation Scheme (if grant aid is being sought), the current *Forestry Standards Manual*; and various guidelines and protocols regarding particular sensitivities (e.g. the protection of surface waters from acidification).

Any licence (with or without grant aid) for afforestation is conditional on adherence to the measures set out in these *Environmental Requirements for Afforestation*, to the conditions of licence issued, and to the standards and procedures set out in the *Forestry Standards Manual*. Where a parallel approval for grant aid has been issued, the Afforestation Scheme Terms & Conditions also apply.

Any divergence from the measures set out in these Requirements must be fully described in the initial application and depicted clearly on the Habitat Map and the Biodiversity Map, for consideration by DAFM.

Sensitively sited, designed and established plantations adding to Ireland's expanding forest resource.

1.2 About these Environmental Requirements

The *Environmental Requirements for Afforestation* are set out according to three distinct stages in the development of a new forest, i.e.

- Pre-Application Design
- Site Works
- Ongoing Management

The Requirements reflect the typical activities undertaken by an Applicant and their Registered Forester during each stage, and the corresponding environmental requirements that apply.

1.3 Key sensitivities

As a result of the feedback arising from public consultation on the national implementation plan for the Forestry Programme 2023-27 and as the basis of State Aid approval from the European Commission, particular focus has been placed on key sensitivities potentially impacted by inappropriate afforestation. These in include the following:

- organic soils and associated carbon budgets
- high nature value farmland (HNVf)
- the top 8 freshwater pearl mussel catchments
- breeding waders, including curlew
- hen harrier

The response to each of these is set out in several key elements of the assessment process, namely:

- the procedure encapsulated by the Land Types for Afforestation document in relation to soil types and fertility;
- the submission of the Habitat Map and the Biodiversity Map as part of the application;
- the Environmental Considerations section on iNET completed by the Registered Forester as part of the application process, and resulting actions (see Appendix A), and
- particular checks undertake by DAFM, involving expert forestry and ecological input.

The above sensitivities and corresponding elements of the assessment process are in addition to the existing range of checks regarding water, biodiversity, archaeology, landscape, local infrastructure, etc., as represented by other parts of the Environmental Considerations section on iNET completed as part of the application process for afforestation.

Section 2: Design

2.1 Overview

During Stage 1: Pre-Application Design, and assuming the site has met the requirements regarding soil type and site fertility set out in the current *Land Types for Afforestation* document, the Registered Forester assesses the site and undertakes various checks, and subsequently designs the afforestation proposal in a way that addresses the various environmental features and sensitivities identified. This design is then reflected in the subsequent application (Form 1) for technical approval (and financial approval, if sought) submitted to the DAFM for assessment.

Please note, it is the responsibility of the Applicant to provide the relevant information needed to enable DAFM to undertake a full assessment of the application. This includes key maps (e.g. Habitat Map, Biodiversity Map), any reports arising from the completion of the Environmental Considerations section on iNET, and any further information required (FIR) requests issued by DAFM.

2.2 Baseline environmental information

The online iNET system provides the primary source of information to Registered Foresters regarding potential environmental sensitivities regarding water, designated sites, archaeology, etc. Of particular importance is the series of questions contained in the Environmental Considerations section on iNET, which must be completed (see associated guidance for Registered Foresters in Appendix A). Answering these questions assists the Registered Forester to identify key environmental sensitivities, and also sets out the prescribed response if particular sensitivities are met. This may involve the submission of a report providing further information to enable DAFM to undertake its assessment, or the exclusion of certain parts of the site from the application.

While most of the spatial layers cited are available to Registered Foresters within iNET, some are not, due to heightened sensitivities regarding species conservation. Other data may only be found elsewhere. The guidance for Registered Foresters completing the Environmental Considerations questions provides further details (see Appendix A). Dialogue with the Applicant may also reveal more subtle features and sensitivities that might exist in relation to the site of the proposed afforestation.

From the outset, the application should be tailored in such a way as to avoid any potential impact with the environmental features and sensitivities identified in relation to the site of the proposed afforestation. Potentially, this may also shorten and streamline DAFM's assessment process.

2.3 Basic requirements at design stage

The basic design-stage requirements in relation to water, biodiversity, archaeology and landscape are set out below. Note the following:

- If faced with a particularly sensitive and complex site in relation to a particular environmental feature or sensitivity (or combination thereof), a Registered Forester may propose measures above and beyond the minimum requirements set out in this document. Examples include wider-than-normal water setbacks due to a downstream Special Area of Conservation (SAC).
- Furthermore, the engagement of a relevant expert (e.g. hydrologist, ecologist, ornithologist, archaeologist, landscape architect) early in the process, to assess the feature / sensitivity and to propose appropriate measures will result in a more refined application and may avoid complexities and delays in the application process. For example, it may avoid the need for the DAFM to seek further information, and may allay the concerns of local people and statutory consultees. Again, the Environmental Considerations table on iNET will also stipulate specialist input in relation to certain situations.

- An individual site or part of a site may be deemed eligible from a soil type and site fertility perspective (as per the Land Types for Afforestation) but may be unsuitable from an environmental perspective. This may become apparent to Registered Foresters at the early design stage, following their onsite assessment and background checks. ***In such cases, do not submit the application.***

2.4 Water

Objective: To protect water and aquatic habitats and species, during afforestation and throughout the remainder of the forest rotation.

The Registered Forester must assess the potential risk of sedimentation and nutrient runoff entering into 'receiving waters' (streams, rivers, lakes), both during afforestation and throughout the remainder of the rotation, and adapt the forest design and planned operations accordingly. Key factors include soil type, slope, available pathways for water, the erodibility of the soil and subsoil, downstream (and in the case of mobile species, upstream) designated sites such as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (involving protected species of birds and essential water-based habitats for birds), fisheries sensitivities, drinking water sources and the status objective of the waterbody itself. Regarding the latter, particular regard is needed if the proposed afforestation site is within the sub-basin of a high status objective waterbody or a waterbody at risk of decline in status, and / or where forestry is listed as a pressure on waterbody status.

A number of water-related questions must be answered by the Registered Forester when completing the Environmental Considerations section of the application on iNET. These are mainly to identify water sensitivities to be aware of when designing the project, in relation to FT selection, water setbacks, contingency planning, etc. (Questions regarding freshwater pearl mussel are dealt with under Section 7.)

If the site overlaps with an area designated as being acid sensitive (in relation to surface waters), the Acid Sensitivity Protocol applies, stipulating water sampling and subsequent analysis (see Appendix H for details, including the thresholds that dictate whether the application can be submitted).

DAFM will refer the application to Inland Fisheries Ireland if the site is:

- greater than 5 ha and wholly or partially within an area identified as being sensitive for fisheries; or
- greater than 40 ha and wholly outside of those areas identified as being sensitive to fisheries;

Establishing whether or not the following situations apply will also build up a picture of the degree of water sensitivity:

- Is the site greater than 10 hectares and within a catchment area of Local Authority designated water scheme?
- Is the project area within a Zone of Contribution, Source Protection Area or 250 m buffer for a drinking water abstraction?
- Is the project area within a High Status Objective Waterbody? (If so, a wider water setback is required – see Table 4.)
- Is the project area within a waterbody where forestry is characterised as a pressure by the EPA (alone or alongside other pressures)?
- Is the project area within or immediately upstream of a River Waterbody deemed 'At Risk' or subject to Review under the relevant River Basin Management Plan?
- Is the project area within or immediately upstream of a River Waterbody, the status of which has been classed as 'Bad' or 'Moderate' under the current River Basin Management Plan?
- Is the project area within or immediately upstream of a Lake Waterbody deemed 'At Risk' or subject to Review under the relevant River Basin Management Plan?

- Is the project area within or immediately upstream of a Lake Waterbody the status of which has been classed as 'Bad' to 'Moderate' under the relevant River Basin Management Plan?

2.4.1 Water setback

A key element in the protection of water is the water setback. A water setback(*) is an area of a defined width, positioned adjoining the water features defined in Table 1, and left undisturbed(**) during afforestation and throughout the remainder of the rotation, specifically for the protection of water. All new drains installed as part of the afforestation project must terminate in sediment traps *outside* the water setback. The relevant setback for each water feature is set out in Section 2.8.

(* Formerly referred to as 'aquatic buffer zone'.)

(** With the possible exception of the planting of single or small groups of native trees (see Section 3.5.4) and fencing (see Section 3.7.1.)

During site assessment, identify and map (on the required Habitat Map and Biodiversity Map) the water features defined in Table 1, each of which require a water setback.

Table 1 Water features requiring water setbacks.

Type of water feature	**Definition**
Aquatic zone	Any natural river, stream or lake (but not an artificial drain) illustrated on an Ordnance Survey 6 inch map. These are typically indicated by a directional arrow along their length. (Note: The EPA water layer on iNET may not capture all aquatic zones onsite.)
Relevant watercourse (RW)	Any other watercourse that has the potential to act as a pathway for the movement of sediment and/or nutrients from the site to an aquatic zone. Relevant watercourses are often artificial. They include existing drains & channels & other potential pathways that may contain flowing water during & immediately after rainfall. Note, not every watercourse may be a 'relevant watercourse'. For example, a well-vegetated agricultural drain on moderately sloping ground may not be a relevant watercourse.
Hotspot	An area (often localised) that is a potential source for sediment / nutrient loss during afforestation and / or future forestry operations. Examples include soft wet ground, flushes and springs, and pockets where machine access is difficult due to low ground-bearing capacity.
Water abstraction point	Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme.

2.4.2 Drainage and cultivation

Drainage and cultivation are often necessary on many afforestation sites, to enable establishment. Typical methods include conventional mounding, ripping, inverted mounding and scrap mounding. Key factors are as follows:

- Carefully assess the site and tailor any proposed drainage and cultivation to the conditions on-the-ground within each plot, keeping interventions to the minimum needed to ensure successful establishment. Where possible, match the tree species to the existing site conditions (including existing drainage, both natural and artificial, e.g. old field drains), as this may rule out the need for drainage. (The various FTs relating to native woodland creation utilise this approach, through the use of the DAFM Native Woodland Framework procedure – see the current *Forestry Standards Manual*.)
- It is critical that water collected within mound drains flows slowly, both during afforestation and throughout the remainder of the forest rotation. This minimises the potential for erosion and the transport of sediments and nutrients to receiving waters. This requires an assessment of soil, slope and likely rainfall, and the selection and refinement of the most appropriate option(s), incorporating correct drain alignment, spacing and depth, and the proper deployment of sediment traps. Refer to the current *Forestry Standards Manual* for specifications regarding drains, sediment traps, mounding, ripping, etc. Additional information is contained in the *Forest Road Manual* and *Forest Drainage Engineering: A Design Manual*. For details on operational safeguards (e.g. sediment trap distribution), see Section 3.7.1.
- Any new drains, such as those associated with conventional mounding, must terminate in an appropriately-sized sediment trap located *outside* the water setback. New drains *must not* enter into or traverse the water setback itself. Additional sediment traps must be placed along the course of the drain, and cut-off drains must be used as appropriate. Do not rely on a single silt trap placed at the end of a drain.
- Match drainage and cultivation to the specific conditions that exist in different parts of the site, selecting the least intensive options and specifications needed to successfully establish and grow the forest. Where site conditions allow (e.g. on naturally free-draining sites), consideration should first be given to the least impacting techniques, such as ripping and inverted mounding. In water-sensitive parts of the site, inverted mounding or simple pit planting should be considered.
- The drainage and cultivation proposed for different plots must be determined during the design stage and accurately depicted on the submitted Biodiversity Map. Also depict any additional safeguards deemed necessary (see Section 3.7.1).
- Of particular concern are steep slopes capable of generating higher water velocities, and old land drains and other possible pathways that may become reactivated. Also of particular concern is the capacity of the new drainage network to withstand high rainfall events, without the failure of sediment traps and water setbacks.

2.4.3 Water crossings

Water features may need to be crossed for site development works and ongoing site management. Crossings may be temporary in nature or may comprise permanent structures intended to link in with a future forest road.

The following requirements apply:

- Any instream work (i.e. work within the aquatic zone itself) should be limited to the period May to September, inclusive. Inland Fisheries Ireland (IFI) must also be consulted if instream works are planned.
- Crossings should be designed so that:
    - the number of crossings over a given aquatic zone is minimised;
    - disruption to the bank, bed and adjacent water setback is minimised;
    - the water flow is crossed at a right angle;

- cement or uncured concrete is kept out of the aquatic zone, with 'cast-*in situ*' concrete isolated from any water which might enter the aquatic zone, until the concrete is cured;
- local stone is used for bridge kerbs and end treatments for culverts;
- all timber treatment is carried out off-site.

- If planning a permanent structure intended to link in with a future forest road, consider whether or not the location of the crossing is environmentally appropriate for that future use.
- Bridge construction is necessary where culverts may restrict fish migration (see Inland Fisheries Ireland *Guidelines on Protection of Fisheries During Construction Works In and Adjacent to Waters* (2016)).
  - All supports and buttresses should be completely out of the stream.
  - Do not create shallow or shooting flow at the bridge aprons, to ensure that water velocities do not impede fish movement.
- Fords are not desirable and should only be used where the design is approved by Inland Fisheries Ireland.
- All culverts should be embedded and of sufficient size to carry normal flow, to accommodate 25-year storm events, and to avoid blockages and washouts. Ends should be tapered to match the embankment slope. If greater than 1.0 metre in diameter, culverts should be buried to a depth of 30 cm or 20% of their height (whichever is greater) below the streambed, and the original bed material placed in the culvert.

If proposing a crossing, submit full design details with the afforestation application, and clearly indicate the proposed location on the Biodiversity Map. Also provide details regarding removal and site restoration, where the proposed crossing is temporary in nature.

If installing a temporary crossing, the following applies:

- Install the crossing at a location situated away from sloping terrain on either side. The crossing is to comprise a bridge-type structure that spans the entire width of the aquatic zone clearly from one bank to the other. The crossing can comprise pre-formed concrete slabs, timber logs or engineering products designed for this purpose. No instream works are permitted.
- The temporary crossing is to be removed when all machine operations have concluded onsite. Delay removal until conditions are dry and take other necessary precautions to ensure that no sediment is released into the water during the removal operation.

A well-defined water setback early in the afforestation process, with natural ground vegetation emerging.

2.5 Biodiversity

Objectives:

- **To ensure that afforestation does not adversely impact designated conservation areas, protected habitats, breeding waders, High Nature Value farmland, or protected species of fauna or flora and their habitat.**
- **To enhance the biodiversity value of the new forest.**

Biodiversity is the variety of living organisms, including: (i) the diversity of species; (ii) the genetic diversity or variation within the species; and (iii) the ecosystems in which species live. Broadleaf and mixed forests, when appropriately located, designed and managed, can contribute greatly to biodiversity, both within their boundaries and as wildlife corridors and refuges in the wider landscape.

DAFM applies a wide range of procedures in relation to biodiversity, including ecological assessment, referral to National Parks & Wildlife Service, and the application of various protocols regarding protected habitats and species. Core to this is the quality of the biodiversity-related information provided with the application (including the Habitat Map, Biodiversity Map and required reports stemming from the completion of the Environmental Considerations section on iNET) *and* how the project design has taken any related sensitivities into account. Also core is the application of Appropriate Assessment Screening, and if deemed necessary, Appropriate Assessment, in relation to potential impacts on European Sites (i.e. SPAs and SACs), as required under Article 6(3) of the Habitats Directive, and transposing legislation, primarily S.I.477 of 2011.

Wider requirements and provisions under the Forestry Programme also promote the protection and enhancement of biodiversity in relation to afforestation:

- The national 50% broadleaf planting target.
- The requirement for at least 20% broadleaf content within each afforestation project.
- The focus on native forest within the Afforestation Scheme, as demonstrated by the number of related Forest Types available (to allow for a variety of situations and applicant types).

This is in addition to the wide range of other, non-afforestation related schemes under the Forestry Programme, where biodiversity and the protection of water is to the fore (e.g. the Native Woodland Conservation Scheme, supports for CCF and the replacement of conifer stands with native woodland).

2.5.1 Biodiversity sensitivities

To summarise DAFM policy regarding afforestation, biodiversity and legally protected habitats and species, the following described relevant questions in the Environmental Considerations section on iNET. In any case where a report is stipulated, this report will be assessed by DAFM as part of the application. See Appendix A for guidance for Registered Foresters.

Habitats

- Wetland habitats listed in the Irish Wetland Types – An Identification Guide and Field Survey Manual (Irish Ramsar Wetlands Committee, 2018) must not be planted. ABE rules may allow small areas to be included as ABEs. Section 4 of the document gives visual examples of the various wetland habitats in landscape settings and lists the corresponding habitat classification according to Fossitt (2000) and / or the habitat type listed under Annex I of the EU Habitats Directive (92/43/EEC).
- Areas overlapping with the Wetland Survey of Ireland must be assessed. ABE rules may allow small areas to be included as ABEs.

Birds (including SPAs)

- Sites within SPAs are ineligible for afforestation and must not be submitted.
- Any part of a site overlapping with a SPA is ineligible and must be excluded from the application.
- Areas wholly within the 1.5 km buffer of a Curlew breeding site are ineligible and must not be submitted. (This will be indicated on iNET, drawing from a confidential dataset). See Appendix A Section 1.1.
- Any part of a site overlapping with the 1.5 km area of a Curlew breeding site is ineligible and must be excluded from the application. (This will be indicated on iNET, drawing from a confidential dataset). See Appendix A Section 5.2.
- If the site is wholly or partly within the foraging range of a Special Conservation Interest of a SPA, as per DAFM's Bird Foraging Table, the application must be accompanied by the mandatory habitat map and photographs (overview and close up) of the habitats within the project area (location of photos must be shown on the Habitat Map).
- If the site is wholly or partly within the Bird Watch Ireland (BWI) Breeding Wader Hotspot map, the Registered Forester then checks the individual species maps (Dunlin, Lapwing, Golden Plover, Snipe or Redshank) to identify the species of concern. Note there may be more than one species of concern, and these are the species that must be considered in the assessment. If there is no overlap with any individual species maps, no further action is required. If overlap occurs, a field survey is carried out to determine if there is suitable foraging and/or breeding habitat for the species identified. If no suitable habitat is present, this is recorded in the Breeding Wader Habitat Suitability Report. If there is suitable habitat, a suitably qualified person must complete a Breeding Wader Assessment Report. See Appendix A Section 5.4 and 5.4.1 and Appendix C.
- Sites wholly or partially within a section of a Hen Harrier High Likelihood Nesting Area (HLNA) (also referred to as a Red Area) that extends outside of a SPA designated for breeding Hen Harrier, are ineligible and must not be submitted. (This will be indicated on iNET, drawing from a confidential dataset). See Appendix A Section 5.5
- Sites wholly or partly within the Current Breeding Distribution for Hen Harrier (as recorded in the current NPWS Article 12 Report under the Birds Directive 2009/147/EC) must be accompanied by a habitat map (mandatory for all applications) and the Hen Harrier Site Inspection Form (detailed habitat description). See Appendix A Section 5.6 and Appendix D.

Other designated areas

- Sites wholly or partially with a SAC must be accompanied by a Natura Impact Statement, following DAFM guidance and framework for same. See Appendix F.
- If the site is wholly or partially within a NHA, the application must be accompanied by consent from the Minister for Housing, Local Government and Heritage (i.e. a completed Activities Requiring Consent (ARC) Form available from the NPWS website npws.ie) and a report setting out the rationale as to why afforestation can take place, despite this overlap.
- If the site is wholly or partially within a proposed NHA, a Nature Reserve, or a National Park, the application must be accompanied by the mandatory habitat map, a description of the habitat (dominant species, structure) and photographs (overview and close up) of the habitats within the project area (location of photos must be shown on the Habitat Map).

High nature value farmland (HNVf)

DAFM assesses risk to HNVf firstly at a landscape level using the indicative HNVf map of Ireland by Matin *et al*. (2020). From this map, areas identified as having a value of 0.5 SD HNVf or greater are now incorporated into iNET and iFORIS. Afforestation applications, apart from agroforestry, within this layer are subject to further assessment.

Potential impacts to HNVf are identified at a field level using information provided by the registered forester / ecologists by completing the following:

1. A **habitat map** (mandatory for all applications) of the proposed area to Fossitt level 3 with clear labels for each habitat (e.g. GS4, GA1, WL1, WS1). Open habitats (e.g. grassland) that vary significantly in species composition/richness must be clearly labelled and the boundary outlined with an additional number to distinguish them within the map (e.g. GS4a, GS4b, etc.). These **habitat unit labels** will be used throughout the HNVf assessment. Sample Plot locations must be also clearly marked on the map or submitted in a separate map if need be.
2. A **HNVf field card** for each open habitat unit.
3. A **HNVf Sample Plot Form** for each open habitat unit, listing the plant species and their % cover in a representative 2 m x 2 m sample plot. This sample plot must correspond to a habitat unit label and sample plot location on the habitat map.
4. Photographs

See Appendix A Section 8 and Appendix B.

Annex I habitats and Irish Semi-Natural Grasslands Survey layer

- If the site contains Annex 1 habitat, the area of Annex 1 habitat involved must not be planted and an appropriate buffer included, if required. ABE rules may allow inclusion as an ABE.
- If the site overlaps with Irish Semi-Natural Grasslands Survey layer, the application must be accompanied by the mandatory habitat map, a description of the habitat (dominant species, structure) and photographs (overview and close up) of the habitats within the project area (location of photos must be shown on the Habitat Map).

Freshwater pearl mussel (FPM)

- Sites within any part of a top 8 FPM catchment are ineligible for afforestation and must not be submitted.
- Any part of a site overlapping with a top 8 FPM catchment is ineligible and must be excluded from the application.
- Sites within the 6 km zone associated with any of the other 19 SACs designated for FPM typically require a completed Form A and Form B to be submitted with the application. (Some exceptions apply - see Forestry & Freshwater Pearl Mussel (FPM) Requirements (2008)).

Other biodiversity considerations

Other biodiversity issues can arise that are not directly addressed by the Environmental Considerations and that may, in some cases, require a specific report. For example:

- If applications are within the range of the Marsh Fritillary butterfly and a field assessment identifies that an area may be potential habitat, a survey for Marsh Fritillary (larval webs) is required at the appropriate time of year. Potential habitat is indicated by the presence of Devil's Bit Scabious between ankle and knee height. If larval webs are found, the area must remain unplanted or be excluded from the application.
- If applications are within the range of the Kerry Slug (sandstone geology in West Cork or Kerry) and a field assessment identifies that an area may be potential habitat, a survey for Kerry slug is required. If the species is found to be present, the area must be excluded or a derogation licence from NPWS will be required.
- If applications contain old buildings or underground places such as souterrains, caves and mines, they may be potential bat habitats. This should be considered and incorporated into the project design. Other features within applications that may be utilised by bats, either as roosting, foraging or for commuting, include existing mature trees, areas of scrub, hedgerows, and aquatic zones and their associated

setbacks. The Afforestation Scheme includes provisions to retain/enhance these features, and this will prove beneficial to bats. The design of the proposed afforestation project should look to increase connectivity within the project area, where possible e.g. linkage of open areas both within the project area itself and to areas outside, or enhanced setbacks along hedgerows.

- In relation to aquatic habitats and aquatic species, or species that depend on aquatic habitats (some of which may be protected under Annex II or Annex IV of the Habitats Directive), measures to protect water quality will also provide protection to these species and habitats. As such, a specific ecology report is not required to be submitted with the application.
- If there is a population of a species protected under the Flora (Protection) Order 2022 (S.I. of 2022) known to be present within the application, then an Ecology survey may be required. See the NPWS Flora Protection Order (FPO) Map Viewer for more information (Maps and Data | National Parks & Wildlife Service (npws.ie)).

2.5.2 Areas for Biodiversity Enhancement

In addition to the selection of appropriate Forest Type(s) for the project, the use of Areas for Biodiversity Enhancement (ABEs) is a key tool in designing the afforestation for biodiversity.

ABEs comprise environmental setbacks, future operational areas and retained habitats, as described below. Consequently, while in some cases their primary function may not be biodiversity-related, they play a role in promoting biodiversity, mainly through the provision of largely-undisturbed open spaces and structural diversity (including edge habitats between the open space and the adjoining forest canopy).

- An **environmental setback** is a (largely) unplanted and undisturbed open space of a defined width (as set out in Section 2.8) installed to protect a particular environmental feature or sensitivity. Different types apply (as listed below) depending on the feature or sensitivity involved:
    - water setback
    - retained habitat setback (including hedgerow setback)
    - archaeological setback
    - public road setback
    - utilised building setback
    - landscape setback

  In addition to their main protective role, these environmental setbacks are important biodiversity features in their own right, providing open and edge habitats. This role can be enhanced further through simple design and additional planting (see Section 3.5.4).
- A **future operational area** is an open space left unplanted in order to facilitate the future management of the plantation (e.g. a rideline) or to accommodate future infrastructure (e.g. a forest road or landing bay). In addition to their primary management function, these operational areas are also biodiversity features in their own right, and this value can be enhanced further through simple design and additional planting.
- A **retained habitat** is an existing onsite habitat selected for retention within the future forest. These can be area-based features (e.g. water hotspot), linear features (e.g. a hedgerow) or point features (e.g. a veteran tree). Design must aim to protect and enhance these habitats throughout the forest rotation, and to allow associated native flora and fauna to develop. This may involve the addition of a habitat setback, to prevent future impacts (e.g. overshadowing) from the growing forest canopy – see Section 2.8 for details.

Note: It may be necessary to exclude from the afforestation application, areas containing certain habitats or species that require grazing to persist. Otherwise, these areas will become overgrown as the result of fencing.

Ensure that future operational areas for future forest roads do not overlap with environmental setbacks for water and archaeology, and retained habitats.

Tables 2 and 3 list the various features that are eligible as ABEs for the purpose of grant and premium calculation.

Table 2 Site features and their eligibility as ABEs.

(Also see Table 3 regarding woody habitats.)

Site features	**Eligible as ABE?**
Water setback	Yes
Retained habitat setback	Yes
Archaeological setback	Yes
Public road setback	Yes
Utilised building setback	Yes
Landscape setback	Yes
Hedgerows and other woody habitats	See Table 3
Water features developed as part of the afforestation application	Yes
Railway setbacks	Yes
Future operational areas left for planned forest roads, turning bays, ridelines, etc.	Yes
Unplantable areas (including areas with a R+N score less than 6.0)	No
Areas of shallow, rocky soil	No
Rock and scree	No
Aquatic zones (as defined in Table 1)	No
Rights-of-way held by 3rd parties	No
Areas with turbary or grazing rights held by 3rd parties	No
Major water mains	No
Power line corridors	No
Gas pipeline corridors	No
Public roads	No
Other features	If deemed appropriate by DAFM

Table 3 Woody habitat types, their eligibility as ABEs, and available options.

Type of woody habitat	**Eligibility as ABE and available options**(*)	**Comment**
1. Area of scrub (e.g. elder) and non-high forest species (e.g. blackthorn, hawthorn, willow) **Note:** Areas of scrub that meet the requirements of FT5: Emergent Forest may be submitted under that FT as discrete plots.	Eligible as ABE. Therefore, either: ➢ include as retained habitat; OR ➢ exclude from the application.	These habitats typically have high biodiversity value.
2. Individual high forest trees (e.g. oak, ash, beech, birch, pine)	Eligible as ABE. Therefore, include as retained habitat (i.e. point features).	Individual trees such as these can have a high biodiversity value.
3. Areas of high forest trees (see above examples) less than 0.1 ha in size	Eligible as ABE. Therefore, either: ➢ include as retained habitat; OR ➢ exclude from the application.	Groups comprising trees such as these can have a high biodiversity value.
4. Areas of high forest trees (see above examples) 0.1 ha or greater in size	Not eligible as ABE. Therefore, exclude from the application.	Such areas meet the definition of a forest, and existing forests cannot receive afforestation payments.
5. Hedgerows	Eligible as ABE. ➢ In all cases, retain the hedgerow <u>and</u> ensure that any trees planted within 7 m of its centreline are native broadleaf species suited to the immediate site conditions. ➢ If the hedgerow is deemed 'important' (see Section 2.5.4)), apply a 5 m habitat setback, as measured from the hedgerow's centreline. Apply this 5 m setback on both sides, if located <u>*within*</u> the project area. ➢ Otherwise, setback optional.	
6. Woody exotic invasive species, including rhododendron and laurel	Not eligible as ABE. Therefore, either: ➢ clear (using best practice guidelines) and plant (note that an invasive species management plan may be required), OR ➢ exclude from the application.	Unsuitable for inclusion as ABEs.
* Each relevant option can be applied to all of the corresponding woody habitat type onsite, or to different sections of it.		

2.5.3 ABE criteria

ABE eligibility criteria are as follows:

- Where ABEs add up to more than 15% of the total area planted, the claim area must be reduced accordingly, as set out in the *Forestry Standards Manual*.
- ABEs must comprise areas that have a R+N score of 6.0 or greater and that are capable of establishing a forest ***but*** where this potential foregone for the purpose of retaining habitats, creating open spaces including future operational areas, and or/protecting habitats or species in order to (*inter alia*) promote biodiversity within the future forest. Areas that are unsuitable for planting are not eligible as ABEs.
- ABEs must be an integral part of the site. For example, an ABE plot cannot be in an adjoining field / land parcel or in a separate plot away from the main area of the plantation.
- Applicants must not remove habitats prior to submission of the afforestation application. ***Otherwise, the application may be refused.***
- The submitted Biodiversity Map must show any proposed ABEs (i.e. environmental setbacks, future operational areas and retained habitats) as Bio Plots or as linear or point features, adhering to mapping rules. The *Forestry Standards Manual* sets out the mapping requirements. It is critical that the Biodiversity Map accurately depicts all relevant environmental features and sensitivities (including biodiversity features), proposed cultivation and drainage (if required), and the location of setbacks and other protective measures.

  (* A basic level of ecological assessment by the Registered Forester will help to identify which habitats will have the greatest biodiversity value.)
- The area retained as ABE and the calculable ABE area differ as the calculable area takes into account the future canopy cover of planted trees, as their canopy extends into the setback itself. A setback distance refers to the distance from certain environmental features to the nearest planted tree at time of planting. It is reasonable to assume that the canopy of trees will often extend 5 metres into adjoining open spaces. Therefore, in calculating the area of any particular ABE, the width of that ABE can be reduced by 5 metres, to reflect the fact that the actual canopy area as the trees approach maturity will be approx. 5 metres from the original planting position. For example, if an aquatic zone within an application is 30 m in length and the setback distance is 10 m, the calculable ABE is 150 m (i.e. 30 m x 5 m). On-the-ground, however, the first line of trees is planted 10 m from the aquatic zone.

2.5.4 Hedgerows

Hedgerow networks are one of the most widespread semi-natural habitats in the countryside, due to their extent, connectivity, structure and composition. They can form important wildlife corridors linking fragmented areas of woodland or other habitats. Mature long-standing hedges are often valuable reservoirs of woodland biodiversity (including ground flora species, insects, birds and mammals). In addition to their biodiversity value, hedgerows form part of the cultural and historic heritage of the country and are important landscape features. As such, they must be regarded carefully during pre-application design and subsequent site works.

All hedgerows must be retained. In general, do not break through hedgerows during afforestation. Similarly, do not use hedgerow trees as makeshift straining posts for fence lines. Furthermore, only plant native broadleaf species suited to the immediate site conditions, within 7 m of all hedgerows, as measured from the hedgerow's centreline.

Important hedgerows, as informed by their quality in terms of age, species composition and structure, landscape importance, and other attributes (e.g. townland boundary) must have a 5 m wide habitat setback, as measured from its centre line (and applied on both sides of the hedgerow, if within the proposed afforestation site). A habitat setback can also be considered in relation to other hedgerows onsite, to ensure their continued presence as the surrounding canopy develops. Other situations may arise where a hedgerow setback is desirable, e.g. to create a future wind-firm edge to enable staggered felling later, or to realise the potential role of a hedgerow as part of water management onsite. Hedgerows with setbacks will also act as links and corridors for many species

of flora and fauna between other areas of semi-natural habitat within the wider landscape. Therefore, consider applying setbacks to one or more contiguous lengths of hedgerow that run from one side of the afforestation site to the other, to promote this habitat connectivity

In calculating the ABE area for hedgerows, consideration must be given to the future canopy of the forest. Foresters must estimate the area the hedgerow will occupy when the forests are approaching maturity. Therefore, a small hedgerow with newly planted trees on each side will not give rise to ABE area. Conversely, a large hedgerow with existing large mature trees will give rise to ABE area, as will a hedgerow where the 5 m wide habitat setback has been applied.

2.6 Archaeology and built heritage

Objectives:

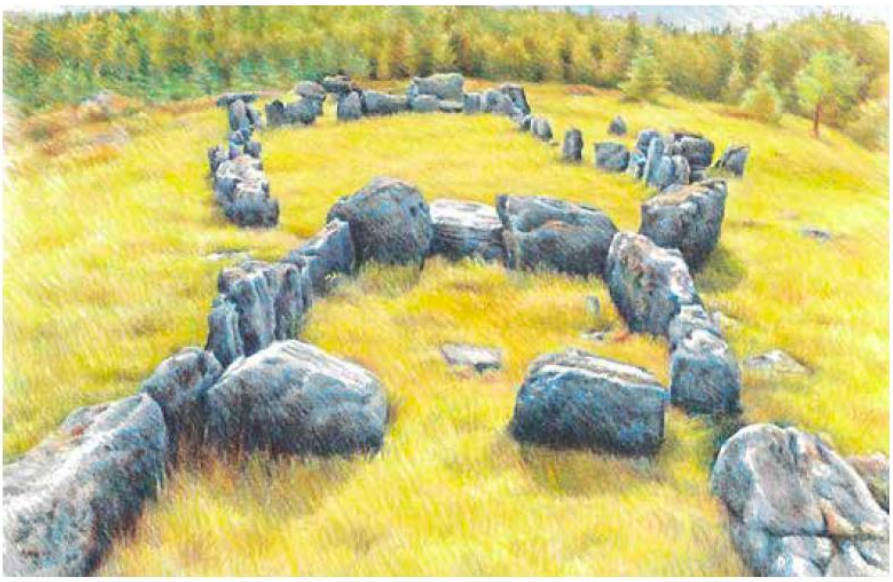
- **To seek to ensure that proposed afforestation development projects do not adversely impact directly or indirectly on known or suspected archaeological sites and monuments or on other important built heritage structures or features. This includes protecting their amenities and where relevant, their wider landscape setting, in particular, their relationship with other roughly contemporary or determinably linked sites, monuments, structures or features.**
- **Where afforestation is approved near known or suspected archaeological sites and monuments or other important built heritage structures or features, to seek to ensure that: (i) appropriate exclusion zones, fencing, access paths and other relevant measures are incorporated into the project design; (ii) there is an appropriate response should any previously unrecorded archaeological site, monument, object, structure or feature be discovered during site work; and (iii) any approved design is sympathetic to and provides an appropriate visual setting for such sites, monuments, structures or features.**

2.6.1 Potential impacts

The Irish countryside is rich in the physical remains of human activity stretching back over the millennia. These vary from the more obvious and iconic monument types such as megalithic tombs, standing stones, ringforts, crannógs, churches and graveyards, burial grounds and medieval castles, to the less well-known and less visible or entirely below-ground surface monument types such as ancient timber and gravel roadways (toghers), cooking places (fulachta fiadh) and settlement sites. All archaeological sites and monuments can have or may survive solely as associated artefacts and features. Examples include stone or metal tools, pottery sherds, post holes or refuse pits. These are often only uncovered during ploughing, drainage works, construction or turf cutting.

Archaeological sites and monuments and other important built heritage structures and features are part of our national heritage. There is a wealth of information to be gathered from such sites, monuments, structures and features, both from those which are visible above the ground and from those which have little or no surface expression. In addition to their educational value in terms of informing current and future generations and visitors about the history and development of our culture and society, they are also important recreational and tourism resources at local, regional and national levels.

A central court tomb, Magheraghanrush or Deerpark, Co. Sligo (Coillte property). (Illustration by Aislinn Adams)



2.6.2 Procedures

Land proposed for afforestation may contain or be located adjacent to archaeological sites and monuments and built heritage structures and features. For the purpose of these Requirements, these are grouped into three categories:

- **'Designated' archaeological sites and monuments,** which include those: entered onto the Record of Monuments and Places (RMP) or the Register of Historic Monuments (RHM); National Monuments in the ownership or the guardianship of the Minister for Arts, Heritage, Regional, Rural & Gaeltacht Affairs or a Local Authority; or those subject to a Preservation Order (PO) or a Temporary Preservation Order (TPO). Also included are sites and monuments newly discovered at the pre-application design stage or during the site works stage, post-approval. Examples include megalithic tombs, cairns, barrows, mounds, ringforts, enclosures, churches and graveyards, castles, tower houses and children's burial grounds.
- **'Designated' buildings and structures or parts of structures which form part of the architectural heritage and which are of special interest**, i.e. those entered onto the Record of Protected Structures (RPS) in the relevant County Development Plan or those entered into the National Inventory of Architectural Heritage (NIAH). Examples include vernacular cottages and houses, country houses and lodges, designed gardens and parklands, parish churches, historic creameries, military fortifications, mine engine houses, water mills, canals, locks and lock houses, and old school houses.
- **'Non-designated' built heritage structures**, e.g. lime kilns, sheep folds, creamery stands, stiles, townland boundaries, pumps and pump houses, mill ponds, and derelict dwellings / farm buildings.

Given the nature of afforestation (site selection, ground preparation operations, canopy development, and making provisions for future management operations), the potential for damage to our archaeological and built heritage clearly exists. For example, soil cultivation and drainage works can directly or indirectly disturb or impact both upstanding and sub-surface archaeological sites and monuments and associated features and artefacts. Even the digging of drains and sediment traps near such sites or monuments may cause organic deposits and artefacts (e.g. structural timbers, wooden artefacts or leather) preserved by anaerobic conditions to decay quicker as the soil deposit dries out. Similarly, changes caused to soil chemistry (e.g. from needle fall) may cause metal artefacts or ceramics to decay quicker.

The early identification of the nature, extent, setting, visual envelope and linkages of archaeological sites and monuments or other important built heritage structures or features, and the incorporation of these considerations both at the pre-application design stage and during site works (where afforestation is approved near known or suspected archaeological sites and monuments) will help to avoid or minimise the risk of damage.

Examples of measures to avoid, reduce or mitigate adverse impacts include:

- avoidance of areas of known or suspected elevated archaeological potential;
- incorporation of appropriate archaeological setbacks;
- access routes;
- unplanted lines of sight;
- arranging for in-works supervisory safeguards such as archaeological monitoring; and
- the sensitive design of the forest edge adjoining archaeological setbacks, to provide an appropriate setting.

The Registered Forester must identify known archaeological sites and monuments or other important built heritage structures or features, on and adjoining a site proposed for afforestation, through review of the relevant layers on iNET, and through a thorough onsite assessment.

The Forester should also utilise readily accessible sources of information. For example, the online digital service - the Historic Environment Viewer - provided by the Department of Arts, Heritage, Regional, Rural & Gaeltacht Affairs, facilitates access to the databases of the National Monuments Service (NMS) Sites and Monuments Record (SMR) and the NIAH. In addition, the RPS for each county is normally accessible on-line, and can usually be found as an appendix to the published County Development Plan. See the *Forestry Standards Manual* for further details.

Where possible, include all reference numbers (e.g. RMP number) on the Biodiversity Map submitted with the application. Doing so may expedite the DAFM assessment of the application.

Once the various archaeological sites and monuments and other important built heritage structures or features (including those both 'designated' and 'non-designated') have been identified, the relevant minimum archaeological setbacks detailed in Section 2.8 apply, as well as any other measures proposed to address considerations such as the nature, extent, setting, visual envelope and linkages of these sites, monuments, structures or features.

2.6.3 Conditions attached to or further information required in approvals

As a general rule, the archaeological conditions that may be attached to any approval for afforestation will be taken from, but are not limited to, one or more of a tiered hierarchy of archaeological mitigation responses. These include:

- archaeological setbacks (including fenced-off exclusion zones);
- access routes;
- unplanted lines of sight;
- increasing the size of the archaeological setbacks;
- the exclusion of a larger area or areas of archaeological potential;
- archaeological monitoring of specified areas by an independent archaeological consultant retained by the Applicant or the Registered Forester;
- refusal of either part or all of the development, pending the consideration by the DAFM and NMS of an archaeological assessment and an archaeological impact statement prepared by an independent archaeological consultant retained by the Applicant or the Registered Forester; or
- refusal after submission, where warranted due to significant adverse impacts that are evident at the very outset of the DAFM assessment, or which become so as the assessment continues.

Note, as explained above, where it is evident to the DAFM at the outset or where it becomes evident as the assessment progresses, that a proposed development is likely to have significant adverse impacts on archaeological, historical or cultural sites or features, and which in its opinion cannot be adequately addressed by conditions based on the tiered hierarchy of archaeological mitigation responses listed above, the application may be refused entirely.

Ogham Stone, Knickeen, Co. Wicklow (Coillte property).

2.6.4 Archaeological finds at the pre-application design stage

Note that, during the onsite assessment or with local knowledge, the Registered Forester may also encounter a previously unrecorded archaeological site or monument at the pre-application design stage. If discovered, the location of any new or suspected new archaeological site or monument must be included on the Biodiversity Map, and a clear reference included in the map's table legend. Furthermore, a clear description must be provided in the 'Other Environmental Considerations' section of the Afforestation Application Form 1.

DAFM will consider such reports as part of its assessment of the application. Following referral to the NMS, it may impose one or more relevant archaeological conditions, with a default position being to favour preservation *in situ* of any new archaeological site or monument so identified (in accordance with the principles and approach as set out in Part III of *Framework and Principles for the Protection of the Archaeological Heritage* (Department of Arts, Heritage, Gaeltacht and the Islands, 1999)).

Where an archaeological object is discovered at this stage, it must by law be reported within a reasonable time period (and not longer than 96 hours) to the Garda Síochána or the National Museum of Ireland. Also, unless there is reasonable cause to believe that removal or interference is necessary to preserve it or to keep it safe, it must not be disturbed. The unsupervised recovery of archaeological objects by untrained persons can greatly diminish or entirely eliminate any knowledge or research value that might be gained from a particular discovery. It is important that, wherever possible, archaeological objects are recovered in a structured scientific manner, with careful recording made of their association with other objects, structures, features and soil layers.

(Note, see Section 3.8 for details regarding archaeological finds discovered during site works.)

2.7 Landscape

Objective: To ensure that the proposed forest is designed so that it is visually acceptable and in keeping with landscape and amenity sensitivities.

The predominantly open landscape of Ireland is a result of the progressive clearance of the natural woodland cover through the centuries, primarily for agriculture. In such an open landscape, afforestation is a major change. Registered Foresters should therefore apply attention to shape, scale, species diversity, margins, open spaces and views, to ensure that the new forest complements the character of the landscape, and to avoid intrusive and monotonous plantations. Careful design of forests at the pre-application design stage is important, as only limited improvements can be made later on.

The emphasis placed on native forest creation within the Forestry Programme 2023-2027, and the use of the underpinning Native Woodland Framework (see *Forestry Standards Manual*), will ensure that areas planted under the relevant FTs will involve native woodland types and species in keeping with local site parameters such a soil, elevation and vegetation patterns. Such forests should therefore be largely sympathetic to the landscapes into which they are planted. However, awareness of the wider landscape and possible landscape impacts still need careful consideration.

The Registered Forester should consult with the relevant County Development Plan (both Draft and Final Plans), which will identify areas of particular landscape sensitivity and important views. The Registered Forester should also view the site from various vantage points and approaches, to identify how best to design the forest(*).

(* Within sensitive landscapes, it may be advisable for Registered Foresters to submit a series of photographs of the site, as viewed from various approach roads and local vantage points, together with an OS Discovery map indicating where each photo was taken. This will enable DAFM to assess how the afforestation will fit into the landscape, as viewed from these positions. Some digital cameras and smartphones have a function to take panoramic photographs, which are ideally suited for this purpose.)

Landscape-related questions within the Environmental Considerations section on iNET will assist in identifying sensitivities regarding landscape, amenity and recreation:

- If the site is within an area identified in the relevant County Development Plan as being sensitive for landscape / visual amenity, provide details with the application of the landscape sensitivity involved, citing the County Development Plan and section(s) / map(s) therein of relevance.
- If the site is within an area identified in the relevant County Development Plan as being sensitive for recreational / amenity purposes, provide details of the recreational / amenity sensitivity involved, citing the County Development Plan and section(s) / map(s) therein of relevance.
- If there is the potential for the project to impact on any locally-important amenity that may not be officially designated but still used and enjoyed by the local community, provide details with the application, for consideration by DAFM.

2.7.1 Design principles

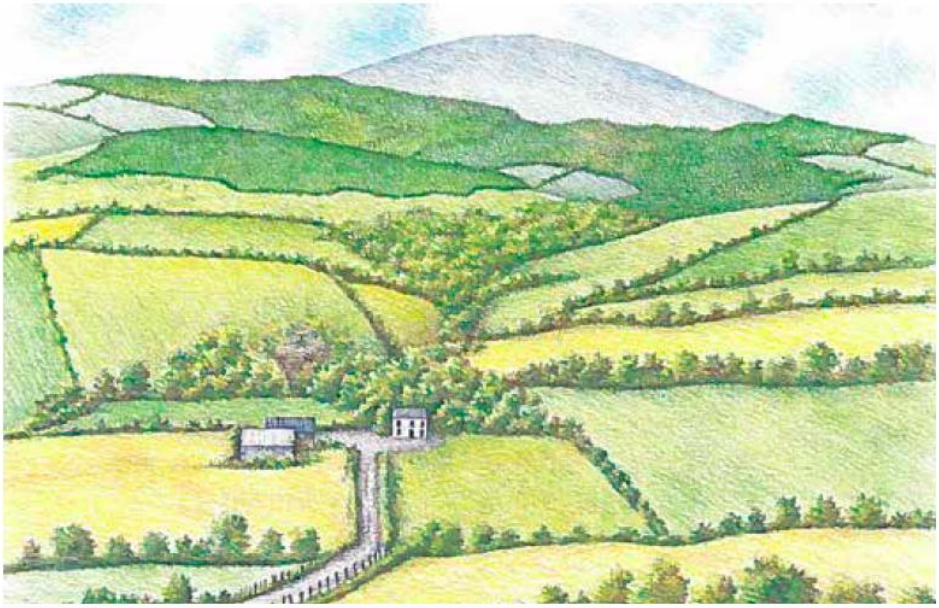
Achieving an acceptable landscape design in response to landscape sensitivities identified can be a subjective exercise. However, the following measures can be applied as required, taking account of the size of the proposed plantation, its position in the landscape, and its visibility from key vantage points, near and far. For example, a plantation on a visible hillside within a sensitive landscape will require a greater degree of design compared to a plantation within a lowland area with hedgerows, where measures may be limited to well-designed setbacks adjoining dwellings and public roads.

It is important that any measure applied is done so at an appropriate scale, in order to have the desired impact.

When appropriately sited and with sensitive layout and design, new woodlands and forests make a significant contribution to the landscape. (Photo Gillian Mills)

Shape

- Shape is the dominant landscape feature. It refers to the forest outline and also to the pattern of different species within it.
- Overall straight or horizontal lines and geometric or regular shapes should be avoided, where possible. These are often imposed by property boundaries but can be mitigated by landscape setbacks (see Section 2.8).
- The planting of single, small groups and irregular belts of native species (e.g. birch, rowan, oak and Scots pine, as site conditions allow) along the forest edge or within any environmental setback will also add visual interest – see Sections 3.5.3 and 3.5.4.
- On hillsides, planting should conform to the overall pattern in the landscape, whether natural landforms or field patterns, and follow the same rounded or irregular shapes.
- Large open landscapes are more suited to relatively large forested areas, while smaller and more regular shapes fit in better within a lowland pattern of fields and hedgerows.



Shape, margins and diversity are key considerations in forest landscape design. (Illustration by Aislinn Adams)

Margins

- Avoid abrupt margins between the forest and open ground, between different species and between different Forest Type (FT) plots.
- On sites approaching the skyline, the upper margin should be in line with the predominant landscape characteristics, be they irregular or smooth. Avoid leaving a narrow parallel band of open ground near the skyline. The open ground should reflect the scale of the hill or ridge. At lower points, planting can be carried right over the skyline.
- In more upland areas, long straight vertical boundaries should be avoided. Instead, a diagonal trend should be maintained.
- Along highly visible forest margins, localised areas of spruce and pine trees towards the outer 10-15 metres of the forest can be planted at wider and irregular spacing. This measure, when used in conjunction with forest edge planting, can promote the sense of a natural tree line, therefore softening the external margin.
- In lowland areas, straight boundaries can be acceptable where they reflect the agricultural field pattern.
- On lower margins, plantations can be blended into the agricultural landscape by introducing and extending broadleaf plots (and additional broadleaves) upwards in amongst the conifer plot, especially following hollows in the landform.

Diversity

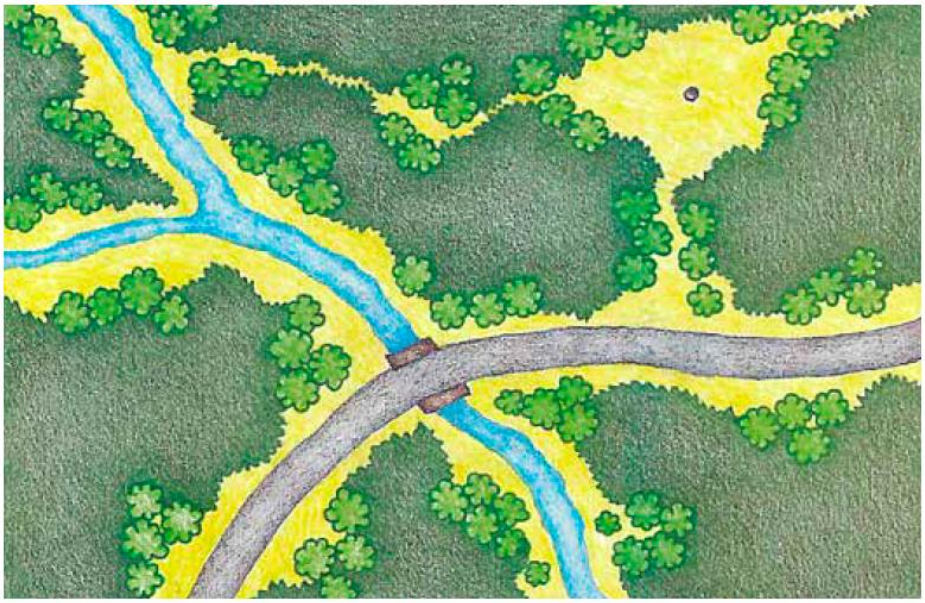
- Diversity can be promoted by using a variety of species and by incorporated and reinforcing open spaces and retained habitats.
- Too much variety, however, should be avoided. It is usually desirable that one species dominates by about two-thirds.
- To be considered eligible under the Afforestation Scheme, the proposed plantation must have a minimum of 20% broadleaves, either as plots of minimum width and / or as single, small groups and irregular belts of additional broadleaves. Furthermore, each plot must comply with one of the Forest Types (FTs) described in the *Forestry Standards Manual*, and its corresponding requirements, including species composition.

- Promote an interlocking pattern along the margin between plots of different species. This can be achieved by extending groups and single trees of one species into the other, within the scope allowed under the FT rules involved.
- Avoid creating long rows of single species or rows or blocks of alternate species.
- Avoid species boundaries crossing the skyline.
- Plot outlines and group planting should follow ground vegetation patterns – this will help maintain a natural appearance.
- Reinforce the outline of retained woody habitats, by planting broadleaves in adjoining tongues or groups.
- The planting of single, small groups and irregular belts of native species (e.g. birch, rowan, oak and Scots pine, as site conditions allow) along the forest edge or within any environmental setback will add visual interest – see Sections 3.5.3 and 3.5.4.

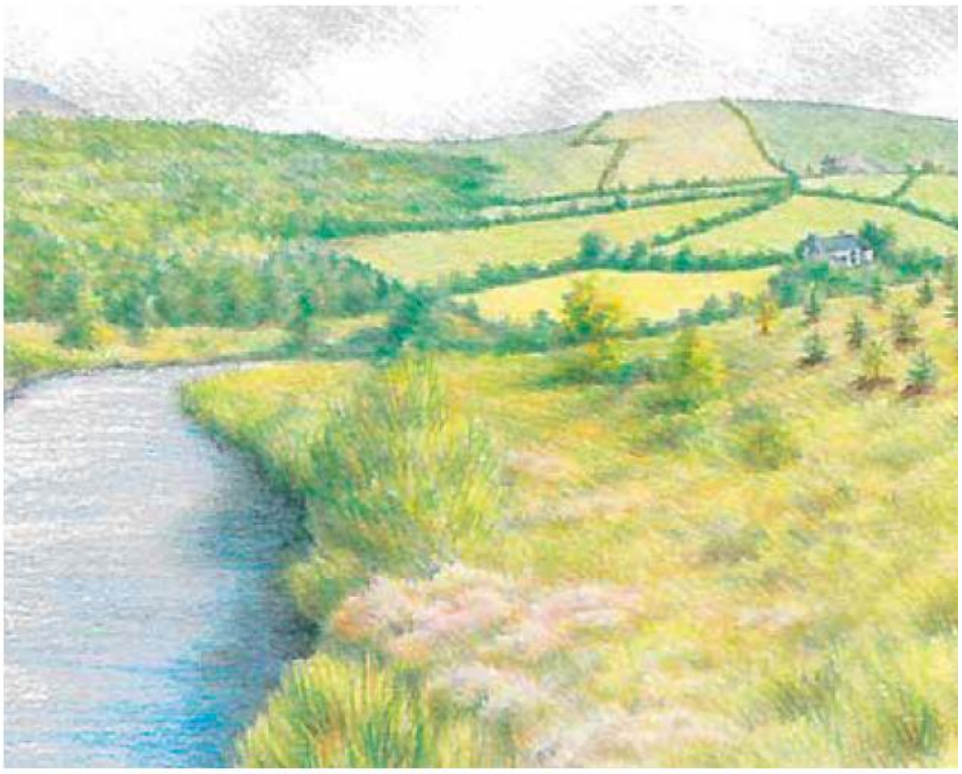
Environmental setbacks and future operational areas

Within the overall plantation boundary, the pattern created by environmental setbacks and future operation areas must be taken into account. The layout and design of these open spaces is set out in Table 4. As an overall measure, where these features intersect with each other, introduce appropriately scaled bell mouths in order to eliminate stark junctions and corners that may be visible from outside the plantation. The use of forest edge planting and environmental setback planting (see Sections 3.5.3 and 3.5.4) can also soften harsh angles.

Integrate environmental setbacks and future operational areas, to create a more natural landscape design. (Illustration by Aislinn Adams)



Water setbacks and setbacks from other environmental features and sensitivities are a key part of forest design. (Illustration by Aislinn Adams)



Appropriate setbacks from dwellings, deigned with appropriate edge planting with native broadleaf species, will avoid overshadowing and a sense of isolation. (Illustration by Aislinn Adams)

Other considerations

Where possible, ridelines and firebreaks through forests should follow landform and make use of natural features. They should follow an irregular route that avoids dividing a plantation into equal parts, and they should not be sited at right angles or parallel to contours.

Landscape setbacks and appropriate edge design for public roads and dwellings are important – see Section 2.8 for requirements.

2.8 Environmental setbacks

An environmental setback is a (largely) unplanted and undisturbed open space of a defined width, installed to protect a particular environmental feature or sensitivity. Different types apply, depending on the feature or sensitivity involved, e.g.

- water setback
- retained habitat setback (including hedgerow setbacks)
- archaeological setback
- public road setback
- utilised building setback
- landscape setback

Table 4 describes the minimum setback width (as measured horizontally) and setback treatment for each of the above. Note, DAFM may stipulate, on a site-specific basis, greater setback widths than those prescribed, or setbacks in relation to other types of features or sensitivities (e.g. swallow holes).

In all cases:

- Where different setbacks overlap, the greater setback width applies.
- The setbacks described in Table 4 are eligible as ABEs.
- In general, setbacks are to remain undisturbed at afforestation and throughout the remainder of the rotation, and allowed to develop naturally. Setbacks will typically develop a sward of natural ground vegetation accompanied over time by (potentially) pockets of native woody growth.
- The ongoing treatment of setbacks during Site Works and Ongoing Site Management are detailed in those chapters.

Water setbacks and setbacks from other environmental features and sensitivities are a key part of forest design. (Illustration by Aislinn Adams)

Table 4 Environmental setback type and purpose, and corresponding minimum setback distance and additional design requirements.
Note, all setbacks are measured in metres *horizontally*.

WATER SETBACK

Purpose: To create at the outset, a buffer of natural ground vegetation positioned between defined water features and the forest crop and associated operations, in order to protect water quality and aquatic ecosystems from possible sediment and nutrient runoff from the site at afforestation and throughout the remainder of the forest rotation.

Minimum setback width, as measured from the nearest bank / edge of the water feature, as observed on-the-ground (setback applies to each side of the water feature, e.g. to both banks of an aquatic zone):

Aquatic zone (as per Table 1):

Slope leading to the aquatic zone (apply as appropriate, where slope varies over the site)	**Setback width**	**Setback width for soils with peat component, and for sites within the sub-basin of high status objective waterbodies (see note opposite)**
Moderate (even to 1-in-7 / 0-15%)	10 metre	20 metre
Steep (1-in-7 to 1-in-3 / 15-30%)	15 metre	25 metre
Very steep (1-in-3 / >30%)	20 metre	25 metre

Relevant watercourse: 5 metre

Hotspot: 5 metre

Drinking water abstraction point: 20 metre

Additional design:

- Widen the water setback at various points along its length, to include adjoining wet hollows and other low-lying areas where water gravitates towards as it drains from the land.
- Based on the immediate landform / topography, vary the setback to avoid artificial lines and to create a naturally undulating forest edge.

NOTE, if the afforestation site is within the catchment area of a high status objective waterbody, the required setback width (as per the 3rd column opposite) can be reduced by 10 metres (from the landward side) if an appropriate native forest (e.g. FT1) plot is included instead of this 10 m strip. For example, where a 25 m setback applies, this can be reduced to 15 m by applying the following sequence: aquatic zone → 15 m unplanted water setback → native forest FT plot. Specific requirements for the native forest FT used, apply – see Forestry Standards Manual.

HABITAT SETBACK

Purpose: To create adequate space adjoining a retained habitat to avoid or reduce any impacts arising from the emerging forest and its canopy.

Different habitats identified as retained habitats (either as biodiversity plots or as linear or point biodiversity features) may require an unplanted habitat setback to prevent undue impact (such as shading) from the emerging forest. Setback width depends on the habitat and the potential impact(s). Apply careful design, e.g. focus the habitat setback mainly on the south-western, southern and south-eastern side of the habitat, to minimise the blockage of sunlight as the adjoining forest canopy grows. Note that the retained habitat itself must remain undisturbed (unless otherwise agreed or prescribed).

ARCHAEOLOGICAL SETBACK

Purpose: To physically separate the archaeological site or monument or other important built heritage structures or features from afforestation works, the emerging forest, and future forest operations.

Site, monument, building, structure	**Minimum setback from the outermost extent of the archaeological site, monument, important built heritage structures or features, as evident onsite**
'Designated' archaeological sites and monuments (see note opposite)	20 metre exclusion zone
'Designated' buildings and structures or parts thereof which form part of the architectural heritage and which are of special interest (see note opposite)	30 metre exclusion zone for upstanding structures (e.g. building) Otherwise, 20 metre exclusion zone
Non-designated built heritage structures, e.g. lime kilns, sheep folds, creamery stands, stiles, pumps and pump houses, mill ponds, and derelict dwellings / farm buildings	10 metre unplanted setback (demarcating fencing not required) Where there is a cluster of such structures (e.g. a ruined dwelling and a number of out-buildings, often enclosed in a yard or by a boundary wall), the 10 metre unplanted setback to be measured from the enclosing boundary wall, or edges of the outermost buildings. Where there are associated features such as boundary walls, mill races, or historic foot paths, 5 metre unplanted setbacks may also be applied to those features. Similarly for townland boundaries.

NOTE, for designated archaeological sites and monuments and for designated buildings and structures (as defined in Section 2.6), the following applies:

- It is essential that the full extent (i.e. the outermost extent) of these features is known, so that the exclusion zone can be correctly identified. Where there is any doubt, the Registered Forester should seek advice from the relevant designating authority or the Forest Service Archaeologist.
- The boundary of the exclusion zone must be clearly demarcated by fencing, and pedestrian access routes must also be maintained or established (see Section 3.5.1 for details).

PUBLIC ROAD SETBACK

Purpose: To ensure adequate clearance to prevent tunnelling along the public road, to retain sightlines, and to create visual diversity for road users.

Minimum setback, as measured from the surfaced edge of the public road:	***Additional design:***
10 metre (average, within any one application). For conifer plots, strip 10m to 20m from the road must be planted with broadleaf trees, giving two-thirds coverage within this strip. See Section 3.5.3.	➢ Based on the immediate landform / topography, vary the setback to avoid artificial lines and to create a naturally undulating forest edge. ➢ Provisions for future extractions should be planned and associated open spaces retained along the forest edge. Retain locally important views from the public road, by introducing open spaces through the forest. Also introduce open spaces that highlight natural features visible along the roadside. Increase setback, where appropriate, to allow for greater visibility at bends in the road.

UTILISED BUILDING SETBACK

Purpose: To prevent encroachment and isolation, the blocking of light and the curtailment of views in relation to dwellings, associated buildings, and roofed farm buildings.

Minimum setback, as measured from the outer wall of the roofed building:

Dwelling houses:

- 60 metre minimum
- Smaller setback allowable (to a minimum of 30 metre), if written agreement of the neighbouring dweller is provided at Form 1 stage
- Forest edge planting mandatory within conifer plots. See Section 3.5.3

Roofed farm buildings: 10 m

Temporary buildings (e.g. timber sheds, kennels & buildings less than 25 m^2): No setback required

Additional design:

- Setback distance is most critical when a building is surrounded by forest on two or more sides.
- Based on the immediate landform / topography, vary the setback to avoid artificial lines and to create a naturally undulating forest edge.
- Consider retaining locally important views from the dwelling, by introducing open spaces through the forest. Also introduce open spaces that highlight natural features visible from the dwelling.
- In relation to setbacks from dwellings, setback planting is encouraged within the 30 m to 60 m zone, if agreed to by the neighbouring dweller.

LANDSCAPE SETBACK

Purpose: To disrupt artificially straight lines and sharp angles along other visible sections of the plantation's outer perimeter, and to create stronger visual 'tie-in' with adjoining hedgerows and other semi-natural / natural features.

Setback and design as appropriate. Will vary, depending on site details – see Section 2.7.

2.9 Future operational areas

Future operational areas are areas left unplanted in order to facilitate the future management of the plantation (e.g. a rideline) or to accommodate future infrastructure (e.g. a forest road or landing bay). In addition to their primary management function, these operational areas are also important biodiversity features in their own right, and this value can be enhanced further through simple design and additional planting. The following applies:

- Edge design should take account of good landscaping practices and the local topography. Avoid creating an unnaturally straight forest edge. Instead, taking account of the immediate landform, create a more naturally undulating edge.
- Where possible, orientate in an east-west direction, to maximise sunlight throughout the day and the seasons.

2.10 Open spaces and deer management

Forest design at afforestation should incorporate measures to facilitate future deer management. Environment setbacks and future operational areas may provide suitable open spaces to apply control, complete with appropriate shooting positions and safe back stops. However, these may need to be augmented by additional future operational areas, specifically for this purpose. Also, in the case of open spaces likely to be used for deer management purposes, avoid landscape and biodiversity planting within these spaces and along the adjoining forest edge, in order to retain clear lines of sight.

For further details, see the Woodlands of Ireland information note *The management of deer in native woodlands**.

(* Höna, S., Nugent, C., Burkitt, T. & Little, D. 2018. The Management of Deer in Native Woodlands. Native Woodland Information Note 7. Woodlands of Ireland. www.woodlandsofireland.com/publications)

A deer hide overlooking an open space. During afforestation, incorporate features that will facilitate deer management in the future.

2.11 Site inputs

At design stage, planned site inputs such as fertilisers and herbicides should be tailored to the specific requirements of each plot. Aim to achieve successful establishment with the minimal level of artificial inputs possible.

Regarding fertilisers, phosphorus (P) is the main nutrient fertiliser applied at afforestation, with nitrogen (N) and potassium (K) occasionally applied as remedial fertilisation. Note that peaty soils have a very low capacity to bind phosphorus. Slow-release formulations may be appropriate on more sensitive parts of the site.

The afforestation application must detail:

- the proposed fertiliser type and application rate; and
- the proposed method of vegetation control (including herbicide type and application rate, if applicable).

Note that further operational safeguards regarding fertiliser and herbicide application are set out in Section 3.7.

2.11.1 Residues, emissions and waste

A related issue concerns residues, emissions or waste expected to arise from the project, and this is addressed by questions in the Environmental Considerations table on iNET.

- If there are any residues, emissions or waste expected to arise from the project that are likely to have significant effects on the environment, a report must accompany the application, setting out how it is intended prevent, reduce, or manage residues, emissions or waste from the project.
- To the extent of the information available, if there are any residues, emissions or waste expected to arise from the project, details must be provided with the application.
- If there are any significant effects on the environment likely from those residues, emissions or waste from the project, the application must be accompanied by a report setting out how it is intended prevent, reduce, or manage residues, emissions or waste from the project.

2.12 Further environmental assessment

Stage 1: Design culminates in the submission of a Form 1 for afforestation approval. This triggers DAFM's assessment of the proposal. In some situations, DAFM may seek specific environmental information regarding the proposal, before it can continue with its assessment. In such cases, a request for further information will be sent to the Applicant and his / her Registered Forester.

The information sought may entail the following, which typically involve the input of a specialist:

- Ecological Report
- Archaeological Assessment / Archaeological Impact Statement
- Water Management Plan
- Visual Impact Assessment
- NATURA Impact Statement (NIS)
- Environmental Impact Assessment Report (EIA Report)

Section 3: Site Works

3.1 Overview

Stage 2: Site Works spans the period between the receipt of the technical approval for afforestation up to the completion of initial site works and (where grant-aided) Form 2 submission.

The technical approval will set out conditions that must be adhered to. If uncertainty exists regarding any condition, contact DAFM for clarity before proceeding with any work.

Note the following:

- In the case of applications under the Afforestation Scheme, in order to be eligible for grant aid, site works can only commence on receipt of the financial approval. In the case of non-grant aided afforestation, sites works can only commence after the 14-day stay prescribed in the technical approval letter, to allow a window for possible appeals against DAFM's decision. (If an appeal is received, this stay will be extended.)
- The Registered Forester must secure written DAFM agreement before pursing any material change to a project post-approval. Not doing so may invalidate the technical approval and the financial approval (where relevant) issued.

3.2 Site management

The Registered Forester must ensure that all operators are fully aware of, and properly implement, all relevant measures set out in these Requirements and all environmental conditions attached to the technical approval issued. This should be carried out *via* onsite management and supervision. So-called 'tool box' meetings are encouraged, whereby the Registered Forester reviews the various sensitivities and safeguards during an onsite meeting with the operators, before operations commence.

Onsite activities should also be reviewed periodically during the site works, to ensure that related safeguards are in place and that any contingency planning called upon (see below) is functioning.

3.3 Oversight by other specialists

Conditions attached to the technical approval may stipulate the onsite presence of a specialist e.g. ecologist, Ecological Clerk of Works (ECoW), archaeologist, during site works. For example, a condition may stipulate the archaeological monitoring of specified areas. Archaeological monitoring involves having a suitably qualified archaeologist present during certain operations, or during the course of the carrying out of certain parts of approved development works, in order to identify and protect archaeological deposits, features or objects that may be uncovered or otherwise impacted by those operations. In such cases:

- an independent archaeological consultant must be retained by the Applicant or Registered Forester to carry out the monitoring;
- as set out in Section 3.8, the archaeologist will be empowered by the approval conditions to stop any works in the immediate area of any new discoveries *inter alia*, so as to ensure the timely notification of the relevant authorities, the proper recording of any exposed archaeological material, and the preservation by record or preservation *in situ* of the elements of the archaeological heritage, as appropriate;
- there will be a condition requiring the archaeological consultant to submit a full report on the results of the archaeological monitoring (including any discoveries made and any subsequent archaeological work undertaken) to the DAFM, the NMS and the National Museum of Ireland; and

- failure to ensure that the archaeological monitoring is undertaken during the course of the carrying out of the specified parts of approved development or to submit the required report on this monitoring before or at latest at Form 2 stage, may be deemed to be:
    - a breach of the statutory approval for afforestation; and / or
    - a breach of the specific environmental conditions attached to the approval for grant aid and may: (i) delay the progress of the Form 2 (Application for 1st Grant Instalment); and (ii) be subject to a penalty.

Sanctions may also apply, as set out in the *Terms & Conditions for the Registration of Foresters and Forestry Companies*.

3.4 Contingency measures

Ensure that an adequate contingency plan is prepared. This plan must clearly inform operators how to react and who to contact, should an unexpected event arise that may create a risk to the environment, e.g. a period of intense rainfall, an accidental spillage of chemicals, the discovery of an unidentified archaeological site, monument or object. The plan should be readily available onsite and all operators should be made familiar with its content.

Appendix C of DAFM's *Standards for Felling & Reforestation* (2019) includes a template contingency plan for forestry operations that can be adapted for use on afforestation sites.

3.5 Treatment of setbacks

As set out in Stage 1: Design, the following setbacks, comprising (largely) unplanted and undisturbed open spaces of a defined width, are required to protect different environmental features and sensitivities:

- water setbacks
- retained habitat setbacks (including hedgerow setbacks)
- archaeological setbacks
- public road setbacks
- utilised building setbacks
- landscape setbacks

See Table 4 for setback widths and design details. The treatment of these setbacks during Stage 2: Site Works is set out below.

The Registered Forester must ensure that all operators are aware of the importance of any environmental setbacks required onsite, their location and extent, and what is and is not permitted within them (as per Table 5 below). An environmental setback must not be used for any forest operation or for any other purpose which could compromise its protective function or which could damage the environmental feature or sensitivity being protected.

Under the* Forestry Schemes Penalty Schedules*, failure to adhere to the required environmental setbacks can incur significant penalties.

3.5.1 Installing environmental setbacks

It is good forest practice to mark out environmental setbacks *before* operations commence, to avoid incursions. The following guidance applies:

- Mark off the setback using temporary markers, e.g. posts or bamboos with hi-vis tape, securely driven into the soil with approximately 1.5 metres remaining visible above ground.
- Marker spacing will vary depending on setback shape, e.g. 10 metre spacing for setbacks which vary in width; 30 metre spacing for long linear setbacks.

- Linear setbacks (e.g. archaeological sight lines) can be demarcated by markers set along the centre line.
- Also use markers to indicate the position of any additional enhancement planting proposed along the forest edge or within the setback itself (see below).

Note that specific requirements apply regarding 'designated' archaeological sites and monuments and 'designated' buildings and structures or parts of structures which form part of the architectural heritage and which are of special interest:

- Unless the conditions attached to the technical approval specify otherwise, erect a permanent fence comprising two strands of plain wire on the outer edge of the archaeological / built heritage exclusion zone. Adhere to the standard DAFM fencing specifications, including the use of IS 436 stakes (see the *Forestry Standards Manual*)(*). Note, where the outer edge of an archaeological monument / built heritage structure or feature is not evident on-the-ground, the advice of the Forest Service Archaeology and Built Heritage Section or a consultant archaeologist retained by the Applicant or her / his Registered Forester should be sought.

  (*This fence must be stock proof, if it represents an external boundary of the plantation.)
- Existing access routes to an archaeological site must be left unplanted and undisturbed, and must be left open for pedestrian access by archaeological officials throughout the rotation. If there is no existing access route, leave an unplanted 4 m wide route suitable for pedestrian access from the direction nearest public road, forest road or track.

3.5.2 Subsequent treatment

Table 5 details what is and is not permitted within the various environmental setbacks.

Table 5 Treatment of environmental setbacks during site works. Note, if setbacks overlap, the more environmentally stringent set of requirements apply.

	Operation						
Setback type	***Forest edge planting***	***Environmental setback planting***	***Demarcation fencing with stakes and wire***	***Machine traffic***	***Cultivation / Drainage***	***Fertiliser application / Vegetation management***	***Temporary onsite storage of fertiliser, fuel, etc. associated with afforestation***
Water setback	Encouraged – see Section 3.5.3.	Encouraged – see Section 3.5.4.	Not required	Exclude	Exclude. New drains must not enter into or traverse the water setback, or discharge directly into the aquatic zone or into an existing drain (with an exception detailed in Section 3.7.1).	Permitted if required to establish setback planting, based on the following requirements: ➢ Fertiliser application limited to the manual application of an appropriate slow-release formulation into the planting pit. ➢ Regarding vegetation management, herbicide use is prohibited. Use non-herbicide methods instead, such as trampling, mulches and mats.	Exclude
Habitat setback	Encouraged – see Section 3.5.3.	Exclude	Not required	Exclude	Exclude	Exclude	Exclude
Archaeological setback	Encouraged – see Section 3.5.3.	Exclude	Required for designated archaeological features – see Section 3.5.1 for details.	Exclude	Exclude	Exclude	Exclude

Setback type	*Forest edge planting*	*Environmental setback planting*	*Demarcation fencing with stakes and wire*	*Machine traffic*	*Cultivation / Drainage*	*Fertiliser application / Vegetation management*	*Temporary onsite storage of fertiliser, fuel, etc. associated with afforestation*
Public road setback	Mandatory for roadside conifer plots – see Section 3.5.3.	Exclude	Not required	Permitted	Exclude	Exclude	Permitted, subject to safeguards under Section 3.7.5.
Utilised building setback	Mandatory for setbacks from dwellings – see Section 3.5.3.	In relation to setbacks from dwellings, setback planting is encouraged within the 30 m to 60 m zone, if agreed to by the neighbouring dweller. See Section 3.5.4.	Not required	Permitted	Exclude	Permitted if required to establish setback planting, based on the following requirements: ➢ Fertiliser application limited to the manual application of an appropriate slow-release formulation into the planting pit. ➢ Regarding vegetation management, herbicide use is prohibited. Use non-herbicide methods instead, such as trampling, mulches and mats.	Permitted, subject to safeguards under Section 3.7.5. However, if within a setback from a dwelling, exclude the preparation and storage of herbicides (and other pesticides, if used).
Landscape setback	Encouraged – see Section 3.5.3.	Encouraged – see Section 3.5.4.	Not required	Permitted	Permitted, for setback planting.	Permitted, for setback planting.	Permitted, subject to safeguards under Section 3.7.5.

3.5.3 Forest edge planting

- Forest edge planting comprises the planting of single, small groups and irregular belts of native species (e.g. birch, rowan, oak and Scots pine, as site conditions allow) along the outer edge of conifer FT plots, typically those adjoining environmental setbacks.
- This measure enhances the landscape and biodiversity value of the forest edge.
- Forest edge planting is mandatory within conifer plots adjoining:
    - utilised building setbacks created for dwellings; and
    - public road setbacks, where the strip 10 metres to 20 metres from the road must be planted with broadleaf trees, to give a minimum two-thirds coverage within this strip.
- Forest edge planting is encouraged in relation to all other environmental setbacks, as site conditions allow – see Table 5.
- Where applied, forest edge planting must not encroach into the environmental setback itself, in order to maintain the necessary setback width. Forest edge planting forms part of the FT plot.
- Where applied as single trees, ensure that the tree is adequately protected against grazing, using a standard tree shelter or a deer guard, as necessary.
- Where applied as groups, adopt a robust planting design using trees with compatible growth rates, planted with necessary protection against grazing. Group size may vary from 5-10 trees to 50 trees and over, depending on landscape scale. In deer-prone areas, wider spacing and the use of deer guards may be appropriate – specify details on the Certified Species Map.

Forest edge planting, using deer shelters.

3.5.4 Environmental setback planting

- Environmental setback planting comprises the planting of single, small groups and irregular belts of native species (e.g. birch, rowan, oak and Scots pine, as site conditions allow) within an environmental setback. As per Table 5, environmental setback planting can take place within water setbacks, utilised buildings setbacks and landscape setbacks.
- This measure enhances the environmental role of the setback itself, e.g. planting within a landscape setback will create better visual 'tie-in' between the surrounding landscape and the forest edge.
- Apply environmental setback planting as per Table 5 and as site conditions allow.

- Where applied as single trees, ensure that the tree is adequately protected against grazing, using a standard tree shelter or a deer guard, as necessary.
- Where applied as groups, adopt a robust planting design using trees with compatible growth rates, planted with necessary protection against grazing. Group size may vary from 5-10 trees to 50 trees and over, depending on landscape scale. In deer-prone areas, wider spacing and the use of deer guards may be appropriate – specify details on the Certified Species Map.
- Environmental setback planting must not exceed 20% of the area of the setback (see Table 5). Such planting increases the planted area of the overall project and reduces the ABE percentage calculated for payment purposes. Table 5 specifies which environmental setbacks this planting is allowed in, i.e. water setbacks, utilised buildings setbacks and landscape setbacks.
- Note, setback planting may be counter-productive within water and landscape setbacks likely to be important for deer management, as the trees may obstruct sight lines over time.
- The following applies specifically in relation to planting within water setbacks:
    - Pursue water setback planting only where agreed in advance with Inland Fisheries Ireland and (where relevant) NPWS.
    - Strategic planting within water setbacks may help to deliver direct in-stream ecosystem services such as bank stabilisation, cooling / shading, and food drop into the aquatic ecosystem.
    - Machine traffic is not allowed within water setbacks, with the exception of a single pass for fencing. Other inputs such as drainage, cultivation, fertiliser application and herbicide control are also to be excluded (with some limited exceptions, as set out in Table 5).
    - Limit to single or small groups (5-10 trees) of native riparian species (birch, willow, and occasional alder and pedunculate oak) at strategic points within the water setback.
    - Such trees should be pit-planted and protected from grazing, as necessary.

3.6 Treatment of future operational areas

Treat future operational areas (as described in Section 2.5.2) as follows, to enhance their landscape and biodiversity value:

- As per good practice, mark out these areas before operations commence (see Section 3.5.1).
- Based on the immediate topography, vary their width to avoid artificially straight lines and to create a naturally undulating forest edge.
- Consider forest edge planting (see Section 3.5.3).

3.7 Operational safeguards

Mandatory measures to protect the environment during operations are set out below. Conditions attached to the technical approval may also contain additional measures that must be adhered to. Also note Section 3.1 (regarding material changes post-approval) and Section 3.4 (regarding contingency planning).

3.7.1 Drainage and cultivation

A key requirement regarding drainage and cultivation is the protection of aquatic zones (streams, rivers and lakes) from any sediment and nutrients leaving the site, both during afforestation and throughout the remainder of the forest rotation.

As previously outlined, carefully assess the site and tailor any proposed drainage and cultivation to the conditions on-the-ground within each plot, keeping interventions to the minimum needed to ensure successful establishment. Where possible, select the species to the existing site conditions (including existing drainage, both natural and artificial, e.g. old field drains), as this may rule out the need for drainage. (This approach is illustrated

in DAFM's Native Woodland Framework (see the *Forestry Standards Manual*), used in the development of applications under the various native woodland-related Forest Types.)

The following measures apply.

- Review Section 2.4.2 regarding key factors dictating selection and design.
- It is critical that water collected in drains flows slowly, both during afforestation and throughout the remainder of the rotation.
- Adhere to the overall cultivation plan approved for the project, and to the specifications set out in the *Forestry Standards Manual*.
- Select machinery based on soil, drainage and slope, to minimise the risk of rutting.
- In relation to water setbacks for aquatic zones and other water features (see Section 2.8):
    - Ensure that all new drains end in an appropriately-sized sediment trap positioned *outside* of the water setback. This will allow discharged water to seep through the water setback, enabling ground vegetation to filter out sediments and nutrients.
    - Do not carry out any drainage and cultivation within the water setback itself.
    - No machinery is to enter water setbacks, with the exception of a single pass to erect fencing, if required.
    - New drains must not enter into or traverse the water setback, or discharge directly into the aquatic zone or into an existing drain.
- In general, do not carry out any drainage or cultivation within any other environmental setback. See Table 5 for details.

Conventional mounding (left) and invert mounding for more sensitive sites (right).

- Regarding sediment traps:
    - These are formed by the excavator during ground preparation using a mounding or digging bucket.
    - The number, design and size of sediment traps must be sufficient to protect against the sedimentation of any receiving aquatic zone during afforestation and throughout the remainder of the forest rotation.

- In order to capture sediment as close to the source as possible, sediment traps must be installed throughout the drainage network. The number of sediment traps installed must reflect the risk of sediment becoming mobilised.
- Sediment traps are required at the end of all new drains leading to the water setback. These sediment traps must be located *outside* the water setback.
- Sediment traps should be located on level ground (where possible) and should be rectangular in nature, with the longer side orientated parallel to the flow.
- Sediment traps can represent a site hazard and may require specific health and safety measures such as fencing.
- Monitor sediment traps throughout operations. If sediment traps are filling up, clear out the built-up sediment and deposit it on level ground several meters away.

- Stop all drainage and cultivation operations during periods of rainfall, where the rainfall levels and site conditions create the risk of sediment becoming mobilised onsite. Operations can only recommence once an adequate period of time has elapsed for the risk to abate. This safeguard is triggered by tracking weather forecasts and by contingency planning.
- Where the drainage network and sediment traps are under pressure and signs of failure are evident, additional measures will be required, often in the form of additional sediment traps. In complex situations, the input of a hydrologist or an engineer may be required.

In-drain sediment trap (left) and a sediment trap adjoining a water setback (foreground) (right).

Additional safeguards include the following:

- Small dams positioned within drains and comprising timber, stone or staked geotexile, can be used to slow water flow and to encourage sediment deposition. These should have a 'V' shape in their centre, to control the overflow of water and to prevent the scouring out of the sides of the channel during flood events.
- It may be necessary to install large settling ponds into which site drains flow. These settling ponds must be appropriately sized (i.e. sufficient to contain flow from high rainfall events), strategically located within the main body of the plantation and away from aquatic zones, and properly maintained.
- Favour plots of more species-diverse Forest Types in areas adjoining water setbacks, where site conditions allow.

- Design the drainage network in a way that will eliminate or reduce water-related risks during operations later in the forest rotation, e.g. roading, thinning.
- Develop windfirm edges within the forest (e.g. using ridelines or retained hedgerows with habitat setbacks) to enable the future harvesting of smaller coupe sizes over staggered periods of time.

3.7.2 Fertiliser application

- A key consideration regarding fertiliser application during site works is to eliminate the risk of run-off into receiving waters. The following apply:
- Match fertiliser type and application rate to specific plots – aim to achieve successful establishment with the minimal level of fertiliser input possible. Do not apply fertiliser if it is not needed.
- Where available, granular formulations should be used to reduce the potential for drift and wash-off into receiving waters.
- Fertiliser application is not permitted within the water setback(*) or within 20 metres of the aquatic zone, whichever is greatest. Manual fertiliser application only is permitted from this point back to 50 metres from the aquatic zone.

  (* Apart from some limited exceptions – see Table 5.)
- Do not apply fertiliser if heavy rainfall is predicted, or during heavy rainfall and / or high winds. Following heavy rainfall, commence application only after the site has dried out sufficiently for runoff not to pose a risk.
- Apply fertiliser manually, where possible.
- Consider using alternative slow-release fertilisers in more sensitive parts of the site.

3.7.3 Vegetation management using herbicides and other methods

- Vegetation management during afforestation typically involves the use of herbicide. Regarding the use of pesticides, including herbicides:
- The use of pesticides is governed by the European Communities (Sustainable Use of Pesticides) Regulations 2012 (S.I.155/2012). Users of pesticides should familiarise themselves with these Regulations and adhere to them.
- Only a registered professional user can apply pesticides authorised for professional use. A professional user is any person who applies / sprays professional use products (regardless of the quantity or method of application), including operators, technicians, employees and self-employed people, both in the farming and other sectors.
- All users of pesticide products registered for professional use must follow the principles of Good Plant Protection Practice, available for download at PRCD - Guidance (agriculture.gov.ie)
- Appendix I to the above Good Plant Protection Practice document sets out general principles of integrated pest management, which all professional users are required to follow. Appendix II sets out other legal requirements relating to the safe use of plant protection products.
- Any pesticide to be used in forestry must be approved for use in Ireland. Details of approved products can be checked on the Pesticide Control Service section of the DAFM website (see www.pcs.agriculture.gov.ie).

Herbicide application within the forestry context must follow the principles of Good Plant Protection Practice.

A key consideration regarding herbicide application during site works is to eliminate the risk of runoff into receiving waters. The following apply:

- Aim to achieve successful establishment with the minimal level of herbicide input possible. Do not apply herbicides if they are not required.
- Do not apply herbicide if heavy rainfall is predicted, or during heavy rainfall and / or high winds. Following heavy rainfall, only recommence application after the site has dried out sufficiently for runoff not to pose a risk.
- Fully adhere to the manufacturer's instructions and also measures set out in the DAFM Forest Protection Guidelines and Guidelines for the Use of Herbicides in Forestry.
- Do not apply herbicides within the following areas, relying instead on non-herbicide methods such as trampling, mulches and mats:
    - within the water setback or within 20 metres of the aquatic zone, whichever is greatest;
    - within the water setback of a relevant watercourse or hotspot;
    - within specified distances from different types of water abstraction points, as prescribed by S.I.155/2012 – see Table 6;
    - within 15 metres of a landscape feature known to be a groundwater vulnerable area, including karst areas, sinkholes and collapse features; or
    - within a utilised building setback created for a dwelling.
- Herbicides are not permitted in sites within SACs without completing a risk assessment (this may form part of a NIS, where sought).

Table 6 Distances from different types of water abstraction points, within which pesticide (including herbicide) application is prohibited under Schedule 2 of S.I.155/2012.

Type of abstraction point	***Prohibited distance (metres)***
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 1 m^3 or less of water per day or serving 10 or less persons	5 m
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme 25 m supplying 1 - 10 m^3 of water per day or serving 10 - 50 persons	25 m
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme 100 m supplying 10 m^3 or more of water per day or serving 50 - 500 persons	100 m
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 100 m^3 or more of water per day or serving 500 or more persons	200 m

3.7.4 Other pesticide use

Other pesticides may be needed on rare occasions within the context of afforestation. In such cases, the above requirements regarding herbicides apply at a minimum, and more stringent measures may also be required. Regarding the risk of Pine Weevil outbreak (e.g. an afforestation site adjoining a recent conifer clearfell), any necessary dipping of planting stock must be carried out off-site in the forest nursery, with onsite application permitted only in response to an ongoing outbreak. Alternative control measures are encouraged, e.g. the use of larger planting stock.

3.7.5 Preparation, storage and use of potentially hazardous material

Spillage or leakage of fertilisers, herbicides (and other pesticides), fuel and machine oils can be highly damaging to the environment, especially water. The following apply regarding these materials:

- Minimise onsite storage and preparation.
- If unavoidable, store and prepare (if relevant) at a dry, elevated location at least 50 metres from any aquatic zone and at least 20 metres from all other water features (as listed in Table 1). This also applies to all machine refuelling, maintenance and repair work.
- Do not discharge any substance into an aquatic zone, relevant watercourse or hotspot, or into any drain or sediment trap.
- Do not rinse out containers onsite.
- Do not clean equipment within 50 metre of any aquatic zone or within 20 metres of any other water feature (as listed in Table 1). All wash waters must be disposed of carefully.
- Collect and retain spent machine oil for appropriate disposal off-site.
- Remove all empty fertiliser bags, grease cartridges, tree bags, pesticide and oil containers, and all general refuse, from the site during and after site works, for appropriate disposal off-site.
- Regarding pesticides (including herbicides), adhere to the principles of Good Plant Protection Practice (see Section 3.7.3) and to relevant sections of the *Forest Protection Guidelines* and *Guidelines for the Use of Herbicides in Forestry*.

3.8 Archaeological finds discovered during site works

Previously unidentified archaeological sites or artefacts may be exposed during the course of site work, particularly during cultivation and drainage. These include artefact scatters, objects such as pottery, flint and other stone artefacts, bronze or iron tools and quern stones, as well as burials and structural features such as the foundations of buried structures or trackways. For example, the presence of a spread of black soil or charcoal and burnt and heat-shattered stone is likely to indicate the presence of a levelled cooking place (i.e. a *fulacht fiadh*) or other human activity in the past.

If an archaeological find is discovered, the following applies:

- The Garda Síochána, the National Museum of Ireland or the National Monuments Service must be notified immediately.
- The archaeological object(s) or feature(s) must be left undisturbed. A minimum exclusion zone 20 metres in radius centred on its location, and preferably larger, must be immediately created until the site of the find has been investigated.
- Where an archaeological object is discovered other than by a qualified archaeologist operating under an excavation licence issued by the NMS, it must be reported in the same way as described in the Section 2.6.4.
- Where feasible, all operations should be switched to some other part of the afforestation site, as far away as practically possible, until the investigation is complete.

As outlined above, clear contingency planning must be in place covering the possibility whereby an unidentified archaeological site or object is discovered during site works.

3.9 Burning

Note that, under the Wildlife (Amendment) Act 2000, it is an offence to cut, grub, burn or otherwise destroy, during the period 1st March to the 31st August inclusive, any vegetation growing on any land not then cultivated.

Landowners wishing to carry out legally permitted prescribed burning must notify in writing all forest owners within one mile of the wood, and the local Garda station, between 7 and 35 days in advance of the burning operation. All burning operations should be notified to the Fire Service, via the control centre by telephoning 112/999 ***before*** burning commences. Landowners found burning illegally could face fines, imprisonment and Single Farm Payment penalties, where applicable.

Furthermore, under no circumstances should such material be burned on or near a known or suspected archaeological site or monument or other important built heritage structure or feature or within the archaeological setback / exclusion zone, as this could cause damage to the site, monument, structure or feature as well as to underlying archaeological deposits.

For further details, see the DAFM *Prescribed Burning: Code of Practice – Ireland* (https://www.gov.ie/en/publication/01773-fire-management/)

3.10 Form 2 submission

Where the project has received financial approval and the 1st grant instalment is being sought, the Registered Forester must walk the site within 2 months prior to submitting the relevant Form 2, and satisfy her- / himself that the plantation is compliant (inter alia) with all relevant measures set out in these Requirements and with all environmental conditions attached to the technical approval issued. If not, rectify any outstanding issue(s) before submitting the Form 2.

As set out in the current *Forestry Standards Manual*, a subsequent DAFM inspection may stipulate remedial works in cases where the plantation is not compliant.

Section 4: Ongoing Management

4.1 Overview

Stage 3: Ongoing Management spans the period from the completion of initial site works (and payment of the 1st grant instalment, if grant-aided) up to Year 15 (i.e. the end of the premium period, if applicable).

During this part of the forest rotation, there are generally no major site inputs required. However, basic environmental measures apply, in addition to any specific conditions attached to the original approval. Other silvicultural requirements also apply during the premium payment period, as set out in the Forestry Standards Manual (e.g. the maintenance of stocking levels, fence lines and fire breaks, fertiliser application) all of which must be carried out appropriately to prevent environmental impacts.

Key will be the ongoing monitoring of the site, to ensure compliance with silvicultural and environmental standards, requirements and conditions and also to check that potential threats to the environment do not emerge (particularly in relation to drains and sediment traps) and that various protective measures (principally setbacks) are functioning as intended.

4.2 Site inputs

Site inputs during Stage 3 are generally limited to the first 4 years up to submission of the Form 3 (if grant-aided). At this point, the forest should be fully established(*), with all plots having at least 90% of the original stocking spread evenly throughout the plot, with originally approved species represented proportionately, and with trees free from competing vegetation and free-growing (see the Forestry Standards Manual). Such inputs include herbicide application and possible fertiliser application, if nutrient deficiencies arise. Both inputs must adhere to measures set out in Sections 3.7.2 and 3.7.3 of these Requirements. (*Note, establishment may take longer on some sites.)

Regarding fertiliser application, assess exact requirements through a foliage analysis, following the procedures set out in the *Forestry Standards Manual*.

Ensure that any necessary filling-in prior to Form 3 submission reflects the diversity of the original planting, in relation to biodiversity and landscape.

4.3 Drains and sediment traps

Check drains and sediment traps regularly up to Year 4 and periodically thereafter, particularly during and after heavy rainfall, in order to assess how effectively they are working.

If sediment traps are filling up, clear out the built-up sediment and dispose of it on level ground several meters away. Where the drainage network and sediment traps are under pressure and signs of failure are evident, additional measures will be required, often in the form of additional sediment traps. In complex situations, the input of a hydrologist or an engineer may be required.

In most cases, drains will stabilise and ‘green-up’ with colonising vegetation over time.

4.4 Treatment of setbacks

As set out in Stage 1: Design and Stage 2: Site Works, the following setbacks, comprising (largely) unplanted and undisturbed open spaces of a defined width, are required to protect different environmental features and sensitivities:

- water setbacks
- retained habitat setbacks (including hedgerow setbacks)

- archaeological setbacks
- public road setbacks
- utilised building setbacks
- landscape setbacks

The treatment of these setbacks during Stage 3: Ongoing Management is as follows:

1. The intended protective function of these setbacks must be maintained throughout this stage of the forest's development. This generally entails leaving these areas undisturbed and allowing natural ground vegetation to develop. Management may be required in some cases, e.g. to control woody growth within a setback adjoining a dwelling, to retain an important view or to prevent fire risk.
2. Monitor the development of forest edge planting and environmental setback planting (where undertaken) and maintain trees as appropriate (e.g. vegetation management, replacement of mortalities, adjustment and eventual removal of tree shelters) until the trees are established and free of grazing pressure.
3. Adhere to the specifications set out in Table 5 regarding permitted operations within setbacks.
4. The type of natural vegetation that will emerge within the various setbacks will vary according to soil, elevation, aspect, grazing pressure, etc. On most sites, a mosaic of natural ground vegetation and pockets of woody growth will typically emerge throughout this stage.
5. Monitor and apply appropriate control to prevent the colonisation of setbacks by rhododendron and other exotic invasives. This requirement also applies to paths required in relation to 'designated' archaeological sites and monuments and 'designated' buildings and structures, to maintain access by archaeological officials.
6. The colonisation of the water setback with exotic invasives, in particular, Japanese knotweed, Himalayan balsam and rhododendron, is of significant concern regarding water quality. Where best practice involves herbicide use, consult with Inland Fisheries Ireland and other relevant bodies in advance. Controlling such species is difficult and expensive, and often requires a wider catchment approach for progress to be sustained.

Note, points 2 and 5 above also apply to the treatment of future operational areas (see Section 2.9) during this stage of the rotation.

A well-established water setback adjoining a broadleaf plot.

Appendix A

Environmental Considerations: Guidance for Registered Foresters

The following appendix lists (in the left hand column) the various questions in the Environmental Considerations section of iNET, and gives guidance (in the right hand column) in relation to the questions asked and the necessary responses based on the answers to those questions. The Environmental Considerations are structured according to a range of sensitivities upon which inappropriate afforestation may impact.

The purpose of the Environmental Considerations section is to fully align the assessment process with the environmental legislation, in particular Schedule 1 of S.I. No. 191 2017 (which transposes Annex IIA of the EIA Directive), and with the State Aid conditions underpinning the Forestry Programme 2023-2027. They also serve to structure the various checks Registered Foresters are required to undertake in relation to these key sensitivities. Many of these checks involve the Registered Forester consulting various GIS layers on iNET, and adding this to knowledge gained from his / her assessment of the proposed project area. A minority of the checks necessitate scrutiny of information outside of iFORIS (e.g. relevant County Development Plans) (see list below). The guidance also stipulates various ecology reports to be compiled, depending on (in most cases) overlap with the sensitivity involved (e.g. SAC, known hotspot areas for certain bird species). These reports are in addition to required mapping (including the Biodiversity Map and the Habitat Map), and are to be compiled by an individual who can demonstrate expertise by qualification(s) and / or competence in relation to the nature of the sensitivity involved.

The following is a list of datasets that are outside of iNET but are available in the public domain:

- Article 12 data for Hen Harrier: https://www.npws.ie/maps-and-data/habitat-and-species-data/article-12-data
- Data relating to individual subbasin defined under the Water Framework Directivehttps://gis.epa.ie/GetData/Download
- National Inventory of Architectural Heritage: https://www.buildingsofireland.ie/
- County Development Plan landscape maps: See the individual Local Authority CDPs at data.gov.ie
- Wetlands-related data can be requested from http://www.wetlandsurveysireland.com/wetlands/map-of-irish-wetlands/
- Data related to Irish Water may be available at https://www.water.ie/, potentially on request.
- Data related to the Irish National Federation of Group Water Schemes may be available at https://nfgws.ie/, potentially on request.

1.	**INELIGIBLE PROJECTS**	
1.1	Is project area wholly within a Curlew breeding buffer?	Under the Forestry Programme 2023-2027, and in keeping with State Aid conditions, DAFM policy is that afforestation within 1.5 km from a Curlew breeding site is not appropriate. This restriction is in light of the rapid decline of the native Curlew breeding population, and intended to prevent disturbance and to ensure that new forests do not provide habitat for predators close to the breeding site. NPWS provides DAFM with information on Curlew breeding sites. Due to its sensitive nature, this information, together with the 1.5 km buffer, is kept confidential. iNET undertakes a spatial check and if the entire project area lies within a 1.5 km Curlew breeding buffer, this is indicated. In such cases, the project area is not eligible for afforestation.
1.2	Is the project area wholly within a SPA?	Under the Forestry Programme 2023-2027, and in keeping with State Aid conditions, DAFM policy is that afforestation within a Special Protection Area (SPA) is not appropriate. Consult the SPA layer on iNET. If the project area is wholly within a SPA, it is not eligible for afforestation.
1.3	Is the project area wholly within one of the top eight Freshwater Pearl Mussel catchments?	Under the Forestry Programme 2023-2027, and in keeping with State Aid conditions, afforestation will not be permitted in any of the top 8 freshwater pearl mussel catchments, due to concerns regarding evapotranspiration and impact on the hydrological conditions required by this aquatic species. Consult the 'FPM Top Eight Catchments' layer on iNET. If the project area is wholly within one of these catchments, it is not eligible for afforestation.
1.4	Is the R+N score for the entire site less than 6.0?	Under the Forestry Programme 2023-2027, and in keeping with State Aid conditions, DAFM policy is that afforestation on sites with an R+N score of less than 6 is not appropriate. R+N score is a measure of site fertility and soil pH, based on plant species present on site. Full details regarding the R+N score and the methodology for assessing it are set out in *Land Types for Afforestation*. If the entire project area proposed for afforestation has an R+N score less than 6.0, it is not eligible for afforestation.

2.	SIZE OF THE PROJECT AREA	
2.1	Is the project area 50 hectares (ha) or greater?	If 'yes', an Environmental Impact Assessment Report (EIAR) must accompany the application. As stipulated in S.I. No. 191 of 2017, as amended, an EIAR must be submitted with any application, where the project area is 50 ha or greater. Schedule 4 of S.I. No. 191 of 2017 sets out the information to be provided by the Applicant in the EIAR. Additional information may also be requested by DAFM. DAFM undertakes the EIA in accordance with the EIA Directive (as amended) and transposing legislation, taking into account (*inter alia*) the submitted EIAR and other information submitted by the Applicant.

3.	SOIL AND WETLANDS	
3.1	Do all parts of the site meet the R+N score of 6.0 or greater?	If part(s) of the site has a R+N score of less than 6, the area involved must be excluded from the application. See the current *Land Types for Afforestation* for full details.
3.2	Does all of the project area contain the following eligible soil types, either individually or in combination with each other?: • mineral soil • organo-mineral soil with a peat depth of less than or equal to 30 cm • modified fen or modified cutaway raised bog that meets the requirements of the native woodland Forest Types and is capable of supporting the most relevant native woodland type identified for the site, without further drainage?	Consult available soil data (including available layers on iNET) to identify the soil type(s) on site, undertaking a soil survey, if necessary. See the current *Land Types for Afforestation* document for further details regarding the eligible soil types. If 'no', then either (i) or (ii) applies: (i) If all of the site comprises soils other than those listed, the site is considered unsuitable for afforestation and the application must not be submitted. (ii) If parts of the site comprise soils other than those listed, exclude these areas from the application and answer Qs. 3.2.1, 3.2.2 and 3.2.3 to indicate which of the eligible soil types are present. If 'yes', answer Qus. 3.2.1, 3.2.2 and 3.2.3 to indicate which of the eligible soil types are present.

3.2.1	Does the project area contain mineral soil?	Tick 'yes' or 'no', as appropriate.
3.2.2	Does the project area contain organo-mineral soil with a peat depth of less than or equal to 30 cm?	Tick 'yes' or 'no', as appropriate.
3.2.3	Does the project area contain modified fen or modified cutaway raised bog that meets the requirements of the native woodland Forest Types and is capable of supporting the most relevant native woodland type identified for the site, without further drainage?	Tick 'yes' or 'no', as appropriate. **Note:** The area(s) identified as meeting this soil type and associated requirement regarding native woodland FTs and nil drainage, is only eligible for planting one (or more) of the native woodland FTs. Furthermore, during site development for afforestation, additional drainage (i.e. the mechanical cultivation (soil disturbance) of the soil to lower the water table) must not take place in this area(s). The purpose of restriction is to limit soil disturbance/oxidation, which leads to a loss of carbon.
3.3	Does the project contain wetland habitats listed in the Irish Wetland Types – An Identification Guide and Field Survey Manual (Irish Ramsar Wetlands Committee, 2018)?	Tick 'yes' or 'no', as appropriate. A PDF version of the cited document is available at: RESOURCES - IRWC Outputs - Irish Ramsar Wetlands Committee (irishwetlands.ie) **Note:** Section 4 of the cited document gives visual examples of wetlands in landscape settings and lists the corresponding Fossitt habitats to each of the 'Ramsar' wetland habitats. If the site contains a listed wetland habitat(s), the area involved must not be planted - see ABE rules regarding eligibility for inclusion as an ABE.
3.4	Does the project contain an area listed in the Wetland Survey of Ireland?	Tick 'yes' or 'no', as appropriate. Consult the 'Irish Wetlands' layer on iNET. If the site contains an area included on the Map of Irish Wetlands by Wetland Survey of Ireland Ltd., the application must be accompanied by an ecology report giving details of the habitat(s) present within the wetland layer including dominant species, identifying, if present, the extent of the wetland habitat, assessment of potential impact of planting and any relevant mitigation. For further details, see www.wetlandsurveys.ie

4.	WATER	
4.1	Is the project area within an area designated as being potentially acid sensitive in relation to surface waters?	DAFM operates a protocol developed with the EPA and COFORD and designed to protect surface waters from acidification in areas of the country characterised by geology with a limited buffering capacity. This protocol involves water sampling and subsequent analysis – full details are set out as an Appendix H. Consult the relevant layer on iNET. Tick 'yes' or 'no', as appropriate. If 'yes', ➢ and the project comprises wholly of native woodland and / or agro-forestry, **no sampling is required** but clearly state native woodland or agro-forestry (with broadleaves only), as appropriate; ➢ for all other FTs, follow the procedures set out in Appendix H regarding water sampling and analysis, and submit results.
4.2	Is the project area greater than 5 ha and wholly or partially within an area identified as being sensitive for fisheries?	DAFM operates a protocol for afforestation applications in areas deemed by Inland Fisheries Ireland as being sensitive for fisheries. See Appendix I for details. As set out, referral to IFI takes place in defined situations and responses received are considered by DAFM as part of its assessment of the project. . Consult the relevant layer on iNET. Tick 'yes' or 'no', as appropriate. .
4.3	Is the project area greater than 40 ha and wholly outside of those areas identified as being sensitive to fisheries?	
4.4	Is the project area greater than 10 hectares and within a catchment area of Local Authority designated water scheme?	If the project is 10 ha or more (digitised area), consult Uisce Éireann and the National Federation of Group Water Schemes (NFGWS) spatial data layers on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. A 'yes' response triggers a referral to the relevant Local Authority.
4.5	Is the project area within a Zone of Contribution, Source Protection Area or 250 m buffer for a drinking water abstraction point?	Consult the relevant layers on iNET (i.e. Ground Water Abstraction Catchments, Group Water Abstraction Points 250m Buffer, and Group Water Zone of Contribution). Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. A 'yes' response triggers a referral to the relevant Local Authority.

The remainder of this section relates to the Water Framework Directive and specifically, to the current National River Basin Management Plan. The responses to these questions will indicate the sensitivity of relevant river and lake waterbodies, including waterbodies with a high status objective waterbodies, those at risk of decline, and those where forestry is listed as a pressure (either alone or together with other land uses) (as assessed by the EPA as part of its national characterisation of waterbodies, a process that feeds into the development of the current RBMP.) Consult the relevant layers on iNET and respond to each question individually.		
4.6	Is the project area within the sub-basin of a High Status Objective Waterbody?	If iNET indicates that the project area overlaps with the sub-basin of a High Status Objective Waterbody, additional requirements apply regarding the water setback, as detailed in Table 4 of the *Environmental Requirements for Afforestation*. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', apply the appropriate water setback to any aquatic zones adjoining or crossing the site.
4.7	Is the project area in the sub-basin of a waterbody where forestry is characterised as a pressure by the EPA (alone or alongside other pressures)?	See the following layers on iNET: ➢ 'River Waterbody Forestry Pressure' ➢ 'Lake Waterbody Forestry Pressure' ➢ 'Ground Waterbody Forestry Pressure' Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'.
4.8	Is the project area within or immediately upstream of the sub-basin of a River Waterbody deemed 'At Risk' or subject to Review under the relevant River Basin Management Plan?	See the 'At Risk/Review River Waterbodies' layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'.
4.9	Is the project area within or immediately upstream of the sub-basin of a River Waterbody, the status of which has been classed as 'Bad' or 'Moderate' under the current River Basin Management Plan?	See the 'River Waterbody Ecological Status Bad/Moderate' layer. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'.
4.10	Is the project area within or immediately upstream of the sub-basin of a Lake Waterbody deemed 'At Risk' or subject to	See the 'At Risk/Review Lake Waterbodies' layer. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'.

	Review under the relevant River Basin Management Plan?	
4.11	Is the project area within or immediately upstream of the sub-basin of a Lake Waterbody, the status of which has been classed as 'Bad' to 'Moderate' under the relevant River Basin Management Plan?	See the 'Lake Waterbody Ecological Status Bad/Moderate' layer. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'.

5.	**BIRDS & SPECIAL PROTECTION AREAS (SPAs)**	
5.1	Is the project area partially within a SPA?	Check iNET to see if the project partially overlaps with a Special Protection Area (SPA). A SPA is a European Site designated under the Birds Directive and Habitats Directive for the protection of certain species of birds (or 'Special Conservation Interests'). If 'yes', the area that overlaps the SPA must be excluded from the application.
5.2	Is the project area partially within a Curlew breeding buffer?	DAFM policy is that any afforestation within 1.5 km from a Curlew breeding site is not appropriate, in light of the declining native Curlew breeding population. Due to the confidential nature of this dataset, iNET checks this spatially and will indicate if overlap with the project area occurs. If overlap occurs, contact DAFM *via* Forest.Environment@agriculture.gov.ie (inserting 'Curlew Buffer' in the message bar and including location details and a map derived from an orthophoto (1:5,000 scale) with the proposed afforestation project clearly outlined in red). The area of the overlap will be excluded from the application.
5.3	Is the project area wholly or partially within the foraging range of a Special Conservation Interest of a SPA, as per the Bird Foraging Table?	Use the EPA website to generate a list of all the SPAs within 15 km of the project (see Appendix J) and export the table, which will include a list of the SCIs. Having identified the SPAs involved, consult the relevant entries in DAFM's Birds Foraging Table to see if overlap occurs. If overlap occurs provide the mandatory habitat map with photographs (overview and close up) of the habitats within the project area (location of photos must be shown on the Habitat Map

5.4	Is the project area wholly or partially within the BirdWatch Ireland (BWI) Breeding Wader Hotspot map?	Procedures are in place under the Forestry Programme 2023-2027, to ensure that afforestation does not impact on particular breeding bird species that are of conservation concern (or 'Red listed'). The species involved are Dunlin, Lapwing, Golden Plover, Snipe and Redshank (with Curlew addressed specifically by the breeding Curlew 1.5 km buffer). Consult the 'BWI Breeding Wader Hotspots' on iNET to see if overlap occurs. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes' proceed to Q5.4.1. If 'no', proceed to Q5.5.
5.4.1	Does the project area contain suitable habitat for Dunlin, Lapwing, Golden Plover, Snipe or Redshank? (Identify by overlaying BWI hotspot maps for individual species).	Consult the relevant layers on iNET, i.e. '10 km Grid – Dunlin', '10 km Grid - Golden Plover', etc. to establish if there is overlap with one or more species of concern. If 'no' (i.e. no overlap), **no further action is required**. If 'yes' (i.e. overlap occurs), ➢ a field survey is carried out to determine if there is suitable foraging and/or breeding habitat for the species identified. ➢ If no suitable habitat is present, this is recorded in the Breeding Wader Habitat Suitability Report. ➢ If there is suitable habitat, a suitably qualified person must complete a Breeding Wader Assessment Report. ➢ See Appendix C Breeding Wader Procedure for Afforestation.
5.5	Is the project area wholly or partially within a section of any Hen Harrier High Likelihood Nesting Area (HLNA) that extends outside of a SPA designated for breeding Hen Harriers?	DAFM policy is that any afforestation within a section of a Hen Harrier HLNA that extends outside of a SPA designated for breeding Hen Harrier, is not appropriate, in light of the possibility of impact on breeding Hen Harrier, directly (through the loss of breeding and/or foraging habitat) and / or indirectly (e.g. disturbance). Due to the confidential nature of this dataset, iNET checks this spatially and will indicate if overlap with the project area occurs. If overlap occurs, contact DAFM *via* Forest.Environment@agriculture.gov.ie (inserting 'Hen Harrier HLNA' in the message bar and including location details and a map derived from an orthophoto (1:5,000 scale) with the proposed afforestation project clearly outlined in red. The area of the overlap will be excluded from the application.

5.6	Is the project area wholly or partially within the Current Distribution and Breeding Distribution for Hen Harrier, as recorded in the current NPWS Article 12 Report?	The Article 12 report and data, published by NPWS as a requirement under the Birds Directive, details information regarding the distribution of certain protected bird species outside of SPAs. Included are regionally important areas for Hen Harrier, and if overlap occurs, DAFM will have to consider the potential impact of the afforestation project on known breeding sites and available foraging habitat. Consult the 'Hen Harrier Breeding Distribution' layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', the application must be accompanied bythe mandatory habitat and the Hen Harrier Site Inspection Form (detailed habitat description). See Appendix D Hen Harrier Article 12 Procedure for Afforestation.

6.	**OTHER AREAS DESIGNATED FOR NATURE CONSERVATION** Note, SPAs dealt with under Section 5: Birds.	
6.1	Is the project area partially or wholly within a SAC?	Check iNET to see if the project overlaps with a Special Area of Conservation (SAC), designated under the Habitats Directive and transposing legislation to protect certain habitats ('Annex 1 habitats') and species ('Annex 2 species'). Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', the application must be accompanied by a Natura Impact Statement (NIS), which will be considered by DAFM when it undertakes an appropriate assessment. See Appendix F for information on compiling a NIS and a NIS template, which must be adhered to when compiling the NIS. Note, a 'yes' response also triggers a referral to NPWS.

6.2	Is the project area partially or wholly within a NHA?	Under Regulation 19 of the Wildlife (amendment) Act 2000 certain works within National Heritage Areas (NHAs) require the permission of the Minister for Housing, Local Government, and Heritage. Check the NHA layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', the application must be accompanied by a completed NPWS form entitled "Application for permission to carry out works in a site to which the provisions of the Wildlife (Amendment) Act 2000 (Section 19) apply". Further information is available at https://www.npws.ie/farmers-and-landowners/activities-requiring-consent Note, a 'yes' response also triggers a referral to NPWS.
6.3	Is the project area partially or wholly within a proposed NHA, a Nature Reserve, or a National Park?	Check each of these layers on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', submit the mandatory habitat map, a description of the habitat (dominant species, structure) and photographs (overview and close up) of the habitats within the project area (location of photos must be shown on the Habitat Map). Note, a 'yes' response also triggers a referral to NPWS.

7.	**FRESHWATER PEARL MUSSEL (FPM)**	
7.1	Is the project area partially within one of the top eight FPM catchments?	Afforestation within any of the top 8 FPM catchments is not permitted. While sediment and nutrient release are key threats, impacts of evapotranspiration on hydrology, changes in flow patterns at a catchment scale and the need for natural habitats to supply feeding material are also recognised. Check the 'FPM Top Eight Catchments' layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', exclude the overlapping area from the project, before submitting the application to DAFM.

7.2	Is the project area partially or wholly within the catchment of any of the other 19 SACs designed for FPM?	Check the Freshwater Pearl Mussel layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'.
7.3	Is the project area within the 6 km zone associated with any of the other 19 SACs designated for FPM?	Check the Freshwater Pearl Mussel 6 km Zone layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', submit, if required, a completed Form A (Site Assessment) and Form B (Mitigation Measures) with the application – see pages 40 & 41 of the *Forestry & Freshwater Pearl Mussel Requirements* (DAFM, 2008). **Note:** When completing Form A and Form B, note down the rationale underpinning the responses given.
7.3.1	Based on the criteria set out in the Forestry & FPM Requirements, are completed Forms A and B required?	

8.	**HIGH NATURE VALUE FARMLAND (HNVf)**	
8.1	Is the project area within a HNVf area with a score of 0.5 SD or greater?	Check the High Nature Value Farmland layer on iNET. Tick 'yes' or 'no', as appropriate. If the overlap with the HNVF layer is is exclusively an application for Agroforestry (FT8) tick 'no' If the overlap with the HNVF layer is less than, or equal to, the minimum mapping unit size of 0.2 ha, as per the methodology set out in the Land Types for Afforestation, tick 'no' If no, proceed to Section 9. In all other cases tick 'yes'. If 'yes', proceed to Q8.2. If 'no', proceed to Section 9. See Appendix B High Nature Value Farmland (HNVf) Procedure for Afforestation. See Martin *et al.* (2020) for more information on HNV farmland.
8.2	Does the project area wholly comprise intensively-managed farmland?	If 'yes', the following information is required@ 1. A **habitat map** (mandatory for all applications) of the proposed area to Fossitt level 3 with clear labels for each habitat (e.g. GS4, GA1, WL1, WS1). Open habitats (e.g. grassland) that vary

		significantly in species composition/richness must be clearly labelled and the boundary outlined with an additional number to distinguish them within the map (e.g. GS4a, GS4b, etc.). These **habitat unit labels** will be used throughout the HNVf assessment. Sample Plot locations must be also clearly marked on the map or submitted in a separate map if need be. 2. A **HNVf field card** for each open habitat unit. 3. A **HNVf Sample Plot Form** for each open habitat unit, listing the plant species and their % cover in a representative 2 m x 2 m sample plot. This sample plot must correspond to a habitat unit label and sample plot location on the habitat map. 4. Photographs See Appendix B High Nature Value Farmland (HNVf) Procedure for Afforestation.
8.3	Does the project area include any extensively managed farmland?	
8.3.1	Does the project area overlap with the Irish Semi-Natural Grasslands Survey layer?	Check the 'Irish Semi-Natural Grasslands Survey 2007-2012' layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', record a HNVf Sample Plot from within the overlap area (Habitat unit may be greater than overlap area and if so, there must be a sample plot from within and outside of the overlap area).
8.3.2	Does the project area contain an area(s) having the characteristics of an Annex I habitat(s)?	Of the 230 habitats listed under Annex 1 of the Habitats Directive, only 59 occur in Ireland. Furthermore, only a small number of these are likely to overlap with the types of sites considered for afforestation, especially in light of the new requirements regarding soil type and fertility, as set out in the *Land Types for Afforestation*. Fossitt's *A Guide to Habitats in Ireland* includes possible links between the habitats classified and Annex 1 habitats. The habitat assessment (Q8.3) will identify and assess if the application includes Annex I habitat or areas characteristic of Annex I habitat (e.g. positive indicators present but not the required number). Also see Appendix E for References for Criteria for Identifying Annex I Habitats. If Annex 1 habitat is present on the site, it must not be planted. Annex I habitat or areas with characteristics of Annex I may be eligible as an Area for Biodiversity Enhancement (ABE)
8.3.3	Does the project areas overlap with the BirdWatch Ireland Farmland Birds Hotspot map?	Check the 'BWI Farmland Bird Hotspots ' layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'.

8.3.3.1	Does the project contain suitable habitat for the particular species of concern?	Tick 'yes' or 'no', as appropriate.

9.	**OTHER HABITATS (Complete this section only if Qu.8.1 is 'NO').** **Note:** This section is only completed if the project area is <u>not</u> within the HNVf layer on iNET	
9.1	Does the project area overlap with the Irish Semi-Natural Grasslands Survey layer?	Semi-natural grasslands are important biodiversity reservoirs and perform a range of ecosystem services. The ISGS took place between 2007 and 2012 and surveyed a 1,192 grassland sites covering 23,1881.1ha of land. Check the 'Irish Semi-Natural Grasslands Survey 2007-2012' layer on iNET. Tick 'yes' or 'no', as appropriate. If any overlap occurs, tick 'yes'. If 'yes', submit the mandatory habitat map, a description of the habitat (dominant species, structure) and photographs (overview and close up) of the habitats within the project area (location of photos must be shown on the Habitat Map).
9.2	Does the project area contain Annex I habitat(s)?	There are 59 Annex 1 habitats in Ireland, listed under Annex 1 of the EU Habitats Directive. However, only a small number of the grassland/heaths/peatland habitats listed are likely to overlap with the types of sites presented for afforestation, especially in light of the new requirements regarding soil type and fertility, as set out in *Land Types for Afforestation*. Fossitt's *A Guide to Habitats in Ireland* includes possible links between the habitats classified and Annex 1 habitats. The site assessment including Habitat Map should indicate whether additional assessment is required for Annex I habitat. If Annex I habitat is likely to be present, a habitat survey during the growing season (June to September) and following the surveying methodology for the Annex 1 habitat suspected, is required, to confirm either way.

		If Annex 1 habitat is present on the site, it must not be planted. Annex 1 habitat may be eligible as an Area for Biodiversity Enhancement. Otherwise, exclude from the application.

10.	**ARCHAEOLOGY AND BUILT HERITAGE** **Note:** Any overlap will result in a necessary referral to the Archaeology and Built Heritage Section within the Forestry Inspectorate, and onward referral to the National Monuments Service where statutorily required or considered warranted.	
10.1	Does the project area contain or adjoin a listed archaeological site or monument?	Consult the relevant NMS Monuments layers on iNET.
10.2	Does the project area contain or adjoin a listed archaeological site or monument with intensive public usage, e.g. a National Monument in State or Local Authority Ownership, in Guardianship or with a Preservation Order, or an abbey, church, graveyard or children's burial ground?	These are sites and monuments where there is likely to be a regular pattern of either local or tourist visits. These can include National Monuments, a monument near a 'Way-Marked Way' walking route or other walking route such as the 'Pilgrims Path series', a monument on a local tourist map or with important local religious or cultural significance and where there is regular or seasonal attendance. National Monuments in State or Local Authority Ownership or Guardianship or with a Preservation Order, which are usually distinguished on the ground by a small concrete pillar or plaque on the wall with a Fógra or Notice on it. Many National Monuments vested in 40s, 50s, and 60s will have a traditional 'green and white' signpost or a more recently erected 'brown and white' Local Authority signpost. Most National Monument are high visibility upstanding Prehistoric monuments such as megalithic tombs and stone circles or Early Christian and Medieval structures and sites such as Castles, Abbeys, Churches, or monastic burial grounds and enclosures. Many National Monuments are included in popular tourist guidebooks such as Harbison's Guide to the National and Historic Monuments of Ireland.
10.3	Is the project area adjacent, i.e. within 200 m of, a listed archaeological site or monument?	Consult the relevant NMS Monuments layers on iNET.
10.4	Is the project area within or adjoining an Archaeological Area, a Zone of Archaeological Amenity, a World Heritage Site, a site on the Tentative	An 'Archaeological Area' means an area listed as such in the Register of Historic Monuments (RHM) under the National Monuments (Amendments) Act 1987. Consult the relevant NMS Monuments layers on iNET, as all such areas are captured in the NMS Monuments 2007 layer.

	List of World Heritage Sites, or a historic battlefield?	A 'Zone of Archaeological Amenity' or 'Zone of Archaeological Potential' is an area that has been identified by the National Monuments Service as being important for the protection and preservation of an archaeological site or monument or group or related archaeological sites or monuments as well as the integrity of their setting or settings. The list is issued on a non-statutory basis to the various Local Authorities, which in turn incorporate them into their respective County Development Plan. Pending the preparation of a national spatial dataset, the relevant County Council Development Plan will need to be consulted in relation to both Architectural Conservation Areas (ACAs) and Protected Structures for certainty. A 'World Heritage Site' means a site inscribed on the World Heritage List under the UNESCO World Heritage Convention. A 'Tentative World Heritage Site' means a site the State considers demonstrates potential Outstanding Universal Value to humanity and is suitable for nomination to the World Heritage List. Details of the 'World Heritage Sites' and 'Tentative World Heritage Sites' in Ireland can be obtained here: Tentative Property Archives - World Heritage Ireland There are two main sources of information for battlefield locations: (i) battlefields listed by the National Monuments Service in its SMR database and its Historic Environment Viewer (HEV); and (ii) battlefields depicted on the OSI 1:50,000 scale Discovery Map. Consult the relevant NMS Monuments layers and OSI 1:50,000 scale Discovery Map on iNET.
10.5	Does the project area contain or adjoin a Protected Structure or a building or structure in the National Inventory of Architectural Heritage?	Consult the relevant National Inventory of Architectural Heritage (NIAH) layer on iNET. There is a considerable coincidence between buildings and structures listed in the NIAH and Protected Structures in the relevant County Council Development Plan. However, pending the preparation of a national RPS and rural ACA spatial dataset, the relevant County Council Development Plan will need to be consulted in relation to both Architectural Conservation Areas and Records of Protected Structures for certainty.
10.6	Is the project area within or adjoining a rural Architectural Conservation Area?	As with Protected Structures, pending the preparation of a national spatial dataset, the relevant County Council Development Plan may need to be consulted in relation to Architectural Conservation Areas.

11.	LANDSCAPE & AMENITY	
11.1	Is the project area within an area identified in the relevant County Development Plan as being sensitive for landscape / amenity?	Check the 'CDP – Landscape Jan 2023' layer on iNET, and where an overlap occurs, investigate supporting details in the relevant County Development Plan. If 'yes', provide details in the free text box provided (or alternatively, submit a report), citing the relevant section(s) / map(s) within the CPD, submit a report and detailing any mitigating factors or measures that apply, should the project proceed. If a report is required, consider including panoramic photos taken at vantage points overlooking the project area and depicting the footprint of the project area and how the new forest will appear visually in (e.g.) 30 years. .
11.2	Is there potential for the project to impact on any locally-important amenity that may not be officially designated but still used and enjoyed by the local community?	Based on local knowledge, including that of the Applicant and the Registered Forester, through direct experience, local papers, media, history, etc. If 'yes', provide details in the free text box provided (or alternatively, submit a report), setting out justification for the project to proceed and detailing any relevant mitigating factors or measures.

12	OTHER ENVIRONMENTAL CONSIDERATIONS	
12.1	In addition to the various environmental sensitivities identified during the course of completing the above questions, are there any other environmental considerations pertaining to the proposed project area?	Environmental sensitivities may exist other than those detailed above. Examples of specific species include Marsh Fritillary and Small White Orchid). If 'yes', provide details in the free text box provided (or alternatively, submit a report), set out justification for the project to proceed and detailing any relevant mitigating factors or measures.

<table>
<tr><td>13.</td><td colspan="2">Description of aspects of the environment that are likely to be significantly affected by the afforestation project</td></tr>
<tr><td></td><td>Considering:
a) the characteristics of the project, as summarised above and detailed in the application;
b) the location of the project, with particular regard to the environmental sensitivity of geographical areas identified above that could be affected; and
c) the type and characteristics of potential impacts;
and where these matters are further elaborated upon in Schedule 3 of the Forestry Regulations 2017, are any of the following likely to be significantly affected by the project?</td><td rowspan="9">The EIA Directive (Directive 2011/92/EU, as amended) requires Member States to make a determination whether or not certain classes of project require an EIA on a case-by-case basis. This includes initial afforestation and in Ireland it applies to all initial afforestation projects less than 50 ha in size. (Projects 50 ha or more must undergo an EIA, and DAFM requires the submission of an EIA Report with the application.)
The EIA Directive (Article 4(4)) also requires Applicants for such projects to submit certain information about the project with the application, which DAFM must then have regard to when making that determination.
The specific information requirements are set out in Annex IIA of the Directive and transposed by Schedule 1 of S.I. No. 191 of 2017. It requires of the Applicant to:
➢ Take into account the available results of other relevant assessments of the effects on the environment carried out pursuant to Union legislation other than the EIA Directive;
This could include: (i) the Water Framework Directive (2000/60/EC) (e.g. waterbody status); (ii) the Habitats Directive (e.g. Conservation Objectives of a particular SAC); or (iii) the SEA Directive (2001/42/EC) and whether local land use plans (e.g. County Development Plans) contain specific reservations against the project type.
➢ Compile the information taking into account the criteria set out in Annex III of the Directive and transposed by Schedule 3 of S.I. No. 191 of 2017 (the Forestry Regulations 2017). That schedule speaks to sensitivities which may arise from the characteristics of the project, the location of the project; and/or the type and characteristics of potential impacts.</td></tr>
<tr><td>13.1</td><td>Wetlands, riparian areas, or river mouths?</td></tr>
<tr><td>13.2</td><td>Coastal zones and the marine environment?</td></tr>
<tr><td>13.3</td><td>Mountain and forest areas?</td></tr>
<tr><td>13.4</td><td>NHAs, pNHAs, SACs, SPAs, Nature Reserves or National Parks?</td></tr>
<tr><td>13.5</td><td>Environmental quality standards, laid down in EU legislation and relevant to the project, or in which it is considered that there is such a failure?</td></tr>
<tr><td>13.6</td><td>Densely populated areas?</td></tr>
<tr><td>13.7</td><td>Landscapes and sites of historical, cultural or archaeological significance?</td></tr>
<tr><td colspan="2"></td></tr>
</table>

		At their discretion, the Applicant may also provide a description of any features of the project, and/or measures envisaged, to avoid or prevent what might otherwise be significant adverse effects on the environment. DAFM is entitled to take such details into account. The information submitted by the Applicant is intended to assist DAFM in assessing the project as to the need for a sub-threshold EIA in the light of the selection criteria laid down in Annex III / Schedule 4. However, it is a 'good faith' assessment and submission by the Applicant. Responsibility ultimately rests with DAFM to ensure all relevant information requirements are fulfilled before making its determination. **If 'yes' to any of the above Qus. 13.1 to 13.7, the application must be accompanied by a report setting out how it is intended prevent, reduce, or manage potential impacts from the project.**
13.8	To the extent of the information available, are any residues, emissions or waste expected to arise from the project?	**Information on Waste, Emissions and Residues** A processing residue is a substance that is not the end product(s) that a production process directly seeks to produce. It is not a primary aim of the production process and the process has not been deliberately modified to produce it. In the Industrial Emissions Directive, an 'emission' is defined as the direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources in the project, into air, water or land. EU law requires that all waste must be treated in an environmentally sound manner. Waste is defined as any substance or object which the holder discards or intends to or is required to discard. Examples of waste recovery include: (i) recycling; (ii) use as a fuel or other means to generate energy; or (iii) land spreading as a fertiliser if done properly in accordance with a plan. Examples that are not waste include: (i) uncontaminated soil and other naturally occurring material excavated in construction operations for certain use on the site of origin; and (ii) saw dust that the holder plans to use beneficially, or which the holder intends to sell for use for animal bedding or to make MDF. The foregoing may include, but are not limited, to:
13.8.1	Are any significant effects on the environment likely from those residues, emissions or waste from the project?	

		➢ Planting bags, which may be recovered for re-use by the nursery. ➢ Oil and oil containers, which are required to be stored correctly and removed following operations. ➢ Fuel and fuel containers, which are required to be stored correctly and removed following operations. ➢ Any other fluid containers, which are required to be stored correctly and removed following operations. ➢ Lop-and-top and brash created or used during the operational phase of the project, which can be re-used as a nutrient source. Further information regarding good environmental practice with regard to waste and residues can be found in the *Environmental Requirements for Afforestation* 3.7.5. If 'yes' to Qu.13.8, will the residues, emissions or waste produced have a significant environmental effect. If so, a report is required, detailing measures that will be taken to prevent, reduce, or manage the residues, emissions or waste outlined above.
13.9	To the extent of the information available, are any significant effects on the environment expected to result from the project through the use of natural resources, in particular soil, land, water and biodiversity?	Using the available information regarding the site and surrounding area, combined with the intended project works and submitted documentation, answer the question to the best of your ability. If 'yes', the application must be accompanied by a report setting out how it is intended prevent, reduce, or manage any significant effects on the environment expected to result from the project through the use of natural resources, in particular soil, land, water and biodiversity.

14.	**Mitigation Measures**	
14.1	In coming to the conclusions on the likelihood of significant effects on the environment resulting from the project, has account been taken of any mitigation measures intended to avoid or effectively reduce impacts?	In <u>your</u> assessment of the project's influence on the environment, have you taken into account proposed mitigation measures to influence your assessment?

		Mitigation measures include any planned actions to reduce the environmental effects of the project. Tick 'yes' or 'no', as appropriate.
14.1.1	If 'yes', are the mitigation measures referred to standard mitigation measures which have been incorporated into the project design?	Standard mitigations are those outlined in the forest policy, in the individual scheme documents, and also in any associated requirements, standards and guidance (including but not limited to the *Environmental Requirements for Afforestation*). Tick 'yes' or 'no', as appropriate. If 'yes', go to Qu.14.1.1.1 If 'no', go to Qu.14.2
14.1.1.1	**Which of the following standard mitigation measures have been incorporated into the project design? (Note, specifics regarding widths, locations, etc. must be identified on the submitted Biodiversity Map.)**	
	Water setback(s), in relation to aquatic zones, relevant watercourses, water-related hotspots, and water abstraction points, on and adjoining the project area	
	Habitat setback(s), in relation to existing habitats on and adjoining the project area (including hedgerows)	
	Archaeology setback(s), in relation to archaeology and built heritage features on or adjoining the site	
	Public road setback(s)	
	Utilised building setback(s)	
	Landscape setback(s)	
	Planting of native broadleaves within 7 m of all hedgerows (from centreline)	
	Planting of additional rows of broadleaves to reinforce setback(s)	
	Retention of rights-of-way held by 3rd parties	
	Exclusion of areas with turbary or grazing rights held by 3rd parties	
	Exclusion of major water mains corridors	
	Exclusion of powerline corridors	

	Exclusion of gas pipeline corridors	
14.2	Have any non-standard mitigation measures been incorporated into the project design?	A non-standard mitigations is any mitigation that is not outlined in the forest policy, in the individual scheme documents, and also in any associated requirements, standards and guidance (including but not limited to the *Environmental Requirements for Afforestation*). Tick 'yes' or 'no', as appropriate. If 'yes', specify the non-standard mitigation measures involved, and identify on the submitted Biodiversity Map.

Appendix B

High Nature Value Farmland (HNVf) Procedure for Afforestation

1. Introduction

High Nature Value farmland (HNVf) refers to areas where *"agriculture sustains or is associated with either a high species and habitat diversity, or the presence of species of European conservation concern, or both"* (Andersen *et al.*, 2003).

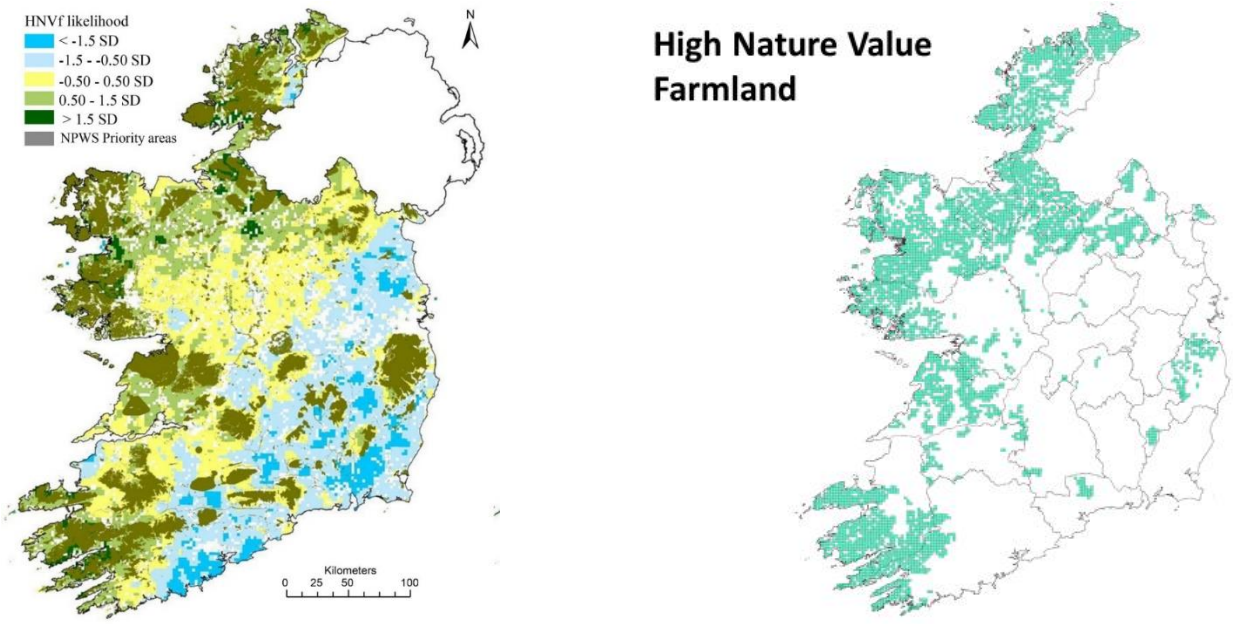
There are three types of HNVf (as defined by Andersen *et al.* (2003)).

- Type 1: Farmland with a high proportion of semi-natural vegetation.
- Type 2: Farmland dominated by low intensity agriculture or a mosaic of semi-natural and cultivated land and small-scale features.
- Type 3: Farmland supporting rare species or a high proportion of European or world populations.

Type 3 HNVf is addressed by DAFM through separate procedures in relation to Appropriate Assessment, NHAs/pNHAs, water quality and specific species (e.g. for Hen Harrier, Breeding Waders, Curlew and Freshwater Pearl Mussel). Type 1 (semi-natural vegetation) and Type 2 (mosaic) HNVf are assessed in the HNVf Procedure for Afforestation, as detailed here. For the remainder of this procedure, "HNVf" refers only to Types 1 and 2.

The objective of this assessment is to determine if the proposed afforestation will significantly negatively impact HNVf. DAFM assesses risk to HNVf firstly at a landscape level, using the indicative HNVf map of Ireland by Matin *et al.* (2020; see Figure 1). Areas identified as having a value of 0.5 SD HNVf or greater on this map are now incorporated into iNET and iFORIS. Afforestation applications, apart from agroforestry, within this layer are subject to further assessment. Potential impacts to HNVf are identified at a field level using information provided by the Registered Forester, or the Ecologist engaged by the Registered Forester.

Figure 1 Indicative HNVf map of Ireland (Matin *et al.*, 2020) (left) and HNVf areas with value of 0.5 SD or greater incorporated into iNET and iFORIS (right).



2. Applying the HNVf Procedure

To be completed by a suitably qualified and experienced Ecologists and/or a Registered Forester with sufficient training and experience in habitat and grassland plant identification.

Note that inaccurate, incomplete or misleading information will delay processing, and may result in a refusal of the entire application

2.1 HNVf desktop review

The first step in the procedure is to undertake a desk review.

1. Check if any of the application overlaps the **HNVf layer on INET**. Afforestation applications within the HNVf layer on iNET **must be assessed for HNVf** unless the following applies:
    a. The overlap with the HNVF layer is exclusively an application for Agroforestry (FT8).
    b. The overlap with the HNVF layer is less than, or equal to, the minimum mapping unit size of 0.2 ha, as per the methodology set out in the Land Types for Afforestation.

   Where an application partially overlaps the HNVf layer and that overlap is greater than 0.2 ha (and is not FT8), the overlapping area only must be assessed for HNVf.
2. The HNVf layer often coincides with other environmental constraints. In particular, ensure the following grassland/open habitat constraints are addressed (see separate sections on these constraints):
    a. Peat soils.
    b. R+N score.
    c. Application within the Irish Semi-Natural Grassland Survey layer.
    d. RAMSAR wetland habitats (e.g. wet heath (HH3), Marsh (GM1) and swamps (FS1,FS2)).

3. Prepare for a HNVf field survey. **Templates for HNVf reports are available separately on the DAFM website – see https://www.gov.ie/en/publication/regulation-forest-health-and-resources/** Sufficient amounts of these should be printed off and completed during the survey. There are four main parts to each HNVf survey (which are discussed in more detail below):
    a. Habitat Map;
    b. HNVf Fieldcard;
    c. HNVf Sample Plots; and
    d. Site photos.
4. Prior to the field survey, look at aerial imagery of the application and plan the survey route. Identify changes in vegetation colour within plots, as these may indicate changes in habitat type/species composition.

2.2 HNVf field survey

5. The HNVf field survey must be conducted by a suitably qualified and experienced Ecologist and/or by a Registered Forester with sufficient training and experience in habitat and grassland plant identification.
6. It is strongly recommended that HNVf field surveys are conducted between May and September (inclusive). It is difficult to identify many of the indicator plant species outside these months. HNVf reports based on surveys outside these months may be returned to the Applicant for re-surveyed.
7. The HNVf field survey must be conducted when there is sufficient growth and flowering present. Surveys conducted shortly after silage/hay harvesting or intense grazing sessions generally do not have sufficient flowering heads present for identification purposes, and reports based on surveys at such times may be returned to the Applicant for re-survey.
8. Inaccurate, incomplete or misleading information will delay processing and may result in a refusal of the entire application.

2.3 Habitat Map

Complete a **Habitat Map** of the proposed area to Fossitt level 3, using clear labels for each habitat (e.g. GS4, GA1, WL1, WS1). Open habitats (e.g. grassland) that vary significantly in species composition/richness must be clearly distinguishable on the map and labelled with an additional number (e.g. GS4a, GS4b). These **habitat unit labels** will be used throughout the HNVf assessment. Locations of linear habitats (hedgerows, treelines, watercourses) must also be clearly identifiable. See *Forestry Standards Manual* and Circular 13 / 2020 for the requirements regarding the compilation of the Current Environment and Habitat Map.

The habitat map must also include the following (separate maps can be submitted to avoid cluttering):

1. The location of the HNVf sample plots taken (details of these plots are given below)).
2. The locations of non-native invasive species (e.g. Japanese knotweed, Rhododendron, Giant rhubarb). See https://invasives.ie/about/irelands-invasive-species/ for more information.
3. The location of any identified resting/breeding locations of protected species (e.g. badger setts, bat roosts)

2.4 HNVf Fieldcards

The following link to the DAFM website provides a template HNVf Fieldcard: **https://www.gov.ie/en/publication/regulation-forest-health-and-resources/** This template is based on a modified version of the grassland scorecard used in the DAFM ACRES (Agri-Climate Rural Environment Scheme), which uses

particular indicator species (along with other features) to identify areas of low farming intensity/high biodiversity. This fieldcard requires the surveyor to walk each habitat in a 'W' pattern, identifying the indicator plant species and other features as they go.

2.5 HNVf Sample plots

The following link to the DAFM website provides a template HNVf Sample Plot recording sheet: **https://www.gov.ie/en/publication/regulation-forest-health-and-resources/** Complete one for each open habitat unit proposed for planting (not ABE areas or retained scrub / woodland), listing the plant species and their percentage cover in a representative 2 m x 2 m sample plot. This sample plot must correspond to a habitat unit label and sample plot location on the Habitat Map. A clear and focused photograph of each sample plot must also be submitted.

2.6 Representative photographs

The following photos must be included for each open habitat with a completed HNVf Fieldcard and Sample Plot recording sheet:

- a photo of the sward within the sample plot itself, taken from a standing position looking down; and
- an overview photo of the habitat in question, taken looking out across the habitat.

Each photo must be clearly labelled with the number of the corresponding sample plot number and habitat unit label (as mapped in the Habitat map). Photographs of features of note, e.g. field boundaries, aquatic zones, relevant watercourses, etc. should also be included, and their location shown on the Habitat Map.

All photos must be in colour, clear and in focus.

3. Mandatory HNVf measures

The following HNVF measures, designed to provide enhancement at a landscape level, must be applied to those areas overlapping with the HNVf layer, be it the entire project area or a part(s) thereof:

1. All native broadleaf trees are to be retained.
2. All native hedgerows, native treelines and drystone walls are to be retained.
3. All native hedgerows, native treelines and drystone walls require a minimum 5 m unplanted setback from them.
4. Any non-native invasive species present must have a comprehensive **Invasive Species Management plant (ISMP)** submitted, detailing how their spread will be prevented, and how they will be managed overtime. Examples include *Rhododendron ponticum*, Japanese knotweed, Giant Rhubarb and Himalayan balsam). It is an offence to spread or cause to grow species listed on the Third Schedule list of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I.477/2011) (see https://invasives.ie/about/irelands-invasive-species/ for details). Guidelines for the control of individual species is available at https://invasives.ie/resources/
5. Areas of scrub (e.g. elder) and non-high forest species (e.g. blackthorn, hawthorn, willow), but not including European gorse scrub, must be retained as ABE or excluded. Areas of scrub that meet the requirements of FT5: Emergent Forest may be submitted under that FT, as discrete plots.

4. Submission of the HNVf report and assessment by DAFM

The finalised HNVf report comprising the above elements will be uploaded by the Registered Forester through iNET, on behalf of the Applicant. A DAFM Ecologist will then review the HNVf report and complete a separate DAFM HNVf Review Form based on the information provided. This will generally result in one of four outcomes:

1. Applications with inaccurate, incomplete or misleading information may require requests for additional information and/or outright refusal.
2. Application areas that are identified as having a **Low HNVf value** will be eligible for all types of afforestation, with the mandatory HNVf measures applied.
3. Application areas that are identified as having a **Moderate HNVf value** will be eligible for broadleaf woodland forest types (i.e. FT1 to FT9, with the exception that FT9 (Seed Orchards) must comprise broadleaf species).
4. Application areas that are identified as having a **High HNVf value** will not be eligible for afforestation.

5. HNVf additional resources

HNVf report templates: Templates for the various elements of the HNVf report are available separately on the DAFM website **https://www.gov.ie/en/publication/regulation-forest-health-and-resources/**

Habitat classifications: Fossit, J., 2000. A Classification of Irish Habitats. Heritage Council Ireland. https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf

Assessing Annex I habitat potential:

See Appendix 1 of Fossit (2000) for Annex habitats associated with each Fossit habitat.

See Appendix 1 of Irish Wildlife Manual 78 for assessment criteria for Annex 1 grassland habitats: https://www.npws.ie/sites/default/files/publications/pdf/A%20Guide%20to%20Habitats%20in%20Ireland%20-%20Fossitt.pdf

See Appendix V of Irish Manual 79 for assessment criteria for Annex 1 heaths and other upland habitats:

https://www.npws.ie/sites/default/files/publications/pdf/IWM79.pdf

RAMSAR Wetland Habitats: Irish Ramsar Wetlands Committee, 2018. Irish Wetland Types – an identification guide and field survey manual. EPA, Johnstown Castle, Ireland. https://www.npws.ie/sites/default/files/general/irish-wetlands-guide.pdf

ACRES Farmland Plant Identification Keys and tip sheets:

https://www.gov.ie/pdf/?file=https://assets.gov.ie/236151/13c6a792-ada9-440c-8203-b95282fe4edf.pdf#page=null

https://www.gov.ie/pdf/?file=https://assets.gov.ie/260067/90b0f317-63ae-4621-8a18-e827b96953ea.pdf#page=null

Invasive species: https://invasives.ie/resources/

Appendix C
Breeding Wader Procedure for Afforestation

1. Introduction

Under the Forestry Programme 2023 – 2027, DAFM, when assessing afforestation applications, takes into consideration potential impacts on breeding waders, using the procedure described below. This procedure is underpinned by BirdWatch Ireland's (BWI) Breeding Wader Hotspot map and individual species maps for Lapwing, Redshank, Dunlin, Golden Plover and Snipe (i.e. species of concern), all of which have been incorporated into iFORIS and iNET. Note, breeding Curlew is not included in this procedure as a separate procedure applies, based on the exclusion of afforestation within a 1.5 km radius buffer applied to known breeding sites.

The following procedure requires the completion of various forms, as described. Templates for each of these are found using the following link: **https://www.gov.ie/en/publication/regulation-forest-health-and-resources/**

2. Procedure for the Registered Forester

During the development of the application for afforestation, the Registered Forester applies the following procedure.

a) Check if the afforestation application overlaps with the Breeding Wader Hotspot Map, using iNET.

b) If overlap occurs, check the individual species maps to identify the species of concern (note that there may be overlap with more than one species map). If there is overlap with one or more of the species maps, these are the species that must be considered in the assessment.

c) If there is no overlap with any of the individual species maps, a habitat suitability assessment is not required and no further action is needed.

d) If overlap occurs with one or more of the individual species maps, a field assessment of the site is required to identify if there is suitable foraging and/or breeding habitat for the species identified. This is documented in the Breeding Wader Habitat Suitability Report. Note that the assessment and conclusion must address each species identified as being of concern individually.

e) Determine the habitat suitability for breeding/foraging, using an initial desktop survey to gauge the habitats present on the site and its environs. A field survey must be carried out to further assess the site's habitat suitability, and to look at site specifics such as the percentage cover of vegetation, sward height, etc. Complete the Breeding Wader Habitat Suitability Report. Either full bird species names or BTO species codes must be used.

f) If no suitable habitat is present on site, this must be recorded in the Conclusion Statement and the report submitted with the afforestation application. Note, photographs must be included in the report.

g) If suitable habitat is present, a suitably qualified person must provide a report comprising an assessment of the afforestation application with conclusions including the impact on the species of concern, if the site was planted. This must follow the Breeding Wader Assessment Report template. It must take into account pressures and threats (e.g. predation, the fragmentation and loss of habitat) on the species of concern. It must provide a definitive conclusion in relation to the potential impact of the proposed afforestation, and whether or not planting can proceed. In addition, it must specify if specific mitigations are required. **NOTE:** If planting the site is likely to have an impact on the species of concern, the application must not be submitted to DAFM.

h) Where two or more species of concern are involved, they must be dealt with individually in the reports.

3. Field survey and associated reports

The following describes the reporting requirements arising in relation to points (d) to (h) above.

Before carrying out the necessary field survey, surveyors must first familiarise themselves with this Breeding Wader Procedure for Afforestation, and the habitat requirements and behaviour of the species. A Breeding Wader Habitat Suitability Report must be completed for all applications where there is overlap with species of concern but the Breeding Wader Assessment Report is only completed if there is suitable habitat present on site.

Report templates are available on the DAFM website **https://www.gov.ie/en/publication/regulation-forest-health-and-resources/**

The *Breeding Wader Habitat Suitability Report*[1] must be completed during the survey visit itself and should be accompanied by a map of the proposed application site and its immediate environs. It records general site information and specific features to allow the assessment of the suitability of the site for the species in question, in relation to its required breeding and foraging habitat. A brief scan of the area must first be carried out by the surveyor in order to ascertain whether waders are currently using the site or adjoining landholdings. Any incidental sightings should also be recorded thereafter. **Note:** The following photographs must be attached to this report:

- aerial photo of site with location of the bird species observed and noted on the form (this photo is not required if no species are observed);
- photo(s) of dominant habitats; and
- photo(s) of features of interest, e.g. pools/ponds, aquatic zone.

The *Breeding Wader Assessment Report* is completed by a suitably qualified person, only if the Breeding Wader Habitat Suitability Assessment Report concludes that the site of the proposed afforestation project contains suitable habitat for the species of concern. If suitable habitat is present for more than one species, each species must be addressed individually in the Assessment and Conclusions.

([1] Adapted from surveys completed in Suddaby, D., O'Brien, I., Breen, D. & Kelly, S. 2020. A survey of breeding waders on machair and other coastal grasslands in Counties Mayo and Galway. *Irish Wildlife Manuals* No. 119. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.)

4. Breeding and foraging habitat for breeding wader species of concern

4.1 Overview

In relation to each species covered by this procedure, namely Lapwing, Redshank, Snipe, Golden Plover and Dunlin, a brief overview of the breeding and foraging requirements of each of these species is outlined. Each species has different requirements in relation to its breeding habitat. In relation to foraging habitats, waders generally prefer habitats with varied sward structure, as this provides diverse invertebrate assemblages for their prey. As with most waders, chicks are precocial and feed for themselves within a short time after hatching. Food availability within habitats close to the nest is important for precocial species and their breeding success. Adults guide their young from the nest to suitable feeding areas, which can allow chicks to avoid predators, maximise food intake between patches, or to avoid disturbance from humans.

Breeding waders nest in a variety of generally wet habitats including wet grassland, cultivated land, wet upland heath, bogs, fens and clearings within reedbeds and coastal saltmarsh. They are typically dependent on sites that provide a varied sward structure and high water table. It should be noted that birds may also utilise sub-optimal habitats, particularly if there is a lack of optimum habitat present within the wider environs.

See below for information on breeding and foraging habitat requirements for the individual species.

4.2 Lapwing *Vanellus vanellus*

Lapwing breed on damp lowland grassland subject to freshwater flooding or waterlogging, such as floodplain grasslands, coastal grazing marshes and isolated pockets of poorly drained grassland. Lapwing also breed on moorland (comprising bogs, heaths, acid grasslands and swampy landscapes), and the surrounding agricultural lands. Large numbers also occur on tilled land. Lapwing prefer shorter vegetation (less than 5 cm) over most of the field, with patchy clumps of taller vegetation (10-15 cm) over 20% of the field, and no more than 10% rush cover.

Lapwing are primarily attracted by suitable ground conditions, and require ready access to moist soil carrying an appreciable biomass of surface or subsurface organisms. They prefer a mosaic of spring-sown crops, stubbles, grazed pasture and marshes. These areas provide a year-round food source of invertebrates. Parents will take their chicks across large distances to feed on wet grassland. Lapwing's diurnal diet on arable fields consists of earthworms and arthropods, including *Carabid* and *Staphylinid* beetles (adults and larvae), and millipedes. Although they only account for 13% of items, earthworms probably represent the majority in terms of consumed biomass. On average, permanent pastures support the greatest earthworm densities, with lower densities in winter cereals and the least in row crops.

4.3 Redshank *Tringa totanus*

Redshank utilise saltmarsh, coastal grazing marshes, damp lowland grassland subject to flooding or waterlogging such as floodplain grasslands, and isolated pockets of poorly drained grassland. Redshank prefer shorter vegetation (less than 5 cm) over most of the field, with patchy clumps of taller vegetation (10-15cm) over 20% of the field, and no more than 10% rush cover.

Redshank are typical waders, feeding in shallow water around lakes, marshes, ditches, mudflats and coastal wetlands. They feed singly or in small groups, and their prey mostly comprise *Hydrobia* spp., *Corophium* spp. and nereid worms, which they detect visually.

4.4 Snipe *Gallinago gallinago*

Snipe can be found on coastal grazing marshes, damp lowland grassland subject to freshwater flooding or waterlogging, such as floodplain grasslands, and isolated pockets of poorly drained grassland. Snipe also breed on moorland bogs and marshy rough pasture, and on marginal grassland.

They generally prefer fields with more tall cover than other waders. A varied sward with 30-40% shorter vegetation (10-30 cm) and 60-70% tussocks and rushes (50-80 cm) is ideal. Some dead plant litter (10-20%) and up to 20-30% soggy ground or shallow standing water are also important

Snipe feed in marshes, streams, banks, bogs and wet meadows. Studies found that within habitats, Snipe were flushed from locations that were closer to ditches or pools and characterised by wetter soil and more uneven swards than randomly selected points. Snipe diet during April–June mainly comprise earthworms and *Tipulid* larvae, which account for 61±7% and 24±6% of the dry weight of prey items ingested, respectively. A wide variety of surface-active and aquatic prey are also taken, especially in April.

4.5 Golden Plover *Pluvialis apricaria*

Golden Plover favour nesting habitat on flat or gently sloping ground with submontane (10–610 m) blanket bog, wet heath, heather moor and acidic grassland; and montane (610–1,100 m) blanket bog, dwarf shrub heath, acidic

grassland and moss/ lichen heath. They are known to favour areas of short vegetation (<10 cm) particularly dominated by heather mixed with grasses. Some nests can be found in longer vegetation (15 cm) if located on territories that have been used for a number of years by the same pair.

Golden Plover broods are able to move quite large distances, even when the chicks are small, to avoid predators or human disturbance. Brood survival has been shown to be negatively correlated with the distance between nest-sites and chick foraging areas.

Golden Plover feed largely on invertebrate, especially earthworms, insects, arachnids and molluscs, but some vegetable matter is usually taken, either deliberately or incidentally. Although the species typically breeds on barren moorland, during the incubation period, it utilises the most fertile areas within reach of the nest. The sexes share incubation and the off-duty bird flies to enclosed grassland of the upper farms or to particularly good feeding habitat on the moor. After hatching, both chicks and parents appear to depend on the nesting area for food, though they may move some distance from the nest site.

4.6 Dunlin *Calidris alpina schinzii*

During the breeding season, this species frequents moist boggy ground interspersed with surface water, such as tussock tundra and peat-hummock tundra in the arctic, as well as wet coastal grasslands, salt marshes and wet upland moorland. Its nest is a scrape or shallow depression in the ground, concealed in vegetation and sometimes in a tuft or tussock (and thus raised slightly off the ground). They are known to nest in the company of Golden Plover.

Dunlin prefer wet marshy areas with sedges and grasses interspersed with dry islands of vegetation for nesting. Nearby lakes, shallow ponds and river channels are also desirable. Habitat condition is the key factor governing the presence of Dunlin. The level of wetness, in conjunction with surface topography, is the critical factor determining suitability for breeding birds. Dunlin need areas of open water, typically in the form of small pools and water-filled channels. Vegetation at suitable breeding sites is generally short, produced by a combination of wet conditions and grazing. Deeply incised areas and tall vegetation are avoided, as are flat, featureless areas, even if very wet.

Incubating adults are known to be notoriously secretive and difficult to flush and combined with their ability to freeze on the nest and to blend totally into their surroundings, even when at the observer's feet, some nests can be overlooked.

This species is omnivorous during the breeding season, consuming mostly adult and larval insects (dipteran flies, beetles, caddisflies, wasps, sawflies and mayflies), and also spiders, mites, earthworms, snails, slugs and plant matter (usually seeds). They feed on coastal estuaries and mudflats, in addition to the wet marshes and lakeshores in the bog habitat. They sometimes also feed on agricultural areas adjacent to estuaries. The species is also omnivorous during the non-breeding season, where it mainly prefers estuarine mudflats. However, it also frequents a wide variety of freshwater and brackish wetlands, both coastal and inland, including lagoons, muddy freshwater shores, tidal rivers, flooded fields, sewage farms, salt-works, sandy coasts, lakes and dams, consuming mostly polychaete worms and small gastropods, as well as insects (dipteran flies and beetles), crustaceans, bivalves, plant matter and occasionally small fish. Dunlin sometimes feed in agricultural areas that are adjacent to estuaries.

Appendix D
Hen Harrier Article 12 Procedure for Afforestation

1. Introduction

Under the Forestry Programme 2023 – 2027, DAFM policy in relation Hen Harrier involves no planting in Special Protection Areas (SPAs) and High Likelihood of Nesting Areas (HLNAs). Applications within the Article 12 Hen Harrier Breeding Distribution layer (Map 1) require a habitat map (mandatory for all applications) and the Hen Harrier Site Inspection Form (detailed habitat description). This will assist in identifying if suitable foraging or breeding habitat is present on site so that DAFM can assess potential impacts on the species. The Article 12 Hen Harrier Breeding Distribution layer has been incorporated into iFORIS and iNET.

2. Procedure for Registered Forester

- Check if afforestation application overlaps with the Hen Harrier Breeding Distribution map on iNET.
- If the afforestation application overlaps, e-mail forest.environment@agriculture.gov.ie, insert 'Hen Harrier Art 12 Query' in the subject line, and provide the following information:
    - location map;
    - map showing the outline of the proposed afforestation application; and
    - GPS coordinates of the site's centrepoint (ITM preferably).

  DAFM will then clarify if the afforestation application is eligible (see Section 3) and if so, whether the Hen Harrier Site Inspection Form is required. Note, this response is without prejudice, as the application will be subject to further assessment.
- If the application is deemed to be eligible, complete the Hen Harrier Site Inspection Form, including photographs. The relevant template form is available at https://www.gov.ie/en/publication/regulation-forest-health-and-resources/
- Further information on suitable habitats for Hen Harrier are provided in Section 4 of this Appendix.

3. Assessment of afforestation applications

DAFM will determine if there is suitable habitat on site (based on site information) and will assess the afforestation application for potential impacts on Hen Harrier. For the purposes of assessing afforestation applications, a core foraging range of 5 km for breeding Hen Harrier and a minimum disturbance distance/buffer of 750 m are used.

Any afforestation application within 750 m of a Hen Harrier nest site outside of a SPA is not eligible for planting. Afforestation applications within 5 km of a Hen Harrier nest site or within 5 km of a Hen Harrier SPA will completion of the Hen Harrier Site Inspection Form. Where applications within the Hen Harrier breeding distribution layer are subject to assessment, the assessment takes into account the percentage forest cover, the percentage suitable open habitat, the habitats present on site and in the surrounding landscape.

4. Characteristics and ecological requirements of Hen Harrier

The hen harrier breeding season is defined as 1st March to 15th August (inclusive). The Hen Harrier non-breeding season is broadly defined as mid-July to mid-March. During this period, Hen Harrier can remain on breeding grounds, or disperse widely, establishing a winter range.

4.1 Breeding habitat (nest sites)

Suitable Hen Harrier breeding sites include the following:

- heather moorland (HH/PB) which contains stands of tall (usually >0.4 m), well-drained heather with >50% cover and with good all-round visibility (such as slopes and river valleys); and
- tall heather areas within forest clearings, forest rides and along the edges of forest plantations.

Forest habitats used by breeding Hen Harriers includes pre-thicket forest stands (including WS2 and WS5), i.e. forests that have not developed a closed canopy, generally <5 m in height and up to 12 years old. Nests within forest stands can be difficult to locate, as the birds often fly along rides below tree height to reach them. Nests have also been recorded in rushes (rushy fields/wet grassland (GS4)); bracken (HD1); willow scrub (WS1); purple moor grass (PB/HH/GS); mature bog myrtle with regenerating willow and birch (PB/PF/WS); forest brash with rosebay willowherb; and in rank vegetation in forest rides and clearings within open and closed canopy forest stands.

For the purposes of forestry applications, **suitable** Hen Harrier breeding habitats are defined as:

- heather dominated and/or grass moorland;
- other open habitats with extensive scrub or bramble cover; and
- developing pre-thicket forest (1st and 2nd / subsequent rotation crops).

For the purposes of forestry applications, **unsuitable** breeding habitats are defined as:

- areas of ground above 600 m OD;
- built-up/urban areas;
- within 100 m of occupied farms and dwellings;
- improved pasture and arable farmland;
- the interior of unbroken, closed-canopy forest stands;
- sheep-walks;
- extensive areas of bracken;
- degraded or overgrazed upland areas without any heather cover;
- areas within close proximity to sea-cliffs; and
- inland crags, rocky outcrops, boulder fields and scree slopes.

4.2 Foraging habitat

The main non-forested habitats used by foraging harriers are heathland, bogland, and less-intensively farmed grassland with well-established hedgerows and areas of scrub that support preferred prey species, including meadow pipit (*Anthus pratensis*) and skylark (*Alauda arvensis*).

Grasslands are often associated with other heather/peatland, scrub, marsh, riparian and woodland habitats, creating important habitat mosaics that support prey species, and communities important for Hen Harrier. The types of semi-natural grasslands that support Hen Harrier are often referred to as 'rough grassland', which has been described as *''usually wet grassland with variable species composition, though they may also include more typical improved grassland, but with relatively high cover of rushes''*. See Table 1 of this Appendix.

Conifer forests offer favourable conditions for foraging Hen Harriers during the early growth / pre-thicket stage forest stands (i.e. forests that have not developed a closed canopy, generally <5m in height and up to 12 years old, and pre-thicket forest stands). When the forests close canopy, i.e. moving from pre-thicket to thicket, the forests become and remain unsuitable for Hen Harrier for the remainder of the forest cycle.

4.3 Roost sites

The most frequently-used broad habitat category for winter roosting Hen Harrier is heath (HH) / bog (PB), followed by reedbed (FS). The other broad habitat categories in which Hen Harriers were found to roost in Ireland include fen (PF), scrub (WS1), saltmarsh (CM), grasslands (GS), pre-thicket / failed forests (WD/WN); and tillage (BC). Hen Harriers will also roost individually on old nests in breeding areas in the autumn (August to October) or in the late winter / early spring (February to April).

Map 1 Hen Harrier Breeding Distribution map. Hen Harrier Article 12 Breeding Distribution Range (10 km squares).

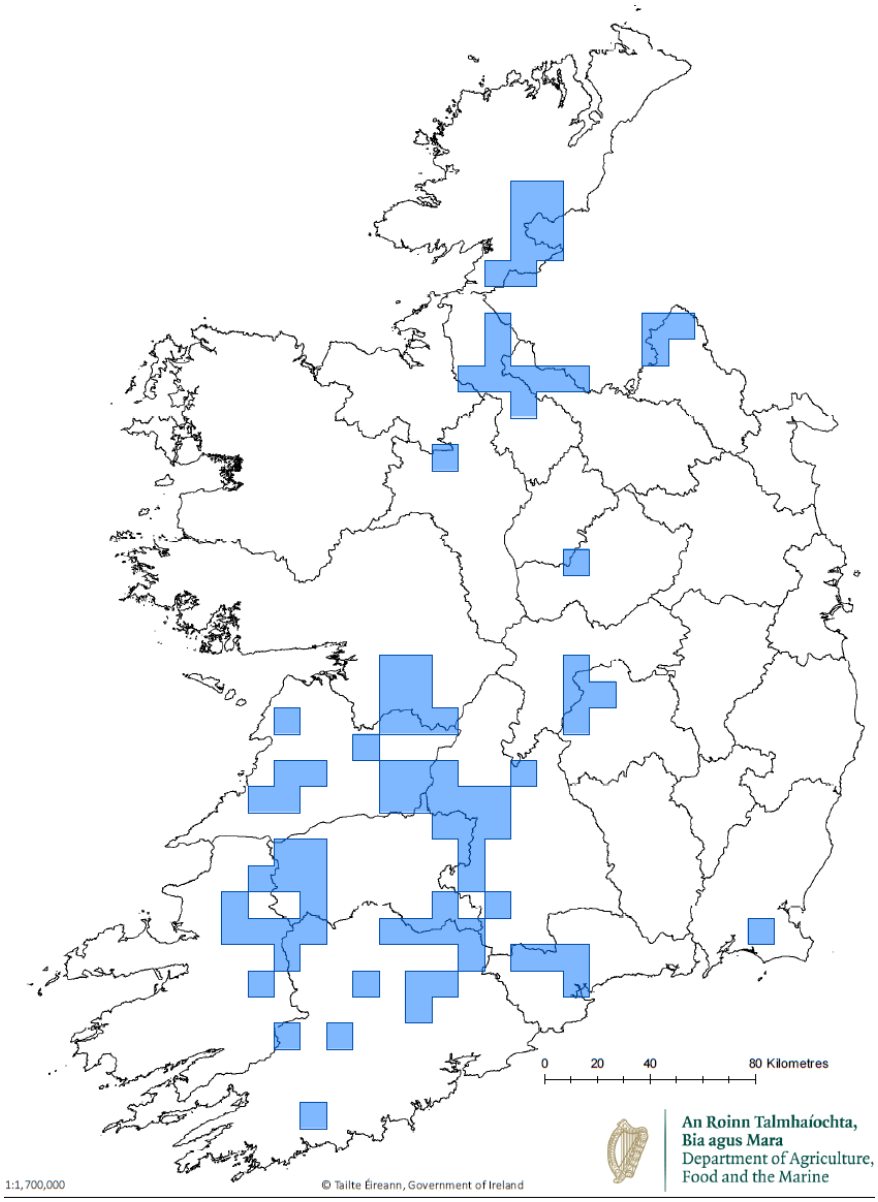


Table 1 Habitat descriptions as per Ruddock *et al.* (2016).

Habitat (Code)	Description of habitat
First rotation (or new) forest (1F)	First-rotation forest plantations before canopy closure. Characterised by prolific herb layer with varying shrub layer development. Trees generally >1m tall with large open spaces between lines of planting.
Second rotation forest (2F)	Second-rotation forest plantations before canopy closure. Characterised by varying shrub layer development and brash and tree root-plates from the previous crop and large open spaces between lines of planting. Newly established second-rotation trees are not always obvious. Third rotation crops are likely in future years but none were recorded in this survey.
Thicket (pole) or mature stage forest (T)	Closed-canopy forest plantations including both 1F & 2F crops. Usually >10 years old. Characterised by absence of shrub layer, except in rides between stands of trees and in small patches of unplanted ground or failed crop.
Clearfell (CF)	Harvested plantation not yet restocked with trees. Characterised by limited development of herb and shrub layer, and brash and tree root-plates evident from the previous crop.
Heather moorland/bog (H)	Unenclosed heather-dominated moorland characterised by species such as heather, bilberry and purple-moor grass plus blanket bog characterised by ling and bell heather, bog cotton, deer grass and moss. Typically grazed by red deer and low densities of sheep.
Grass moorland (G)	Unenclosed grass-dominated moorland usually grazed by sheep. Characterised by species such as wavy hair grass, mat grass and heath rush. Stands of rush (*Juncus* spp.) and bracken (*Pteridium* spp) occasionally occur.
Rough grassland (RG)	Unenclosed or enclosed, neglected pastures occasionally stocked with sheep or cattle that have not recently been improved, re-seeded or fertilised. Usually contains long grass, waterlogged areas and stands of rushes (*Juncus* spp).
Improved grassland (IG)	Enclosed pastures that have been drained, fertilised or re-seeded characterised by lush green grass vegetation and containing higher densities of sheep or cattle. Also includes hay meadows.
Scrub (S)	Areas outside or away from plantation forests consisting of willow, bramble, furze etc which have not been tended by humans. Includes bushy vegetation such as willow (*Salix* spp), gorse (*Ulex* spp), bramble (*Rubus* spp), alder (*Alnus* spp), birch (*Betula* spp) and bracken (*Pteridium* spp).
Linear feature associated with rough grassland (LR)	Linear feature (e.g. hedgerows, ditches and drainage channels) that are contained, or in close proximity to, rough grassland
Linear feature associated with improved grassland (LI)	Linear feature (e.g. hedgerows, ditches and drainage channels) that are contained, or in close proximity to, improved grassland
Other (O)	Description of habitat where it does not fall into one of the categories outlined above.

Appendix E
References for Criteria for Identifying Annex I Habitats

The following references must be used for the identification of Annex I habitats as listed in the EU Habitats Directive 92/43/EEC. Note that habitats with a peat and/or Wetland quality (e.g. bogs, fen/flush, heaths, swamps, springs, marshes) may be ineligible under other considerations such as Wetland Type, peat depth and R+N score[1]). A list of habitats as classified under Fossitt (2000)[2] and their potential relationship with EU Annex I habitats is given in Appendix 1 of *A Guide to Habitats in Ireland*.

Annex I Habitat	**Reference for Criteria Identifying the Annex I Habitat**
Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (6210) important orchid sites (*6210),	Martin, J.R., O'Neill, F.H. & Daly, O.H. 2018. The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats. *Irish Wildlife Manuals* No. 102[3]. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) (6410)	Martin, J.R., O'Neill, F.H. & Daly, O.H. 2018. The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats. *Irish Wildlife Manuals* No. 102. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) (6510).	Martin, J.R., O'Neill, F.H. & Daly, O.H. 2018 The monitoring and assessment of three EU Habitats Directive Annex I grassland habitats. *Irish Wildlife Manuals* No. 102. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
Species-rich *Nardus* grasslands of upland areas (6230)*	O'Neill, F.H., Martin, J.R., Devaney, F.M. & Perrin, P.M. 2013. The Irish semi-natural grasslands survey 2007-2012. *Irish Wildlife Manuals* No. 78. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.
Hydrophilous tall herb swamp communities (6430)	O'Neill, F.H., Martin, J.R., Devaney, F.M. & Perrin, P.M. 2013. The Irish semi-natural grasslands survey 2007-2012. *Irish Wildlife Manuals* No. 78. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Ireland.

[1] As outlined in the DAFM Land Types for Afforestation (2023).

[2] Fossitt, J.A. 2000. *A Guide to Habitats in Ireland*. Heritage Council, Kilkenny.

[3] The forb:graminoid ratio* criteria as presented in the IWM 102 Appendix 1 summary criteria is misleading. It is understood that this will be revised in the new IWM for the recently completed NPWS grassland monitoring project. The new ratio figure which constitutes a pass can be between 30 and 90% (rather than the 40% used previously). This new ratio figure should be used in undertaking [6410] assessments. (*Ratio of % forb cover to % graminoid (grass / sedge / rush) cover, expressed as (%forb/(%forb+%graminoid)) x 100, does not specifically

state the grass : forb ratio but it must be considered and in line with forthcoming NPWS guidance it should be between 30 and 90% (rather than the 40% used previously).)	
North Atlantic Wet Heaths with *Erica tetralix* (4010)	Perrin, P.M., Barron, S.J., Roche, J.R. & O'Hanrahan, B. 2014. Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. *Irish Wildlife Manuals* No. 79. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
European Dry Heath (4030)	Perrin, P.M., Barron, S.J., Roche, J.R. & O'Hanrahan, B. 2014. Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. *Irish Wildlife Manuals* No. 79. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.
Alkaline fens (7230)	Perrin, P.M., Barron, S.J., Roche, J.R. & O'Hanrahan, B. 2014. Guidelines for a national survey and conservation assessment of upland vegetation and habitats in Ireland. Version 2.0. *Irish Wildlife Manuals* No. 79. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland.

Appendix F
NATURA Impact Statements for Forestry Projects: Guidance and Template

1. Overview

This document, originally released in August 2020 with Circular 14/2020, sets out guidance and a template for the preparation of Natura Impact Statements for forestry applications, submitted to inform the appropriate assessment process undertaken by the Minister for Agriculture, Food & Marine under Regulation 19 of the Forestry Regulations 2017, as amended, and Regulation 42 of the European Communities (Birds & Natural Habitats) Regulations 2011, as amended.

The following guidance and template replace those set out in Circular 04 of 2020. Further amendments may be made, to take account of future developments such as evolving case law in the area.

2. Legislative background

The overall aim of the Habitats Directive (92/43/EEC) is to maintain or restore the favorable conservation status of habitats and species of Community interest. These habitats and species are listed in the Habitats Directive and the Birds Directive (2009/147/EC), and Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are designated to afford protection to the most vulnerable of these. Both designations are defined as 'European Sites' in the Irish transposing regulations, and are also collectively referred to as the 'Natura 2000 network'. The Habitats and Bird Directives are transposed into Irish law by (inter alia) the European Communities (Birds & Natural Habitats) Regulations 2011 (S.I.477 of 2011), as amended, and the Forestry Regulations 2017 (S.I.191 of 2017), as amended (see the Irish Statute Book www.irishstatutebook.ie).

As required under the Habitats Regulations 2011 and the Forestry Regulations 2017, on receipt of any application for licensing and / or grant approval, the Minister for Agriculture, Food & the Marine (the "Minister") (as a 'public authority') must undertake an appropriate assessment 'screening' to assess if the project is likely to have a significant effect, either individually or in combination with other plans or projects, on a European Site, in view of that European Site's conservation objectives and in view of best scientific knowledge. If the Minister forms the opinion that the project is likely to have a significant effect on a European Site, or is unable to determine the likely effects of the project on a European Site, the project is 'screened in' and the Minister must carry out an appropriate assessment. The Minister then undertakes the 'appropriate assessment' to determine in view of best scientific knowledge whether there will be an adverse effect on the integrity of these European Site(s), based on (inter alia) the nature of the impact and the effectiveness of any mitigation measures proposed. The appropriate assessment must: (a) identify, in light of the best scientific knowledge, all aspects of the development that would affect European Sites; and (b) contain complete and definitive findings capable of removing all reasonable scientific doubt that the development would adversely affect the integrity of those sites.

(Note, screening is often referred to as 'Stage 1', and appropriate assessment as 'Stage 2'.)

The above process cannot have any deficiencies or data / information gaps (or 'lacunae') and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of a project on the European Site(s) concerned. The Minister can only approve an application where s/he deems (at screening stage) that the project is not likely to have a significant effect on a European Site or, after having ascertained (at appropriate assessment stage, if required) that there will be no adverse effect on the integrity of any European Site.

The above process is set out in Regulation 42 of SI 477 of 2011 and Regulation 19 of SI 191 of 2017. Recent rulings from the European Court of Justice and Irish case law provide further legal clarification (see Section 11).

Furthermore, detailed guidance is set out in the European Commission (2018) Notice *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC* (see Section 12).

As set out under S.I.477 of 2011, as amended, and S.I.191 of 2017, as amended, where a site has been 'screened in' for appropriate assessment, the Minister can seek the submission of a Natura Impact Statement (NIS) to inform that process. Applicants can also opt to submit a NIS with their application at the very outset, in the assumption that the project will be screened in. This note sets out guidance for Applicants and his / her Registered Forester and other agents, on the preparation of a NIS, and sets out a template to be adhered to. This template is not intended to be exhaustive in nature, and situations may arise whereby the NIS may need to address other aspects not included below.

Sources for further guidance are listed in Section 12, and a glossary of terms is included in Section 13.

3. What is a NATURA Impact Statement?

The Forestry Regulations 2017 (S.I. 191 of 2017), as amended, provide that a 'Natura Impact Statement' has the same meaning as in the Habitats Regulations (S.I.477 of 2011). S.I.477 of 2011 defines a Natura Impact Statement as *"a report comprising the scientific examination of a plan or project and the relevant European Site or European Sites, to identify and characterise any possible implications of the plan or project individually or in combination with other plans or projects in view of the conservation objectives of the site or sites, and any further information including, but not limited to, any plans, maps or drawings, scientific information or data required to enable the carrying out of an Appropriate Assessment."*

The NIS is a scientific examination that identifies and characterises any possible implications the project may have (either individually or in combination with other plans and projects) on the conservation objectives of any 'screened-in' European Site(s), taking into account the full scope of these objectives, whether generic or site specific. It must also identify and detail any proposed mitigation measures needed to avoid, reduce or eliminate likely significant effects on a European Site or adverse effects on the integrity of a European Site. The NIS must also present the necessary analysis to demonstrate how any proposed mitigation measures will avoid or remove the risks of those adverse effects identified, so that the final analysis and in-combination assessment with other plans and projects is undertaken in the context of the predicted residual effects.

The precautionary principle should be applied throughout the preparation of the NIS. For example, if it cannot be demonstrated that no adverse effect will arise, such an effect must be assumed. As a scientific examination, all findings arrived at must be clear and precise, and must be supported by data, evidence and analysis and by best scientific knowledge and objective information, including baselines and trends. All sources of information must also be cited.

The purpose of the NIS is to provide adequate information to enable the Minister to undertake and complete his or her Appropriate Assessment of the project.

4. How will I know a NIS is required?

The Minister must undertake appropriate assessment where the initial screening stage concluded that the project is likely to have a significant effect on the European Site(s) (or where uncertainty exists), either individually or in combination with other plans and projects, in view of the conservation objectives of that European Site(s) and in view of best scientific knowledge. To inform the appropriate assessment, the Minister may seek the submission of a NIS by the Applicant.

Where the Minister requires a NIS in relation to one or more European Sites, it will notify the Applicant in writing. This NIS Request Letter will also set a deadline for the submission of the NIS. Unless otherwise agreed, if the Applicant does not provide the NIS within the specified period, the application will be considered withdrawn. The letter may also provide further information regarding the required focus of the NIS – see below.

Applicants may also opt to submit a NIS with their initial application, in the assumption that a NIS will be stipulated by the Minister later, after screening.

In both cases outlined above, the NIS must adhere to the template set out in this note.

5. What is the likely content of a NIS, who submits it, and who pays?

Each NIS will vary in content, given the permutations that arise from the range of forest activities involved (afforestation, forest roading, felling, etc.), the specifics of the project itself, and the details of any European Site(s) involved.

This note includes a template to be adhered to in situations where a NIS is being prepared for a proposed forestry project. This is to ensure that key issues are addressed and to standardise the structure of NISs submitted, to facilitate review by the Minister. Note, the template is not intended to be exhaustive, and it is the responsibility of the Applicant to ensure that all relevant issues are addressed.

In his or her NIS request letter, the Minister may stipulate that the NIS focuses on an aspect of the project that gives rise to concern in relation to a particular qualifying interest or conservation objective of an identified European Site. Similarly, it might specify the provision of particular information or data it considers necessary to enable it to carry out the Appropriate Assessment. In such cases, the template must still be adhered to, and sections that are clearly not applicable can be marked 'N/A'.

Regardless of any direction that may be given, either in this note or within the FIR letter, it is the Applicant's responsibility to ensure that the NIS adequately addresses the issues necessary to enable the Minister to complete his / her Appropriate Assessment. If the information provided is insufficient, or if information is absent, further information may be sought. Also note that it is an offence under S.I.477 of 2011 and the Forestry Act 2014 to supply false or misleading information or to withhold or fail to divulge information or data likely to be relevant to the Appropriate Assessment.

It is the responsibility of the proponent of the project (i.e. the Applicant) to engage relevant experts and to bear the cost of preparing the NIS.

6. Who prepares the NIS?

As a scientific examination, the NIS must be produced in a scientifically competent, professional and objective manner. In most cases, as habitat and species evaluation are central to the process, a person with appropriate ecological qualifications and experience will be required to undertake any necessary ecological surveys, research and analysis. Other relevant experts may be required if non-ecological input is needed, e.g. in the area of hydrology or engineering.

Generally, the Registered Forester associated with the project will coordinate the compilation of the NIS. *It is very important that the forester overseeing the work also inputs directly into the NIS itself,* regarding the identification and detailing of proposed mitigation measures. Joint ownership of such measures is essential, to ensure they are effective as mitigation, realistic and practical to implement, and acceptable to the Minister (e.g. under scheme rules). Through his / her own expertise and knowledge, the forester may also draw attention to measures and approaches not immediately obvious to the ecologist.

To assist applicants and Registered Foresters in contacting ecologists, the DAFM has compiled a Directory of Professional Ecologists for Forestry Projects, available at www.agriculture.gov.ie/forestservice/grantsandpremiumschemes2014-2020 (also see Circular 07/2019). Note, this directory is not exclusive, and the Minister will accept NISs from individuals regardless of whether or not they are listed.

7. What level of ecological input is needed?

In addition to baseline information and survey results available online and elsewhere (see below), an ecological survey may be needed to assess if an Annex I habitat or Annex II species, or a supporting habitat or species(*), is present. The type of survey needed will vary greatly, from a general habitat walkover survey to a more detailed survey involving repeated visits.

(* As per ECJ Case C-461/17 Brian Holohan and Others v An Bord Pleanála – see Section 11.)

The following are examples of the types of surveys and field assessments that may be required. (Note, these examples are included for illustrative purposes only. The ecologist will identify the type of survey required in relation to any particular project.)

- ***Ex situ,*** where the project is located outside the European Site:
    - A habitat walkover survey to assess if the project area contains a habitat used by a species listed as a qualifying interest of the European Site, or a habitat supporting a species upon which the qualifying interest depends. For example, the project area may contain a habitat used for foraging by a specific bird species listed as a Special Conservation Interest (SCI) of a nearby SPA.
    - A hydrological assessment to ascertain if proposed drainage associated with an afforestation project will disrupt the hydrological conditions underpinning a nearby SAC bogland habitat.
- ***In situ,*** where the project is located within a European Site:
    - An ecological survey to determine if a habitat listed as a qualifying interest of the European Site (i.e. an Annex I habitat, such as wet heath) is present or absent within the project area.
    - Similarly, in the case of a particular species listed as a qualifying interest of the European Site (i.e. an Annex II such as Desmoulin's whorl snail (*Vertigo moulinsiana*)), a species survey or a species habitat survey to determine if that species occurs or has the potential to occur within the project area.

The following indicate some of the general issues that can arise:

- Where there is a hydrological connection to a European Site, the NIS must address potential impacts on water quality and aquatic species and habitats. This will include an assessment of likely sources and pathways (such as relevant watercourses or 'hotspot' areas) for runoff from the site, in relation to both sediment and nutrients. Other issues such as altered hydrology and nutrient enrichment may also be relevant.
- In relation to SPAs, the NIS should consider (as relevant) the known location of breeding sites within the SPA, whether the project area contains suitable breeding, foraging or roosting habitats, and whether disturbance impacts arise.
- For felling licence applications, the NIS must include a Harvest Plan and Map (see DAFM-Forestry Circular 11 / 2019), with all proposed mitigation measures clearly detailed and mapped. Where clearfelling is involved, the reforestation must be considered, including options such as the 'CCF' and 'BIO' Reforestation Objectives (see DAFM's Felling & Reforestation Policy (2017)), increased water setbacks, retrofitting buffers, alternative species, the use of broadleaf species along watercourses, and alternative management options such as continuous cover forestry.

Typically, a detailed field survey is required if the project is located within a Natura Site and where the qualifying interests include terrestrial habitats and species. In situations where all the qualifying interests are aquatic in nature, the focus of the scientific examination should be on avoiding or eliminating the risk of any potential impacts (e.g. sediment and nutrient runoff, altered hydrology, nutrient enrichment) on the aquatic habitat or species.

Regarding terrestrial-based qualifying interests, the nature of these will determine the type of survey(s) required. Given the range of Annex habitats and species, it is not possible to outline the appropriate survey method(s) for each. Some Annex II terrestrial species require specialist expertise as they may not be easily observed.

When surveying the site, it is important that the following are noted:

- Invasive species: If these species have the potential to have an impact on European sites, they must be addressed in the NIS. If not, the presence of invasive species should be noted in the habitat walkover survey and if appropriate, addressed outside the NIS. Under Regulation 49 of the European Communities (Birds and Natural Habitats) Regulations, 2011 (S.I. No. 477 of 2011), save in accordance with a licence granted under paragraph (7), any person who plants, disperses, allows or causes to disperse, spreads or otherwise causes to grow any invasive plants listed in the third column of Part 1 of the Third Schedule shall be guilty of an offence. Further information in relation to invasive species and the development of invasive species management plans is available at https://invasivespeciesireland.com/invasive-plant-management/
- Nationally protected habitats /species, either under the Wildlife Act or the Flora Protection Order (e.g. small

white orchid, badger sett): These must be recorded in the walkover survey and if appropriate addressed outside the NIS. (They may need to be addressed in the NIS if their presence influences operations, e.g. timing.)

8. Relevant sources of information

Relevant sources of information are listed below. Relevant data from recent or ongoing surveys undertaken by various bodies may be available, thereby possibly reducing the need for direct survey work during the preparation of the NIS.

Environmental Protection Agency Appropriate Assessment tool https://gis.epa.ie/EPAMaps/AAGeoTool	The EPA's online Appropriate Assessment tool is a valuable resource that allows the user to quickly identify SACs and SPAs found within a certain radius of the project area, or downstream along a river. See Appendix 4 for guidance.
National Parks & Wildlife Service (Department of Culture, Heritage & the Gaeltacht) www.npws.ie/protectedsites	This website contains information on individual SACs and SPAs, including each site's conservation objectives, site synopsis, Statutory Instrument (with site map) and related publications. www.npws.ie/maps-and-data provides further maps and data and also instructions on how to request sensitive or unpublished data that may be relevant in relation to a particular project area and associated NIS. Local records may be available through the local NPWS Office. NPWS Article 17 report for 2019 contains general information on Annex I habitats and Annex II species, ecology, distribution, pressures, status, etc. See www.npws.ie/publications/article-17-reports/article-17-reports-2019
National Biodiversity Data Centre www.biodiversityireland.ie	NBDC is a national centre for the collection, collation, management, analysis and dissemination of data on Ireland's biological diversity. It contains numerous maps and data on a wide range of habitats and species, that may be relevant in relation to a particular project area and associated NIS.
Birdwatch Ireland www.birdwatchireland.ie	This website provides a wealth of information on Irish bird species, and the results of various bird studies / surveys.
Bat Conservation Ireland www.batconservationireland.org	This website is an online records database (with maps) for bat species, including the Lesser Horseshoe Bat, an Annex II species under the Habitats Directive.

9. In-combination effects

In-combination effects can be defined as impacts on a European Site that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project being assessed.

Appropriate assessment requires an assessment of possible in-combination effects under the European Communities (Birds & Natural Habitats) Regulations 2011, as amended, and the Forestry Regulations 2017, as amended. Section 3.5.3 of the EC Commission Notice *Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC (2018)* details the process: *"When determining likely significant effects, the combination with other plans and/or projects should also be considered to take account of cumulative impacts during the assessment of the plan or project in question. The in-combination provision concerns other plans or projects which have been already completed, approved but uncompleted or actually proposed."*

The following box outlines the process further, setting out the steps involved to ensure that all impacts upon the European Site are identified, including those direct and indirect impacts that are a result of cumulative impacts.

Steps in the [cumulative] assessment	Activity to be completed
Identify all projects/plans which might act in combination	Identify all possible sources of effects from the project or plan under consideration, together with all other sources in the existing environment and any other effects likely to arise from other proposed projects or plans.
Impact identification	Identify the types of impacts (e.g. noise, water resource reduction, chemical emissions, etc.) that are likely to affect aspects of the structure and functions of the site vulnerable to change.
Define boundaries for assessment	Define boundaries for examination of cumulative effects; note these will be different for different types of impact (e.g. effects upon water resources, noise) and may include remote (off-site) locations.
Pathway identification	Identify potential cumulative pathways (e.g. *via* water, air, etc.; accumulation of effects in time or space). Examine site conditions to identify where vulnerable aspects of the structure and function of the site are at risk.
Prediction	Prediction of magnitude/extent of identified likely cumulative effects.
Assessment	Comment on whether or not the potential cumulative impacts are likely to be significant.
From European Commission's *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC* (2001).	

10. Additional notes on completing the NIS

- Section 14 of this note contains a template for a Natura Impact Statement (NIS) that must be adhered to for all NISs submitted to the Minister in relation to a forestry application.
- The ***green italic text*** throughout the NIS template sets out instructions for completing the various sections of the document. The yellow highlighted text indicates where specific insertions are required.
- All sections must to be completed, unless the Minister's letter seeking the NIS narrows the focus (in which case, sections not relevant can be marked 'N/A'). Issues not covered by the template can be addressed by adding new sections.
- Regarding the preparation of the NIS, in most cases, a person with appropriate ecological qualifications and experience will be required to undertake the necessary ecological surveys, research and analysis. However, i*t is very important that the forester overseeing the work also inputs directly into the NIS*, regarding the identification and detailing of proposed mitigation measures. Joint ownership of such measures is essential, to ensure they are effective as mitigation, and realistic and practical to implement. Through his / her own expertise and knowledge, the forester may also draw attention to measures and approaches not immediately obvious to the ecologist.
- At specific points in the NIS template, maps are required to illustrate various information, including a Current Environment & Habitat Map and an Operations & Mitigation Map. Such maps are intrinsic to the NIS, and must adhere to the following conventions:
    - Maps must be based on OS raster map(s) or orthophoto(s), with the site perimeter outlined in red. The scale 1:5,000 is typical, but use a larger scale if necessary for clarity.
    - Maps must be appropriately titled (e.g. 'Current Environment & Habitat Map'), to reflect the

information being illustrated. All relevant features, measures and operations are to be clearly mapped and indicated using symbols, colours, letters, text-and-arrows and a concise legend. Linear features (e.g. waterways, hedgerows) should be indicated using colour-coding, and individual features (e.g. badger setts) by letters or symbols. For an example of a Current Environment & Habitat Map, see Circular 13 of 2020 (https://www.agriculture.gov.ie/forestservice/grantsandpremiumschemes2014-2020/schemecirculars/2020circulars/).

- It is strongly recommended that such details are added using the Adobe Reader graphics tool, especially where orthophotos are being used.
- Maps are included in the appendices but must be clearly cross-referenced with the relevant section(s) in the main body of the NIS.
- Each map must accurately represent the information being illustrated. They must also be legible. If an individual map becomes too cluttered, use a second map and indicate accordingly (e.g. Operations & Mitigation Map no. 1, Operations & Mitigation Map no. 2).

- If photographs are included in the NIS, include a 'Photo Map' illustrating the location and orientation of each photograph, and cross-reference with the relevant section(s) in the main body of the NIS.
- Submit the NIS in a photocopy friendly A4 format, without permanent binding. It is also acceptable in digital format, with an electronic signature (e.g. a cover e-mail from the Applicant, with the NIS included as an attachment).
- The submission of incomplete, inaccurate or incoherent NISs will result in delays, requests for further information, and / or refusal.

11. Summary of selected rulings (from the European Court of Justice (ECJ) and the Irish Courts) relating to Article 6(3) of the Habitats Directive

ECJ Case C-258/11, Peter Sweetman and Others v An Bord Pleanála

http://curia.europa.eu/juris/document/document.jsf?text=&docid=136145&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=10649

Text from ruling

> *Article 6(3) of* [the Habitats Directive] *must be interpreted as meaning that a plan or project not directly connected with or necessary to the management of a site will adversely affect the integrity of that site if it is liable to prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site in the list of sites of Community importance, in accordance with the directive. The precautionary principle should be applied for the purposes of that appraisal.*

ECJ Case C-164/17, Edel Grace and Peter Sweetman v An Bord Pleanála

http://curia.europa.eu/juris/document/document.jsf?text=&docid=204392&pageIndex=0&doclang=en&mode=lst&dir=&occ=first&part=1&cid=10649

Text from ruling

> *Article 6 of* [the Habitats Directive] *must be interpreted as meaning that, where it is intended to carry out a project on a site designated for the protection and conservation of certain species, of which the area suitable for providing for the needs of a protected species fluctuates over time, and the temporary or permanent effect of that project will be that some parts of the site will no longer be able to provide a suitable habitat for the species in question, the fact that the project includes measures to ensure that, after an appropriate assessment of the implications of the project has been carried out and throughout the lifetime of the project,*

the part of the site that is in fact likely to provide a suitable habitat will not be reduced and indeed may be enhanced may not be taken into account for the purpose of the assessment that must be carried out in accordance with Article 6(3) of the directive to ensure that the project in question will not adversely affect the integrity of the site concerned; that fact falls to be considered, if need be, under Article 6(4) of the directive.

ECJ Case C-323/17 People Over Wind and Peter Sweetman v Coillte Teoranta

http://curia.europa.eu/juris/document/document.jsf?text=&docid=200970&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=10649

Also attached *Inside Ecology* article 01May18 for an unofficial but informed digest of the judgement, https://insideecology.com/2018/05/01/habitat-regulations-assessments-no-more-screening-out-with-mitigation-measures/

Text from ruling

Article 6(3) of [the Habitats Directive] *must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.*

ECJ Case C-461/17 Brian Holohan and Others v An Bord Pleanála

http://curia.europa.eu/juris/document/document.jsf?text=&docid=207428&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=10649

Text from ruling

1. Article 6(3) of [the Habitats Directive] *must be interpreted as meaning that an 'appropriate assessment' must, on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.*

2. Article 6(3) of Directive 92/43 must be interpreted as meaning that the competent authority is permitted to grant to a plan or project consent which leaves the developer free to determine subsequently certain parameters relating to the construction phase, such as the location of the construction compound and haul routes, only if that authority is certain that the development consent granted establishes conditions that are strict enough to guarantee that those parameters will not adversely affect the integrity of the site.

3. Article 6(3) of Directive 92/43 must be interpreted as meaning that, where the competent authority rejects the findings in a scientific expert opinion recommending that additional information be obtained, the 'appropriate assessment' must include an explicit and detailed statement of reasons capable of dispelling all reasonable scientific doubt concerning the effects of the work envisaged on the site concerned.

4. Article 5(1) and (3) of, and Annex IV to, Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment, must be interpreted as meaning that the developer is obliged to supply information that expressly addresses the significant effects of its project on all species identified in the statement that is supplied pursuant to those provisions.

5. Article 5(3)(d) of Directive 2011/92 must be interpreted as meaning that the developer must supply information in relation to the environmental impact of both the chosen option and of all the main alternatives studied by the developer, together with the reasons for his choice, taking into account at least the environmental effects, even if such an alternative was rejected at an early stage.

Kelly -v- An Bord Pleanála [2014] IEHC 400

http://www.courts.ie/Judgments.nsf/0/7A4764A297EF3FC080257D35004D2540

Non-legal summary

The Irish High Court quashed a decision to grant planning permission for a wind farm for failing to comply with the European Habitats Directive on the grounds, *inter alia*, that An Bord Pleanála failed to carry out an assessment which: (a) identified, in light of the best scientific knowledge, all aspects of the development which would affect various local protected habitats; and (b) contained complete and definitive findings capable of removing all reasonable scientific doubt that the development would adversely affect the integrity of the habitats.

Kelly -v- An Bord Pleanála & anor [2019] IEHC 84

http://www.courts.ie/Judgments.nsf/0/7599087E33F1C206802583A50058F9D4

Non-legal summary

The Irish High Court did not find that Sustainable Urban Drainage Systems (SUDS) and other standards mandatory and best practice environmental measures can be considered in every screening for Appropriate Assessment. It is always necessary to analyse whether the measure, however described and whether or not it has another purpose, is proposed with the intention of avoiding or reducing a harmful effect on a European Site. If there is a source-pathway-receptor connection between the proposed development and the qualifying interest of a European Site and potential harmful effects have been identified, measures to avoid or reduce those effects must be excluded from the screening analysis.

Heather Hill Management Company clg & anor -v- An Bord Pleanála & anor [2019] IEHC 450

http://www.courts.ie/Judgments.nsf/0/9BBAA0F37143FFC280258423003FED1D

Non-legal summary

The Irish High Court held that the Board had relied on a commitment to comply with 'best practice measures' during construction in order to minimise any emissions into the Trusky Stream, which was identified as being a potential pathway to the Special Protection Area (SPA) and Special Area of Conservation (SAC) in Galway Bay. The Court held that this commitment to comply with ‘best practice measures’ represented an avoidance or reduction measure that must be excluded for the purpose of reaching a screening determination.

12. Further guidance on compiling Natura Impact Statements

The following is a list of references that provide further guidance on compiling NISs.

European Commission. 2018. Commission notice: Managing Natura 2000 sites: The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Available at: www.ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

European Commission. 2000. Managing Natura 2000 Sites: The provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC. European Communities. Available at: www.ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf

NPWS. 2017. The Status of EU Protected Habitats and Species in Ireland. Overview Volume 1. National Parks & Wildlife Service, Department of Arts, Heritage & the Gaeltacht, Dublin. Available at: www.npws.ie/publications/article-17-reports/article-17-reports-2019

European Communities (Birds & Natural Habitats) Regulations 2011 (S.I.477 of 2011). See the Irish Statute Book www.irishstatutebook.ie

Forestry Regulations 2017 (S.I.191 of 2017). See the Irish Statute Book www.irishstatutebook.ie

DEHLG. 2010. Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of Environment, Heritage & Local Government. Available at: www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

European Commission. 2001. Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. European Commission Environment DG. Office for Official Publications of the European Communities, Luxembourg. Available at: http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf

13. Glossary of terms

The following is a glossary of terms relevant to the area of Appropriate Assessment.

Birds Directive Directive 2009/147/EC of the European Parliament & of the Council of 30 November 2009 on the conservation of wild birds.

CJEU Judgement C-323/17 Under this Court of Justice of the European Union (CJEU) Judgement C-323/17 People Over Wind and Sweetman, specific measures intended to avoid or reduce the harmful effects of a proposed forestry project on a SAC or SPA may no longer be taken into account by the Forestry Inspector at the AA screening stage, when deciding on whether or not that proposed project is likely to have a significant effect on the conservation objectives of a European Site. (See CJEU Judgment at curia.europa.eu/juris/liste.jsf?language=en&num=C-323/0 and also attached Inside Ecology article 01May18, for an unofficial but informed digest of the judgement.)

Conservation Objective The specification of the overall target for the species & / or habitat types for which a European Site is designated, in order for it to contribute to maintaining or reaching favourable conservation status of the species & habitat concerned, at the national, the biogeographical or the European level.

Conservation Status (Habitat) An assessment of the health of a natural habitat, based on the sum of the influences acting on that habitat & its typical species that may affect its long-term natural distribution, structure & functions as well as the long term survival of its typical species. Methods for assessing conservation status were drawn up by the European Topic Centre for Nature Conservation in conjunction with the Scientific Group of the Habitats Directive. It involves the application of a 'favourable', 'inadequate', 'bad' or 'unknown' assessment to four separate parameters (i.e. range, area, structures & functions, & future prospects) & an assessment of overall status (NPWS, 2013).

European Communities (Birds & Natural Habitats) Regulations (S.I.477 of 2011) The principal instrument transposing the Birds and Habitats Directives into Irish law, with provisions for (*inter alia*): the conservation of natural habitats & habitats of species; activities, plans or projects affecting European Sites; appropriate assessment; & the protection of flora & fauna.

European Site Defined as including a Special Area of Conservation or a Special Protection Area, under the European Communities (Birds & Natural Habitats) Regulations 2011 (S.I.477 of 2011).

Forestry Regulations 2017 (S.I.191 of 2017), as amended Regulations that further transpose the Birds and Habitats Directives into Irish law, as they apply to forestry developments.

Habitats Directive The Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats & of wild fauna & flora, which aims to promote the maintenance of biodiversity in Europe, taking account of economic, social, cultural & regional requirements. The EU Habitats Directive, together with the Birds Directive, forms the cornerstone of Europe's nature conservation policy, & establishes the EU-wide Natura 2000 ecological network of protected areas. Annex I & Annex II list natural habitats & species (both animal & plant) of community interest whose conservation requires the designation of Special Areas of Conservation by Member States. The Habitats Directive is transposed into Irish law under the European Communities (Birds & Natural Habitats) Regulations 2011 (S.I.477 of 2011), as amended, and, as regards forestry developments, by the Forestry Regulations 2017 (S.I.191 of 2017), as amended.

NATURA Site Non-legal term sometimes used to describe a Special Area of Conservation or a Special Protection Area.

Qualifying Interest The particular species or habitat for which a European Site has been designated.

Significant effect A project may have a significant effect on a European Site if it (*inter alia*):

- reduces the area of an Annex I habitat, the habitat of an Annex II species, or the overall European Site;
- damages the physical quality of the environment (e.g. water quality & supply, soil compaction) within the European Site;
- causes serious or ongoing disturbance to species or habitats for which the European Site is selected (e.g. increased noise, human activity);
- results in direct or indirect damage to the size, characteristics or reproductive ability of populations within the European Site; or
- interferes with mitigation measures put in place for other plans or projects.

Note Case C258/11 Preliminary Ruling under Article 267 TFEU – Lough Corrib site – N6 Galway City Outer Bypass road scheme case: Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats & of wild fauna & flora must be interpreted as meaning that a plan or project not directly connected with or necessary to the management of a site will adversely affect the integrity of that site if it is liable to prevent the lasting preservation of the constitutive characteristics of the site that are connected to the presence of a priority natural habitat whose conservation was the objective justifying the designation of the site in the list of sites of Community importance, in accordance with the directive. The precautionary principle should be applied for the purposes of that appraisal.

Special Area of Conservation (SAC) Defined under S.I.477 of 2011 as meaning *"a site of Community importance designated by a Member State pursuant to Article 4(4) of the Habitats Directive through a statutory, administrative or contractual act, or any combination thereof, where the necessary conservation measures are applied for the maintenance or restoration, at a favourable conservation status, of either or both the natural habitats and the populations of the species for which the site is designated."* Also defined as a 'European Site'. In general terms, a SAC is prime wildlife conservation area considered to be important at a European as well as an Irish level, designated under the Habitats Directive.

Special Protection Area (SPA) Defined under S.I.477 of 2011 as meaning *"an area classified pursuant to Article 4(1) or 4(2) of the Birds Directive as a special protection area."* Also defined as a 'European Site'. In general terms, a SPA is an area of significance for the conservation of habitats which are important for birds & have been designated under the EU Council Directive 79/409/EEC on the conservation of wild birds (or 'Birds Directive').

Stage 1 A non-legal term often applied to AA screening.

Stage 2 A non-legal term often applied to the post-screening appropriate assessment.

14. Template for NISs compiled for forestry projects

Template v.Aug20

Natura Impact Statement

for [Insert Forestry Activity] project [File Ref. No.], located at [Townland(s)], Co. [County Name(s)]

Compiled by: [Insert name(s) of author(s)]

Completion date: [Insert date]

Important notes

- *All forestry-related Natura Impact Statements (NISs) submitted to the Department of Agriculture, Food & the Marine (DAFM) must adhere to this template (available as a WORD document).*
- *The green italic text throughout the template sets out instructions for completing the various sections and can be deleted as the document is compiled.*
- *All sections must to be completed, unless the DAFM letter requesting the NIS narrows the focus (in which case, sections not relevant can be marked 'N/A'). Issues not covered by the template can be addressed by adding new sections.*
- *Regarding the preparation of the NIS, in most cases, a person with appropriate ecological qualifications and experience will be required to undertake ecological surveys (if needed), research and analysis. However, it is very important that the forester overseeing the work also inputs directly into the NIS, regarding the identification and detailing of proposed mitigation measures. Joint ownership of such measures is essential, to ensure they are effective as mitigation, and realistic and practical to implement.*
- *The submission of incomplete, inaccurate or incoherent NISs will result in delays, requests for further information, & / or refusal.*
- *Other important instructions on completing the NIS are set out in the accompanying NIS Guidance Note – in particular, see Section 9 'Additional notes on completing the NIS'.*
- *Typically, the NIS is submitted by the applicant in response to a NIS Request Letter from the DAFM. However, if the applicant is submitting the NIS with the application itself, a completed Pre-Screening Report (template available) is also required. This Pre-Screening Report sets out expert opinion regarding which European Sites can be 'screen out' and which must be 'screened in' for appropriate assessment, and therefore forms the basis for the NIS itself.*

TABLE OF CONTENTS

Please include a table of contents, to aid the review the NIS.

Section 1: GENERAL DETAILS

Details of Author(s) *Provide the following details for <u>each</u> author involved in preparing the NIS.* *Typically, authors will include a relevant expert (typically a qualified & experienced ecologist) & the Registered Forester involved in the project.* *Note, the NIS requires the input of a competent expert(s) with the appropriate expertise.*	
Name	
Address	
Company name *(If relevant)*	
Tel. no.	
E-mail	
For each author: ➢ Provide details of his / her relevant qualifications / affiliations / years of experience ➢ Describe the scope of his / her contribution in preparing this NIS. *If more space is needed for additional details, provide on a separate sheet.*	

Project Location & General Details *An application for a licence under the Forestry Regulations 2017 (S.I.191 / 2017) and / or for approval under a DAFM forestry scheme is regarded as a 'project'. The area where the proposed activity (and ancillary operations) is to take place is the 'project area'.*		
County(-ies):	Nearest village:	
Townland(s):	6 inch OS Map number:	
Proposed activity (tick):	Afforestation	☐
	Forest road construction	☐
	Thinning (incl. managing under Continuous Cover Forestry)	☐
	Clearfell & Reforestation	☐
	Clearfell & No Reforestation	☐
	Aerial fertilisation	☐
Project area (hectares) / Length (metres):	_____ hectares / _____ metres	

DAFM file reference no. (if issued):		
Indicate the nature of the application	Application for forestry licence only	Yes ☐ No ☐
	Application for forestry licence & scheme support	Yes ☐ No ☐
	Application for scheme support only	Yes ☐ No ☐

Indicate the origin of this NIS:	NIS was sought by the FS-DAFM *via* a NIS Request Letter.	Yes ☐ No ☐
	NIS submitted with the licence / scheme application, based on the results of a pre-screening exercise. *(As per the notes on Page 1 of this template, if the applicant is submitting the NIS with the application itself, a completed Pre-Screening Report is also required.)*	Yes ☐ No ☐
	Other (describe):	

Description of the Project Area (i.e. site of proposed works)

In relation to the site of the proposed works (i.e. 'project area'):

- *Soil(s)*
- *Slope (incl. direction of fall)*
- *Habitats:*
  - *Identify existing habitats onsite to Fossitt* Level 3, with any possible Annex 1 habitat(s) highlighted.*
  - *Illustrate existing habitats onsite using a Current Environment & Habitat Map and include in the appendices a full description and results of any ecological survey / investigation deemed necessary and undertaken.*
- *Spatial relationship with SAC/SPA: Include a map (with hydrological connections) showing the spatial relationship between the project area and the European Site(s) referred to in this NIS.*
- *Water Framework Directive Sub-catchment: see iNET and www.catchments.ie*
- *Hydrological connections*
- *Existing landuse(s)*

(Fossitt, J.A. 2000. A Guide to Habitats in Ireland. Heritage Council. Available at https://www.heritagecouncil.ie/content/files/guide_to_habitats_2007_5mb.pdf)*

Proposed Operations

- *Describe, in chronological order, the constituent operations that comprise the proposed project, & the approximate duration of each. (For example, in the case of afforestation, constituent operations include the marking-out of setbacks, cultivation & drainage, fencing, planting, fertiliser application, vegetation control, beating-up & ongoing monitoring.)*
- *Detail each operation, e.g. "Deer fencing according to Forestry Standards Manual Table 12.1 specs.")*
- *Provide an Operations & Mitigation Map(s) illustrating the project design and the spatial area / location of the various operations.*

Section 2: SCREENED-IN EUROPEAN SITES – POTENTIAL IMPACTS & PROPOSED MITIGATION (IF POSSIBLE)

Complete the following table for each European Site screened in for appropriate assessment.

Typically, these European Sites will be identified in the DAFM's NIS Request Letter, based on the Minister's AA Screening Determination. However, if submitting this NIS with the application for a forest licence / scheme approval, a completed Pre-Screening Report is also required. This Pre-Screening Report sets out expert opinion regarding which European Sites can be screen out and which must be screened in for appropriate assessment, and therefore is needed to inform the NIS itself (specifically, Section 2 onwards).

Outline the results of any survey / ecological assessment / investigation involved. Full details of such to be given as an appendix.

[Insert Site Name & Code here]			
List each of the Qualifying Interest(s) (if SAC) / Special Conservation Interest(s) (if SPA) for this European Site. **Assign each QI / SCI its own row.** *QIs / SCIs with a similar ecology, potential for adverse impact & mitigation can be grouped together by merging cells.*	**Set out components of the Conservation Objectives (relevant information including attributes, conservation status & locations) for this European Site relevant to this project.** *Attach the full Conservation Objectives details as an appendix, or alternatively, insert here the link to the relevant 'Conservation Objectives' document on the National Parks & Wildlife Service website www.npws.ie/protected-sites*	**Considering the QI / SCI & the Conservation Objective(s), and supporting habitats and species(*), is it likely that the project will have an adverse effect on this QI / SCI & the achievement of the corresponding Conservation Objective?** **If 'yes', describe the nature, severity, mechanism & timeline of the adverse effect.** **If 'no', set out the basis for reaching this conclusion.** ** As required under ECJ Case C-461/17 (Holohan & Others v An Bord Pleanála).*	**If the potential for an adverse effect on this QI / SCI exists, detail the necessary mitigation to avoid, reduce or prevent this potential, and describe the mechanism through which this is achieved.** *If published DAFM requirements, standards, guidelines & protocols relevant to the forestry activity provide the necessary level of mitigation, fully reference that source and the relevant section(s) therein. It is not necessary to repeat the text itself.* *If the mitigation required represents a refinement of the above, or is imported from a non-forestry sector, or is wholly bespoke to the site, detail fully.* *Also note, mitigation may not be possible in some cases.* *See Note regarding mitigation below.* *Do not populate if no adverse effect is likely and no mitigation required. Instead, insert 'N/A'.*

If needed, add further rows for other QIs/SCIs.

Note regarding mitigation: Mitigation must be: specific; proven to be effective in avoiding, reducing or preventing the potential for the specific adverse effect(s) identified; and operationally viable. Provide the scientific rationale & other information supporting the effectiveness of the proposed mitigation in avoiding or eliminating any adverse impact effect on the integrity of the relevant European Site.

If the mitigation is:

- *time-related, specify;*
- *area-related, specify tailored setbacks / exclusions; and / or*
- *operational in nature, provide detailed specifications (including design drawings & illustrative photographs) & provide method statements describing step-by-step installation, maintenance & removal (as relevant), & associated timelines. Operational details must be provided here and cannot be deferred to a later date.*

Illustrate location of mitigation measures in the Operations & Mitigation Map.

Section 3: RESIDUAL EFFECT

State whether there may be a residual effect(s) arising from the project on any of the conservation objectives of the European Sites & corresponding QIs / SCIs, even with the proposed mitigation measure(s) applied.

If a residual effect(s) is identified, describe fully its nature, degree of severity, likely duration, & the way in which it might prevent certain QIs / SCIs from reaching favourable conservation status.

If there are no residual effects, it can be concluded that there is no possibility of the project itself (i.e. 'individually') having an adverse effect on the integrity of the associated European Site. However, if there is a residual effect, then this conclusion cannot be made, and any such residual effect must be considered in combination with other plans & projects, to identify if an adverse effect on integrity arises.

Section 4: IN-COMBINATION EFFECT

Using publicly-available sources of information, describe other plans & projects (both forestry & non-forestry) & arrive at a concluding statement regarding whether the project will have an adverse effect on the integrity of any European Site, in view of its conservation objectives and in view of best scientific knowledge, when considered in-combination with other plans & projects likely to have these effects.

Plans & projects include any planning or licensing proposal either submitted & still under evaluation, or with valid licences / approval in place.

The level of detail required will vary. A listing & brief description will suffice where there is no possibility of the project itself having an adverse effect, as an in-combination effect will not arise. However, where a residual effect has been identified, a more detailed investigation is required to establish if this, together with any effects arising from other plans & projects, may give rise to an adverse effect on the integrity of any European Site.

Public sources of information include the following:

- *eplans website www.eplanning.ie*
- *Various County Council planning websites not yet integrated into eplans (see www.eplanning.ie website for list)*
- *An Bord Pleanála website www.pleanala.ie/index.htm*
- *Environmental Protection Agency website www.epa.ie/licensing/*
- *Also see individual County Development Plans for each local authority's objectives regarding European Sites*
- *For forestry plans & projects, certain information can be sourced from the iNET system available to Registered Foresters, & under the Public Consultation link on www.agriculture.gov.ie/forestservice/*

Section 5: COLLATED MITIGATION MEASURES

Amend as appropriate.

The following collates the various mitigation measures identified above, deemed necessary following the examination of the potential adverse effects of the proposed project on the QIs / SCIs and Conservation Objectives of the various screened-in European Sites, taking into account potential residual effects and in-combination effects (i.e. Sections 2-4 above) .
List measures here, as numbered bullet points. Eliminate repetition (e.g. if same mitigation listed multiple times in Section 2, just detail once here).

Section 6: DECLARATION

Amend as appropriate.

It is objectively concluded, in light of the above objective scientific information, that, when the above mitigation measure(s) is / are implemented, the project, individually or in combination with other plans and projects, will not have an adverse effect on the integrity of any of the European Sites listed in Section 2 above, in view of their conservation objectives and in view of best scientific knowledge.		
I / we declare that this Natura Impact Statement accurately reports on the scientific examination of the project within the context of any relevant European Site(s) and on the findings of that scientific examination.		
Author name	***Signature***	***Date***
1.		
2.		
3.		

REFERENCES

List references for any guidance documents & survey methodologies used during the compilation of the NIS, together with any other sources of information used (e.g. results from previous studies). The following list of references is included for convenience – delete those that do not apply as a reference for this NIS.

DAFM. 2024. Forestry Standards Manual, November 2015. Department of Agriculture, Food & the Marine, Johnstown Castle Estate, Co. Wexford.

DAFM. 2024. Environmental Requirements for Afforestation. Department of Agriculture, Food & the Marine, Johnstown Castle Estate, Co. Wexford.

DAFM. 2019. Felling & Reforestation Standards. Department of Agriculture, Food & the Marine. See Forest Service Circular 14 / 2019, www.agriculture.gov.ie/forestservice/grantsandpremiumschemes2014-2020/schemecirculars/2019circulars/

DAFM. 2020. Forest Entrances – Requirements for Mandatory Consultation (Feb. 2020). Department of Agriculture, Food & the Marine. See Forest Service Circular 03 / 2020. https://www.agriculture.gov.ie/media/migration/forestry/grantandpremiumschemes/schemecirculars/2020/Circular032020SingleConsentSystem20022020.pdf

Department of the Environment, Heritage & Local Government (DoEHLG). 2009. Appropriate Assessment of Plans & Projects in Ireland. Guidance for Planning Authorities. Department of Environment, Heritage & Local Government. Available at: www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf

European Commission. 2018. Commission notice: Managing Natura 2000 sites. The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC. Available at: www.ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm

European Communities. 2001. Assessment of Plans & Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) & (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg.

Ryan, T., Phillips, H., Ramsay, J. & Dempsey, J. 2004. Forest Road Manual. Guidelines for the design, construction & management of forest roads. COFORD, Dublin.

Appendix 1: MAPS

Include any relevant maps integral to this NIS (including a Current Environment & Habitat Map and an Operations & Mitigation Map). Ensure clear cross-referencing between the main body of the NIS & the relevant appendix. Note, all maps used must of an appropriate scale & follow relevant conventions set out in Section 18 of the Forestry Standards Manual.

Appendix 2: SUPPORTING DOCUMENTS

Append documents and correspondence referred to in the main body of the NIS, so that the document is as complete as possible complete and that the need for cross-referencing with other sources is minimised.

Appendix 3: ECOLOGICAL SURVEYS & INVESTIGATIONS

Fully describe any necessary surveys & other ecological assessments / investigations undertaken in order to undertaken to inform this NIS. For example:

- *Desk-based studies, supporting survey(s) & data collection undertaken to inform decision-making process.*
- *Examples of surveys include walkover habitat assessments, botanical surveys, ornithological surveys, hydrological surveys (e.g. of existing forest drains).*

In relation to survey work onsite, describe survey scope & objective, methodology, timing & results. Include any relevant photos taken during the process

Also, see note in the accompanying guidance document, on invasive species and nationally protected habitats /species (either under the Wildlife Act or the Flora Protection Order).

If citing other surveys, data or research work, detail relevant source(s) & represent relevant findings.

Also record any consultation undertake with prescribed bodies (NPWS, IFI, etc.) or others.

The following is a proposed template for Ecological Survey Method (if more than one survey is required, report separately). Maps & photos should be included as appropriate.

- *Scope*
- *Desk study*
    - *Describe information reviewed. Provide references*
    - *Include date*
    - *Ensure information relates to or is directly relevant to the site.*
    - *Desk survey results*
- *Field Study*
    - *Survey scope*
    - *Methodology*
    - *Field survey results*
- *Assessment and Conclusions*

Appendix G

Scheduled Venues to View Record of Monuments and Places

In accordance with relevant regulations made under the National Monuments Acts 1930 – 2004, lists of, and maps showing, monuments protected under Section 12 of the National Monuments (Amendment) Act 1994 (i.e. monuments and places included in the Record of Monuments and Places) are available for inspection by members of the public during normal opening hours at a variety of venues. These include local authority planning offices, county libraries and various Teagasc offices.

The National Monuments Service maintains a web-based Map Viewer where details and locational information on most known or suspected monuments recorded by the Archaeological Survey of Ireland (ASI) in its Sites and Monuments Record (SMR), can be viewed.

Electronic copies of the Record of Monuments and Places (RMP) lists and maps are also available to download from the same website, listed below.

There are also a number of other ways in which monuments may be protected under the National Monuments Acts, in addition to the Record of Monuments and Places. Monuments may also be entered in the Register of Historic Monuments (under Section 5 of the National Monuments (Amendment) Act 1987), be in the ownership or in the guardianship of a local authority or the Minister for Arts, Heritage & the Gaeltacht, or be the subject of a Preservation Order or Temporary Preservation Order made by the Minister.

If further information on any of these topics is required, it is advisable to contact the National Monuments Service directly. Contact details as follows:

National Monuments Service

Department of Arts, Heritage & the Gaeltacht

Room G50

Custom House

Dublin 1

E-mail nationalmonuments@ahg.gov.ie

Tel. (01) 888 2178

Fax (01) 888 2689

Web www.archaeology.ie

Appendix H
Acid Sensitivity Protocol for Afforestation

1. Overview

Applications for afforestation approval (with or without grant aid) on sites located within certain 6 inch Ordnance Survey sheets designated as acid sensitive areas (see following pages for list) require a site-specific assessment of the acid sensitivity of watercourses. This sensitivity of the water to acidic inputs is determined by alkalinity, as measured using the Gran Titration Method.

Sampling and analysis shall be carried out on at least four separate occasions within the period 1st February to the 31st May inclusive, with each sample taken at least 28 days apart. Sampling must follow the procedure set out below, and analysis must be undertaken by an accredited laboratory independent of the applicant, as also specified below. Samples must be taken from all watercourses shown on the 6 inch OS map(s) as being within or adjoining the proposed afforestation site. If there are no watercourses within or adjoining the proposed site, samples must be taken from watercourses elsewhere on the applicant's property.

(Note, water sampling is not required for afforestation applications within acid sensitive areas that comprise of native woodland and / or agro-forestry Forest Types only – see note below.)

The minimum acid sensitivity measured from the four samples will determine the sensitivity of the site and the outcome of the Acid Sensitivity Protocol, as set out in Table 1.

Table 1 Possible outcomes arising from the Acid Sensitivity Protocol.

Where the minimum alkalinity of any one of the four samples taken is...	***Outcome***
<8 mg $CaCO_3$ l^{-1}	No afforestation permitted.
8–15mg $CaCO_3$ l^{-1}	Full, partial or no afforestation may be approved, following discussion and agreement between the Forest Service, the Environmental Protection Agency and Inland Fisheries Ireland (formerly the Regional Fisheries Board).
>15 mg $CaCO_3$ l^{-1}	Afforestation may be approved.

Any attempt to change the chemical composition of the water taken, or to be taken, for analysis by the addition of material(s) designed to so do, will immediately render the afforestation application void.

The results of the analysis of all samples carried out in the context of this protocol shall be available to the applicant, DAFM-Forestry, Inland Fisheries Ireland, the relevant Local Authority, and to the Environmental Protection Agency.

Persons taking water samples *must notify the relevant Forestry Inspector* at least two full working days prior to sampling, stating the proposed location and the proposed date and time of sampling. The Forest Service may take additional samples to compare with alkalinity results submitted. Water samples submitted without prior notification will not be accepted and repeat sampling will be required. The Registered Forester must also keep a record of the date and time at which notification was made to the Forestry Inspector, and a copy sent to the Forestry Inspector.

Samples not taken in accordance with the procedures outlined in this appendix must not be submitted.

2. Afforestation involving native woodland and agro-forestry

Water sampling under the Acid Sensitivity Protocol for Afforestation is not required for afforestation applications within acid sensitive areas that *only comprise* the following planting options under the Forestry Programme 2023-2027, either solely or in combination:

- Under the following planting options (or Forest Types, FTs) available under the Afforestation Grant and Premium Scheme:
    - FT 1: Native Forests (i.e. native woodland establishment)
    - FT 2: Forests for Water (i.e. native woodland establishment)
    - FT 3: Forest Creation on Public Land (i.e. native woodland establishment)
    - FT 5: Emergent Forest (i.e. the management of emerging woodland habitat)
    - FT 8: Agro-forestry (includes silvo-pastoral and silvo-arable systems, and forest gardening)
- Under both elements of the Native Tree Area Scheme (i.e. NTA 1 and NTA 2), as both involve the planting of small areas of native woodland.

The proposed afforestation site must meet the requirements set out in the relevant scheme documents for each option. For example, all of the native woodland options listed above must adhere to the scenario identified for the site, following DAFM's Native Woodland Framework procedure (e.g. Scenario 2: Brown Podzolics *(Oak-Birch-Holly with Hazel Woodland)* or Scenario 5: Highly Modified Peat & Peaty Podzols *(Pioneer Birch Woodland)*). Similarly, in relation to the native woodland-related Forest Types listed above, strict adherence to minimum site disturbance will apply during planting and establishment, with the additional requirement that no fertiliser application takes place.

3. Sampling procedure for rivers and streams

For sampling in relation to the Acid Sensitivity protocol, the following equipment is required:

- Six inch OS map or 1:5,000 map of the area to be sampled.
- Waterproof notebook and record sheets.
- Geographical Positioning System (GPS) unit, if available.
- Two litre HDPE plastic sample bottles. The number of bottles is determined by the number of sampling points plus some additional spare bottles. For the initial sampling, the sampler should examine the 6 inch map outlining the proposed afforestation and count the number of sampling points. This should indicate the number of bottles required. For subsequent sampling, samples should be taken at the same points as the initial sampling.
- Sampling bucket with rope.
- Funnel.
- Disposable gloves.
- Waterproof markers.
- Adequate protective clothing and footwear.
- Coolbox.

Before leaving the workstation or laboratory, the individual undertaking the sampling must have the following:

- sufficient information regarding the location of the afforestation site, to ensure that samples are taken from the correct watercourse(s);
- a map of the afforestation site illustrating all watercourse(s) within and / or adjoining the site (the map

must be of an adequate scale and detail to ensure easy direction to the exact location where water sampling is to be carried out);

- an adequate number of new sampling bottles, including some spares; and
- an adequate number of copies of the 1-page Water Sampling Field Sheet (see following page) to record details of each sampling site.

Furthermore, the sampler must also:

- have informed the landowner of his / her intention to undertake water sampling, and the purpose of that sampling;
- have secured the permission of the landowner to enter onto the land; and
- have contacted the Forestry Inspector at least two full working days prior to sampling, to give him / her the opportunity to undertake parallel water sampling; and
- be familiar with all heath & safety procedures and precautions relevant to the taking of water samples.

On arrival at the proposed afforestation site, the sampler should:

- confirm that the location is correct;
- advise the landowner of his / her presence onsite;
- confirm with the landowner the area of the proposed plantation; and
- advise the landowner of the sampler's approximate time of return.

On arrival at the sampling location, the following sequence applies:

- Observe the area of the proposed afforestation, compare with the map and identify the sampling locations.
- Proceed to the first sampling location.
- Record the co-ordinates with a GPS unit, if available. Otherwise, mark clearly on the map.
- *Using a permanent water-resistant marker,* label a sample bottle with the name of the stream / river, sample number and location, and the date and time.
- Using a plastic bucket (and a length of rope to lower the bucket into the river, where necessary), take up water. Rinse the bucket and empty it. Repeat this procedure at least twice, more times when necessary.
- Facing upstream and standing *mid-channel* (where the stream / river depth is shallow, i.e. <50 cm deep; otherwise, sample from the bankside or from a bridge, if suitably located), lower the bucket into the water and extract a sample of the water. Make sure that the water flowing into bucket does not contain any sediment 'kicked up' by the sampler's feet. The sample should be taken upstream of the point at which the sampler enters the watercourse.
- Rinse the 2 litre sample bottle and the funnel thoroughly at least three times with the water from the bucket, then fill the bottle with the water remaining in the bucket. Ensure that the bottle is filled up, leaving just 1-2 cm headroom.
- Place the lid tightly on the bottle. Squeeze the bottle to ensure that there are no leaks present.
- Recheck that the labelling on the bottle is correct.
- Place the sample bottle into its carrier crate.
- Each time a water sample is taken, a Water Sampling Field Sheet should be fully completed (see following page). Note on the form the name of the stream / river (if not name is apparent, highlight the watercourse clearly on the map), the sample number, the location (GPS coordinates, preferably), and the date and time that the sample was taken.

- Between sampling and dispatch to the laboratory, all samples must be kept cool and in the dark. Do not leave samples in the car / van where they are liable to become warm. Dispatch the samples, together with the corresponding Water Sampling Field Sheet(s), to an appropriate laboratory (see below) for immediate analysis.
- *At all times, use common sense*.
- *Apply appropriate precautions to ensure personal safety*.
- *Be mindful not to contaminate the sample by allowing sediment or any material other than the water flowing in the stream / river, to enter into the sampling bucket and the sample bottle*.
- *No smoking is allowed on site*.
- *At all times, avoid bodily contact with water intended for analysis*.

Samples can be submitted to any laboratory currently participating in relevant national or international inter-comparison exercises, and accredited by the Irish National Accreditation Board (INAB) and / or the United Kingdom Accreditation Service (UKAS) to undertake testing in compliance with the International Standard EN ISO / IEC 17025:2017.

A list of accredited laboratory can be found using the following link: https://www.inab.ie/inab-services/laboratory-testing/directory-of-testing-laboratories/

Note, the necessary water testing may not be undertaken by all of those laboratories listed, so check in advance. Any laboratory used must be independent of the applicant.

Water Sampling Field Sheet

(Print or photocopy as required.)

Applicant		**Contract No.**	
County		**6" OS No.**	
Townland			

Sample No.	Date collected	Time of collection	Water temp. (°C)	Remarks

Weather conditions on date of collection

General weather, recent conditions

Comments

Samples collected by: _____

Signature

State Name: _____

BLOCK CAPITALS

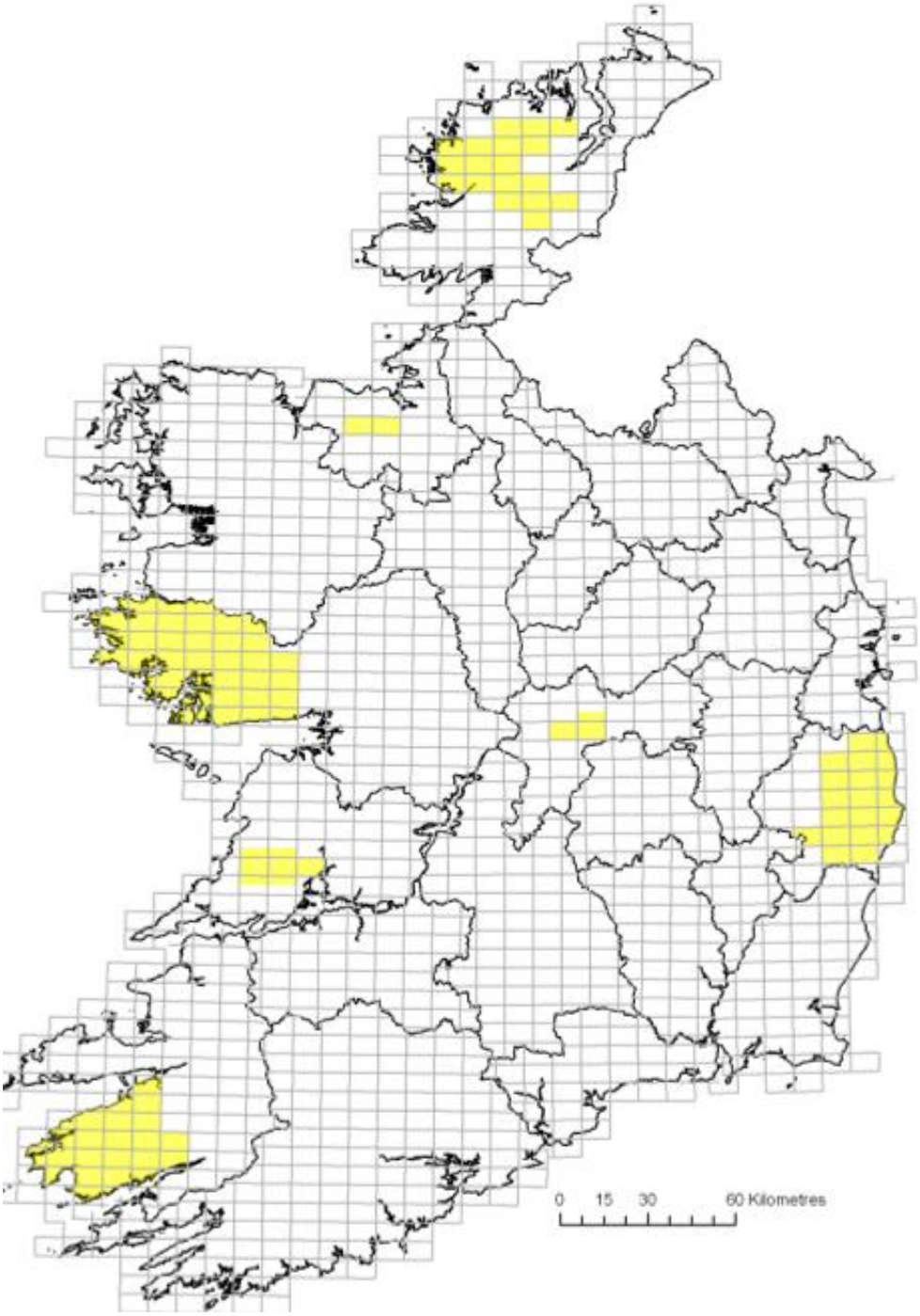
Date: _____

4. Six-inch Ordnance Survey sheets designated as being acid sensitive areas

All ranges listed are inclusive.

Clare	OS sheets	Southern half of 31 Southern half of 32 39 to 41 Northern half of 48 Northern half of 49
Donegal	OS sheets	34 to 36 41 to 44 49 to 51 57 to 60 67 to 69 77
Galway	OS sheets	9 to 13 21 to 27 34 to 40 48 to 55 62 to 68 75 to 81 89 to 93
Kerry	OS sheets	56 62 to 64 69 to 72 78 to 83 87 to 92 96 to 100 105 to 107
Offaly	OS sheets	Southern half of 16 23 to 24
Sligo	OS sheets	24 to 25
Wicklow	OS sheets	7 to 8 11 to 13 17 to 19 23 to 25 29 to 31 33 to 36 39 and 40

Map 1 Six inch Ordnance Survey sheets designated as acid sensitive areas (as represented by shading).



Appendix I
Areas of Potential Fisheries Sensitivity

The following list of 6 inch Ordnance Survey sheets are designated as areas of potential fisheries sensitivity, as agreed in 1992 between the DAFM-Forestry and the Regional Fisheries Boards (now Inland Fisheries Ireland).

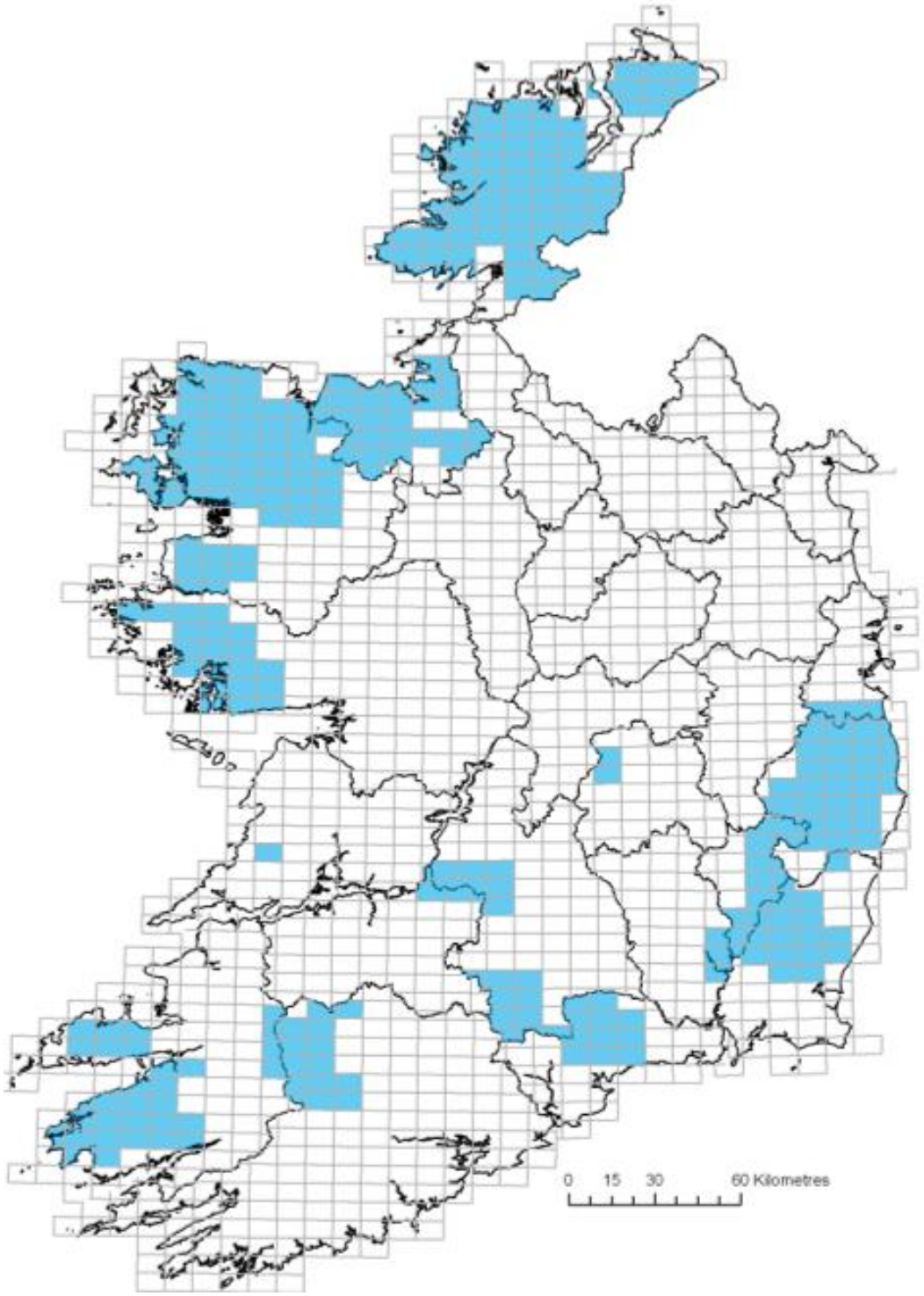
All ranges listed are inclusive.

Carlow	OS sheets	3 to 5
		8 to 10
		13 to 14
		17 to 18
		20 to 26
Clare	OS sheet	39
Cork	OS sheets	5 to 6
		12 to 14
		21 to 22
		29 to 30
		38 to 40
		47 to 49
Dublin	OS sheets	24 to 28
Donegal	OS sheets	10 to 12
		18 to 21
		23 to 26
		29 to 36
		40 to 45
		48 to 53
		56 to 71
		73 to 92
		94 to 98
		100 to 102
		104 to 105
Galway	OS sheets	22 to 25
		37 to 39
		51 to 53
		64 to 67
		78 to 80
		90 to 92

Kerry	OS sheets	32
		34 to 36
		41
		43 to 45
		50
		56 to 57
		60
		62 to 64
		69 to 72
		78 to 83
		87 to 92
		96 to 98
Kilkenny	OS sheets	29
		33
		37
Laois	OS sheets	6
		11
Limerick	OS sheets	1
		6 to 8
Mayo	OS sheets	4 to 6
		11 to 13
		18 to 22
		25 to 32
		34 to 39
		42 to 49
		54 to 61
		65 to 71
		78 to 80
		86
		96 to 98
		106 to 108
		115 to 116
Sligo	OS sheets	8 to 25
		28 to 38
		40 to 42
Tipperary	OS sheets	31 to 33
		37 to 39
		44 to 45
		73 to 75
		80 to 81
		86 to 87

		89 to 91
Waterford	OS sheets	1 to 2
		5 to 7
		13 to 15
		22 to 24
Wexford	OS sheets	1 to 2
		4
		8 to 10
		13 to 15
		18 to 21
		24 to 27
		31 to 32
Wicklow	OS sheets	1 to 8
		10 to 13
		16 to 19
		21 to 30
		32 to 35
		38 to 40
		44

Map 1 Six inch Ordnance Survey sheets designated as areas of potential fisheries sensitivity (as indicated by shading).

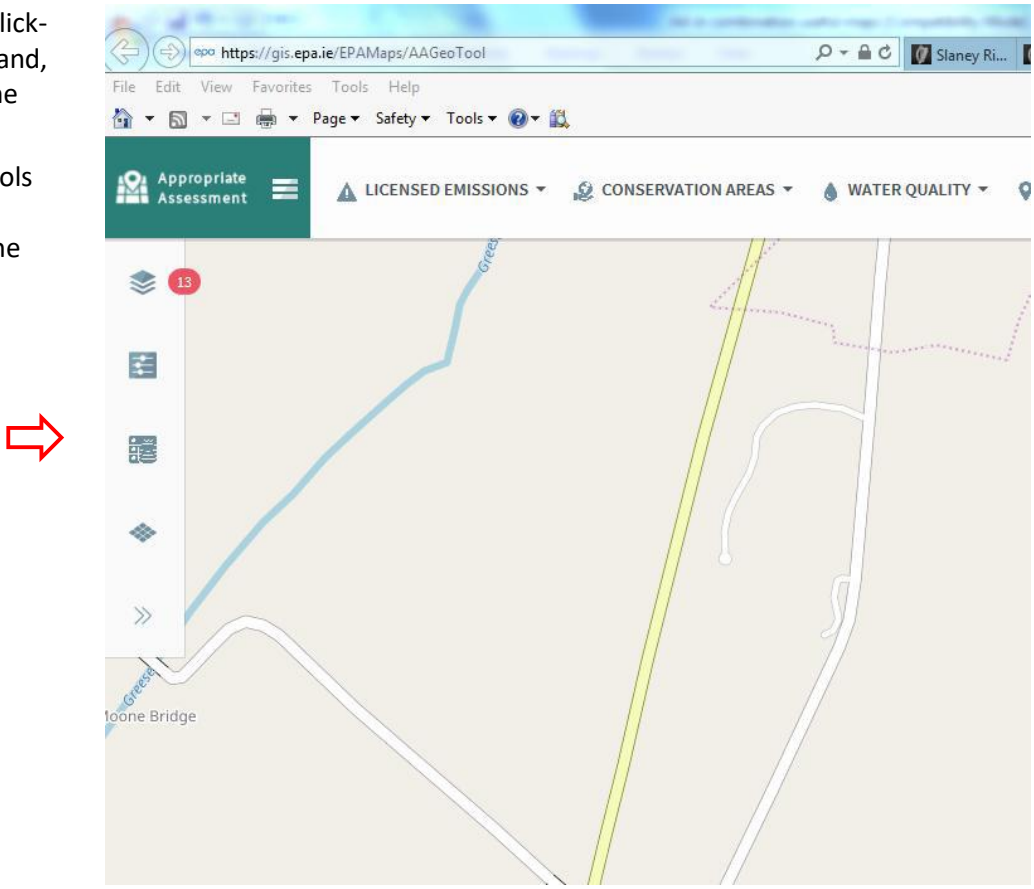


Appendix J
EPA Appropriate Assessment Tool: Guidance for Users

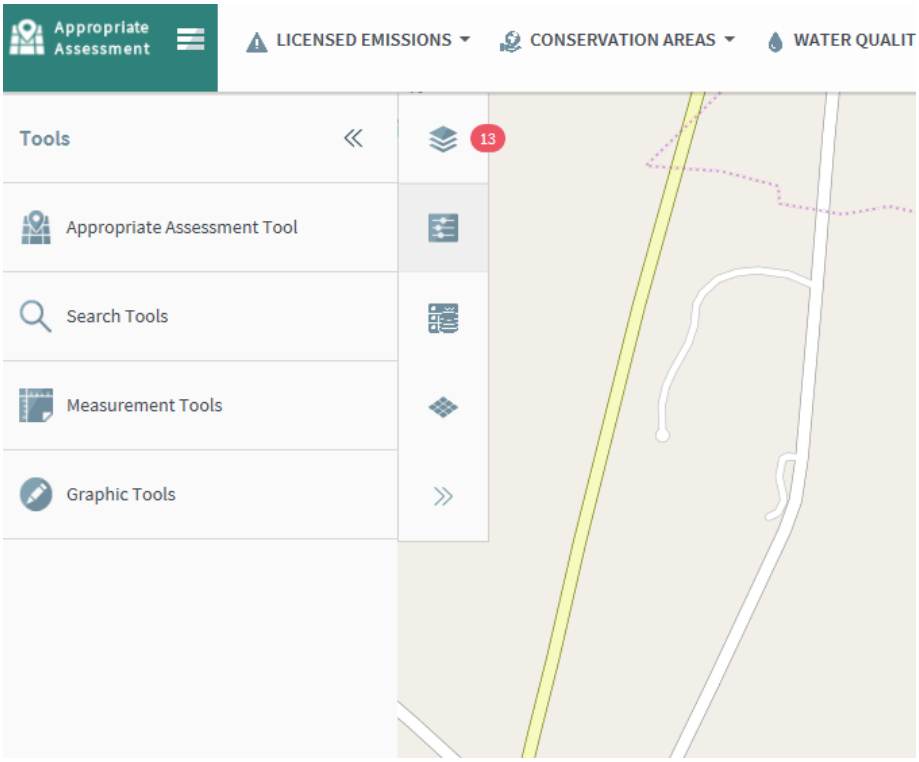
The EPA Appropriate Assessment Tool gis.epa.ie/EPAMaps/AAGeoTool is a useful tool for showing SACs and SPAs located within a certain radius, as follows.

To start, scroll into and 'click-and-drag' the map of Ireland, to locate the vicinity of the project area.

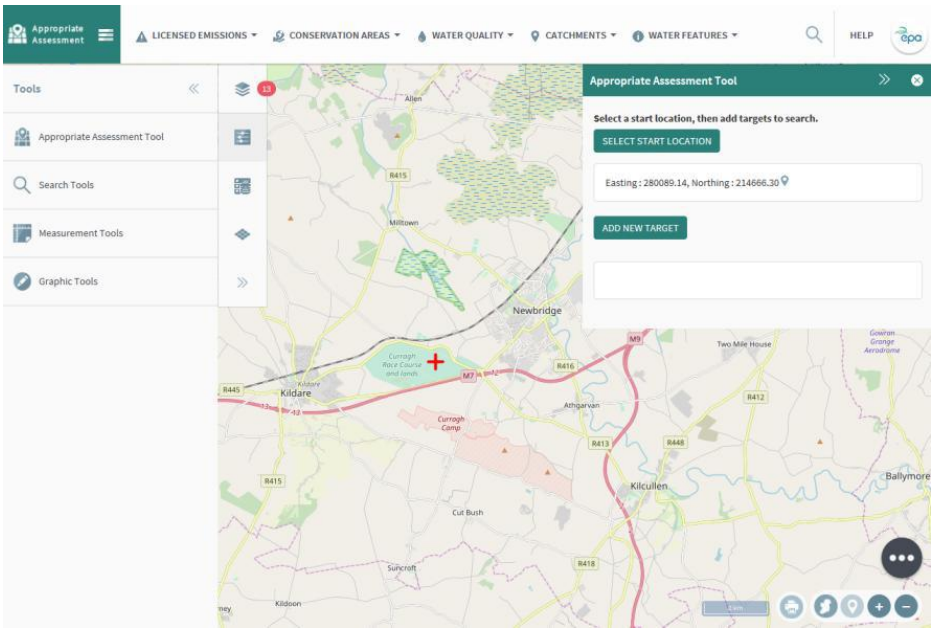
Once located, click the tools symbol on the left-hand margin, as indicated by the arrow below.



Then, click the ‘Appropriate Assessment Tool’ option, which opens a new panel.



Then click the ‘SELECT START LOCATION’ tab and drop a pin (red cross) on the centre-point of the project area.

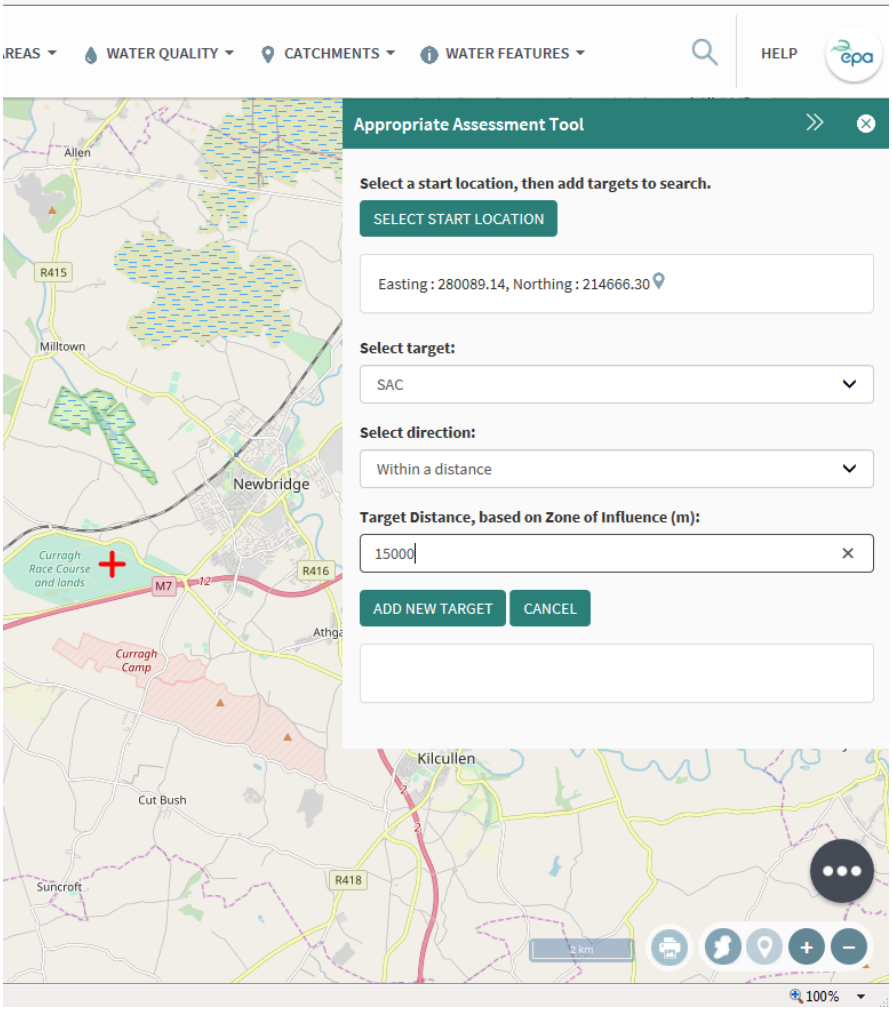


Then, click the ‘ADD NEW TARGET’ tab. This opens a panel with two dropdown lists.

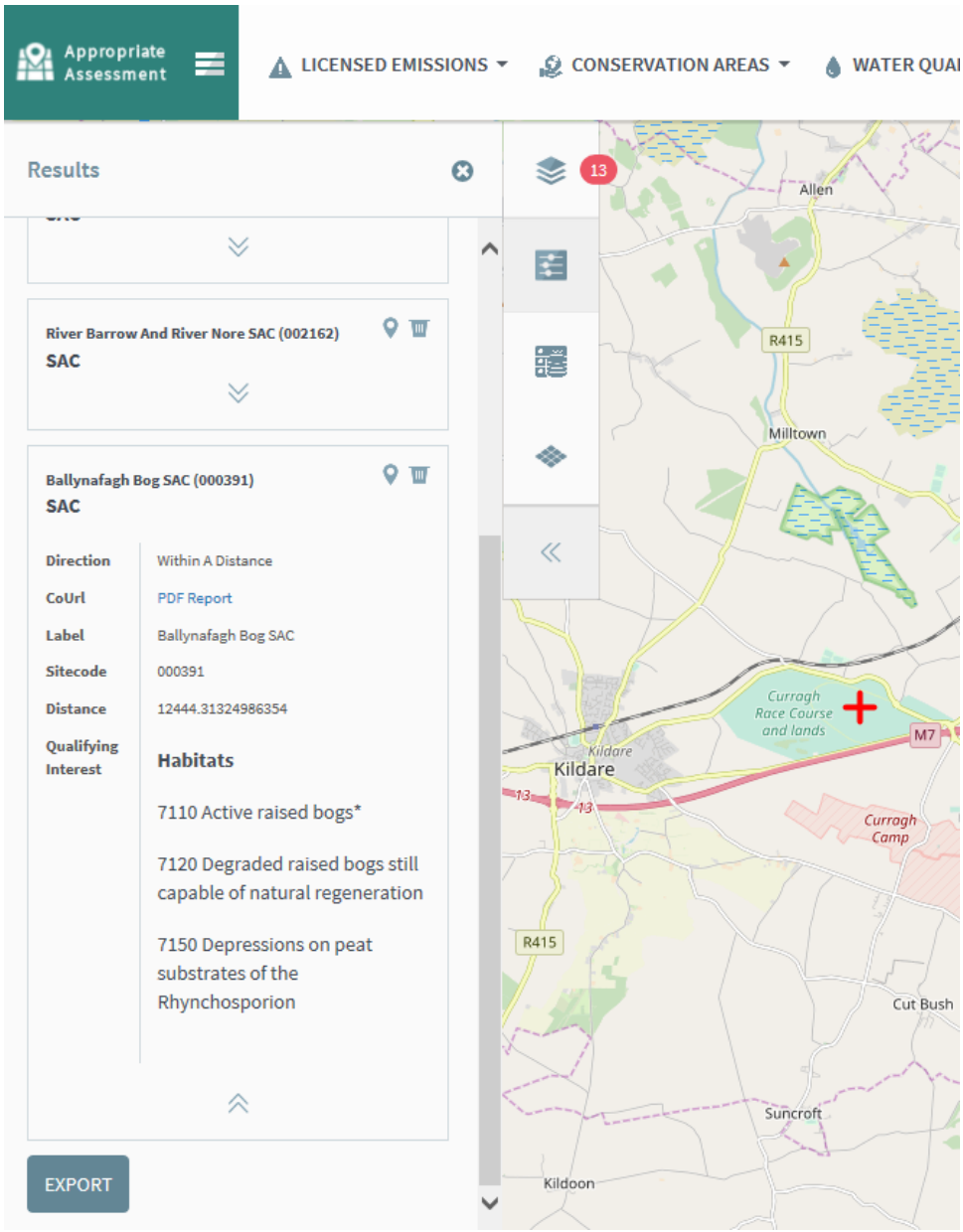
Under the ‘Select target:’ dropdown list, select ‘SAC’.

Under the ‘Select direction:’ dropdown list, select ‘Within a distance’. (Note, this dropdown list also offers ‘Upstream along a river’ and ‘Downstream along a river’ options.)

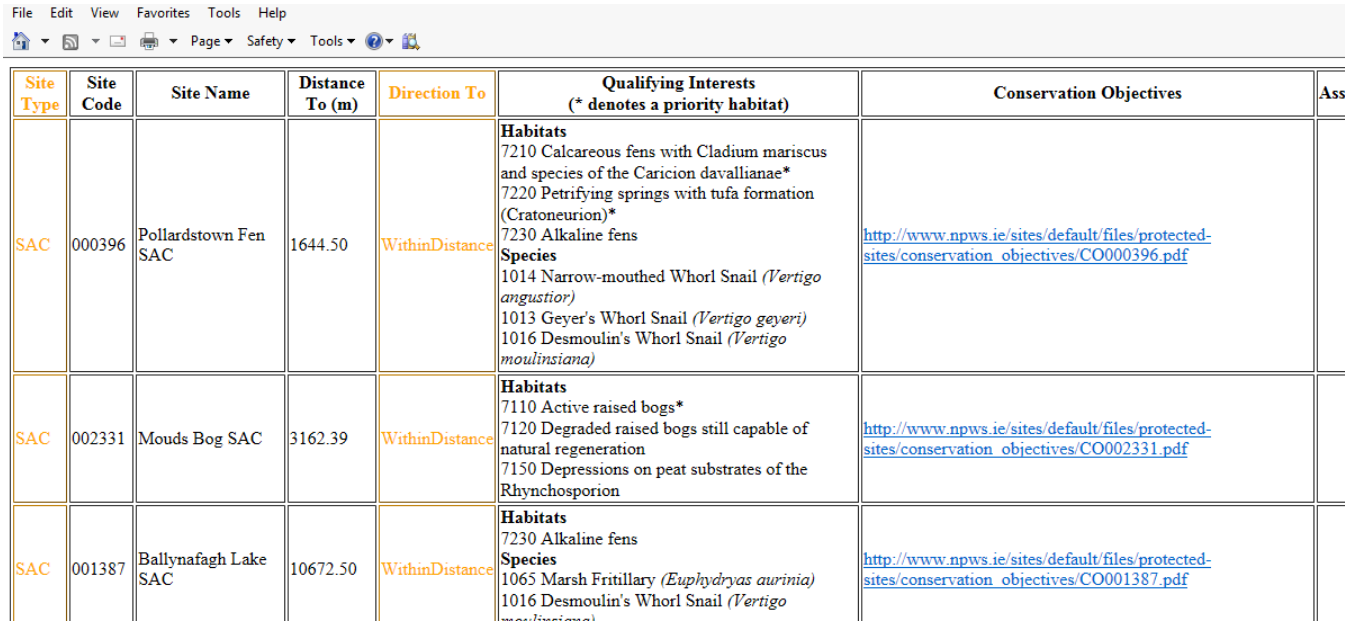
Then, under the ‘Target Distance, based on Zone of Influence (m):’ box, enter ‘15000’ (i.e. 15,000 m or 15 km).



Click on the 'ADD NEW TARGET' tab and the subsequent 'GET RESULTS' tab. This will show, in a panel to the left of the map, all the SACs within 15 km of the project area (i.e. the dropped pin). For each SAC, the panel provides the SAC name and site code, the exact distance of the SAC from the centre point, a link ('PDF Report') to the NPWS Conservation Objectives document, and the list of Qualifying Interests for that SAC.



Clicking on the 'EXPORT' tab at the bottom of this panel generates a tabulated version of this list, which can be saved or printed out.



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Site Type	Site Code	Site Name	Distance To (m)	Direction To	Qualifying Interests (* denotes a priority habitat)	Conservation Objectives	Ass
SAC	000396	Pollardstown Fen SAC	1644.50	WithinDistance	**Habitats** 7210 Calcareous fens with Cladium mariscus and species of the Caricion davallianae* 7220 Petrifying springs with tufa formation (Cratoneurion)* 7230 Alkaline fens **Species** 1014 Narrow-mouthed Whorl Snail *(Vertigo angustior)* 1013 Geyer's Whorl Snail *(Vertigo geyeri)* 1016 Desmoulin's Whorl Snail *(Vertigo moulinsiana)*	http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000396.pdf	
SAC	002331	Mouds Bog SAC	3162.39	WithinDistance	**Habitats** 7110 Active raised bogs* 7120 Degraded raised bogs still capable of natural regeneration 7150 Depressions on peat substrates of the Rhynchosporion	http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002331.pdf	
SAC	001387	Ballynafagh Lake SAC	10672.50	WithinDistance	**Habitats** 7230 Alkaline fens **Species** 1065 Marsh Fritillary *(Euphydryas aurinia)* 1016 Desmoulin's Whorl Snail *(Vertigo*	http://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO001387.pdf	

Scrolling out from the map itself will illustrate the location of the SACs in relation to the centre of the project area. The printer symbol along the bottom right hand corner of the map generates a '.png' file of the current map view, which can be saved or printed out.

To search for SPAs with 15 km of the project area, press the 'ADD NEW TARGET' tab and repeat the process.

This EPA mapping tool also has all the EPA licensed emissions, (IED, Waste, IPC etc.), designated sites, water quality information, and helpfully, the flow direction arrows for the waterbodies (which can be accessed using the dropdowns at the top of the page).

end

An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine