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Section 1: **Introduction**

1.1 Overview of the *Forestry Standards Manual*

The Forestry Division of the Department of Agriculture, Food & the Marine is Ireland's national forest authority. It is responsible for national forest policy, the promotion of private forestry, the administration of the forest licence system and forestry support schemes, forest health and protection, the control of felling, and the promotion of research in forestry and forest products.

The objective of the Forestry Division is *to develop forestry to a scale and in a manner that maximises its contribution to the national economic and social well-being on a sustainable basis, and which is compatible with the protection of the environment*.

This manual supports Ireland's Forestry Programme for the period 2023 – 2027.

The *Forestry Standards Manual*[1] provides guidance on the operational requirements of the various support schemes (Afforestation Scheme, Forest Road Scheme, etc.), which are subject to the conditions set out in each of the respective scheme documents, as published by the Department. Eligibility under the various schemes is governed by the terms and conditions of each, as set out in the relevant scheme document.

The maintenance of high silvicultural standards compatible with the protection of the environment is of paramount importance, and the standards and specifications set out in this manual indicate the minimum acceptable for grant aid under the various grant schemes.

Scheme documents are available on the Department's website, together with circulars amending or updating scheme requirements. Current Afforestation Scheme grant and premium rates are set out in Appendix 1. This *Forestry Standards Manual* complements, and should be read in conjunction with, the *Irish National Forest Standard*, the *Code of Best Forest Practice - Ireland* and the suite of mandatory environmental guidelines and requirements published by the Department relating to Water Quality, Archaeology, Landscape, Biodiversity, Harvesting, Aerial Fertilisation, Forest Protection, Freshwater Pearl Mussel, Otter, and Kerry Slug. Adherence to the measures described in these publications is a condition of all grant schemes.

This manual relates to the forestry support schemes funded by the Irish State under the Forestry Development Programme for 2023-2027. The programme is 100% funded from the Exchequer and is subject to European Union State Aid rules.

Also note, this document refers to applications for both a licence under the Forestry Regulations 2017 (S.I. 191 of 2017) *and* for grant support under the Afforestation Scheme. However, the Forestry Division may also apply it to applications for licence only (i.e. non-grant aid applications) as and when required.

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[1] Note that the *Forestry Standards Manual* is also referred to as the *Forest Standards Manual* in various scheme documentation.

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Section 2: **Application Process for the Afforestation Scheme**

2.1 Introduction

All proposed afforestation developments must receive the prior written approval of the Forestry Division.

It is an offence to undertake afforestation without the prior written approval of the Minister, in the form of a licence. Any afforestation development which proceeds without such approval will not be eligible for grant payment and premium under the Afforestation Scheme. Under the Forestry Act 2014, the Minister is empowered and may seek to prosecute the offending party through the Courts. In addition to any prescribed penalties imposed by the Courts upon conviction, the Courts may order the removal of the forest.

There is a differentiation between farmers and non-farmers in relation to the rate of premium payable under the Afforestation Scheme 2023-2027.

Following completion of the works, formal applications for payment of the Afforestation Scheme grant (1st and 2nd instalments) and premiums must be made by the applicant through his or her Registered Forester. This applies to all Forest Types (i.e. FT1 – FT12) under of the Afforestation Scheme.

2.2 Application for Pre-Planting Approval (Form 1)

All Form 1 applications must be completed and signed by the applicant and a qualified forester whose name is included on the Register of Foresters and Forestry Companies. This Register is available on the Department's website or on request from the Forestry Division. The following enclosures must accompany the application, where applicable:

- Form 1, including signature of the owner of the property
- Site Location Map (not required for iNET applications)
- Certified Species Map
- Biodiversity Map
- Habitats Map
- Fencing Map (if applicable)
- State Aid and Incentive Effect declaration by the beneficiary and additional documentation in the case of applications by large companies
- Calcium carbonate test results in relation to acid sensitive areas (if applicable) – see Appendix 11
- Drainage survey report (if applicable) – see Section 9
- Soil analysis report (if applicable) – see Section 11 and Appendix 14
- Forms A and B of the *Forestry & Freshwater Pearl Mussel Requirements* (if applicable)
- Release of any constraints on ownership, e.g. turbary rights on a folio

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The application is processed by the Forestry Division and assigned a unique Forestry Division reference number or 'Contract Number'. An online facility called iNET is available for the submission of a Form 1. Registered Foresters can register to use iNET by logging onto the Department's website gov.ie - IFORIS Internet (www.gov.ie)

Form 1 applications are subjected to the following procedures:

- The application is referred to the relevant Forestry Inspector for assessment and recommendations.
- As part of the process, further information may be sought relating to the project, *via* a 'Further Information Required' letter from the Forestry Division. This might range from revised maps, silvicultural queries or to the submission of a NATURA Impact Statement, based on concerns regarding a possible impact on a European site.
- If there are any environmental considerations identified, the application is simultaneously referred to one or more statutory consultees (primarily the National Parks & Wildlife Service, Inland Fisheries Ireland, the relevant Local Authority, Uisce Éireann and An Taisce).
- Notice of all applications for approval is published on the Department's website, and any member of the public or environmental non-governmental organisation may make a submission on the proposed development within 28 days.
- If the proposed development is greater than 25 hectares, the application is automatically referred to the relevant Local Authority for its observations. Sites below this threshold may also be referred to Local Authorities, depending on their location and landscape sensitivity. Sites may also be referred on a case-by-case basis where other potential issues are identified, for example proximity to a water abstraction point.
- Environmental Impact Assessment (EIA) screening and / or screening for Appropriate Assessment.
- If the site is equal to or greater than 50 hectares, or a proposed forest road is equal to or greater than 2,000 metres, an Environmental Impact Assessment Report (EIAR) must accompany the Form 1, to enable an EIA to be undertaken.
- In addition, if the Forestry Division considers, following its sub-threshold EIA screening, that the proposed development is likely to have significant environmental impact, an EIAR will be requested from the applicant, to enable an EIA to be undertaken.
- Following issue of a licence under SI. 191 of 2017 and a technical approval for the Afforestation Scheme, a separate application for financial approval must be made using a Form 1a, to be followed by a Notification of Substantive Commencement (Form 1b) and subsequently, Notice of Completion of Planting (Form 1c).

Note: *The issuance of a licence and a technical approval for the Afforestation Scheme confirms that: (i). the prior written approval for afforestation required under the Forestry Regulations 2017 (S.I. 191 of 2017) has been obtained; and (ii). the proposed afforestation project is compatible with the objective of ensuring that there are no adverse impacts for the environment or that such risks are mitigated by the conditions that form part of the licence/technical approval. It also confirms that the project complies, in principle, with the*

conditions of the Afforestation Scheme and that an application for a grant may be made, subject to the availability of funds and the completion of the project in compliance with the terms and conditions of the scheme. Persons who undertake afforestation without a licence may be liable to prosecution. A separate application for 'financial approval' must be submitted before the planting work commences if the applicant wishes to proceed with the project and apply for a grant. Financial approval will only be granted if there are sufficient funds available.

The referrals to prescribed bodies described above are initiated simultaneously.

If the Forestry Division District Inspector finds that issues requiring referral to a prescribed body have not been identified by the Registered Forester at the time of application, the referral will take place after completion of their report, resulting in delays in the processing of the application. Also note the DAFM document Forestry Scheme Penalty Schedules 2023.

2.3 Changes to specifications

It is strongly advised that the project submitted is the project which will, if approval is granted, proceed. Whilst there may be changes to an application as a result of the assessment process, other changes, post approval can lead to delays or not be facilitated. Any proposed changes to species and / or plot boundaries must be submitted to the Approvals Section of the Forestry Division in the form of a revised Certified Species Map, a revised Form 1 Plot Table (i.e. page 5 of the Form 1) and any other relevant documentation e.g. revised Bio map. Where significant changes to species and / or plot locations are proposed, re-referral to one or more prescribed consultation bodies and / or public notification may be required. In addition, the application may have to be reassessed by the Forestry Division. This may include situations where it is proposed to *exclude* a plot(s), as this may create an adverse environmental impact, particularly in relation to landscape considerations. For example, if the exclusion of some plots left the remaining plots visually obtrusive on a landscape-sensitive hillside, then this would constitute a significant material change to the project, thereby necessitating further consultation or a new application if the approval was granted. However, the revised application must still conform to the scheme requirements regarding, for example, ABE allowance and broadleaf content, on its own merits. Registered Foresters must contact Approvals Section of the Forestry Division in writing, outlining the proposed change being sought.

Significant material changes which have not been approved in advance of works being carried out may invalidate any approval issued under S.I. 191 of 2017 and any eligibility for grant aid.

2.4 Application for 1st Instalment Grant and 1st Premium (Form 2)

The 1st instalment of the Afforestation Grant and the 1st premium are due for payment upon the successful completion of the initial site operations and the submission of a completed Form 2.

The application must be completed and signed, at the time of submission, by both the applicant and the Registered Forester to whom pre-planting approval issued. An application for payment must be based on a recent field inspection within the last 2 months by a Registered Forester, who can declare that all plots meet the required standard.

The Form 2 includes a Forest Management Plan outlining the management objectives of the forest and a time frame within which the various management operations, including thinning and felling, are proposed. See Appendix 9 for details.

If the applicant carries out the development works, the Registered Forester who completed the Form 1 must complete the Form 2 application to confirm that the works have been carried out in accordance with the Form 1 specifications and Forestry Division standards. If developments are not compliant with scheme rules and specifications, the Form 2 must not be signed and submitted for payment.

No Form 2 will be processed for grant payment if the Forestry Company who carried out the work is different from that which received approval at Form 1 stage unless specific prior written approval has been given by the Forestry Division.

The following enclosures must be submitted as part of the application for the 1st instalment grant and the 1st premium:

- Completed Form 2
- Certified Species Map
- Biodiversity Map
- Fencing Map (if applicable)
- Current Tax Clearance Certificate(s) for the applicant and the Registered Forester
- C2 Certificate for contractor(s) used
- Provenance Declaration Forms for all species planted – see Section 8 and Appendix 15
- A valid mandate, if the grant is mandated to a Registered Forester / Forestry Company – see Appendix 8
- Forest Management Plan
- Proof of ownership – see Section 3

Where the applicant for payment is not the same as the person who received the initial technical approval, Declarations for Incentive Effect and Beneficiary should also be submitted.

Applications for the 1st instalment grant may be subject to site inspections by the Forestry Division to assess whether the newly planted Forest meets the required standards outlined in Sections 8 to 14. If the documentation is complete and the site inspection confirms the works have been carried out in compliance with the scheme, the 1st instalment grant and the 1st premium will be paid.

2.4.1 Statement of Costs

The Afforestation Scheme (including Forest Types (FTs) for Native Forest and Agroforestry, etc.) and the Thinning & Tending Scheme are administered under the fixed-rate grant system, and statements of costs are not required (with the exception of Elements 1 and 2 for FT3 and Facilities for FT4). Applicants must detail the area claimed per FT (as described in Section 4) and if claiming a fencing grant, the fence length, type, and whether or not the fencing posts used conform to the IS436 standard. The Forest Road Scheme is a cost-based scheme and the Department may seek additional information on costs claimed including itemised invoices and stone weight dockets.

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2.5 Application for 2nd Instalment Grant (Form 3)

Payment of the 2nd instalment grant under the Afforestation Scheme can be claimed 4 years after the completion date of the initial formation of the Forest, subject to the Forest being successfully established and maintained. Applications for the 2nd instalment may be subject to a site inspection by a Forestry Inspector to ensure that the Forest has been established and managed to the required standard. The application for payment of the 2nd instalment afforestation grant (Form 3) must be completed and signed by the applicant and a Registered Forester. An application for payment must be based on a recent field inspection within the last 2 months by a Registered Forester, who can declare that all plots meet the required standard. The Form 3 will be posted to the applicant by the Forestry Division at the appropriate time.

If the entire Forest is up to the required standard and established in accordance with conditions of the afforestation licence and all scheme conditions have been met, the 2nd instalment grant will be paid.

Payment of the 2nd instalment grant will be postponed on sites which have been damaged by fire and / or wind, until they have been successfully reconstituted and one full growing season has passed. In addition, the Forestry Division will re-assess reconstituted sites 4 years after planting, to determine eligibility for the continuation of premium payments.

2.6 Application for subsequent Premiums (Form 4)

All premiums after the 1st premium are applied for by completing a Form 4 (which is sent to the applicant annually by the Forestry Division), *unless* the applicant is registered as a user of the Department's online services. Where an applicant has registered to use these services, applications for forest premiums must be made at www.agfood.ie

The Forest must meet the standards required under the Afforestation Scheme at the time of application for the payment of the subsequent premium.

2.7 Forest Management Plans

A Forest Management Plan provides a general outline of how the forest will be managed and what operations will be required and undertaken over a specified time period.

After payment of the 11th premium, all scheme participants of the Afforestation Scheme must submit a *Forest Management Plan to cover the period from Year 12 to the end of the rotation and final harvesting*, for any forest which is 10 ha or greater. A Forest Management Plan must be submitted before payment of the 12th and subsequent annual premiums can be made. Forest Management Plans (FMPs) must be completed using DAFM's Forest Management Plan information system or iPLAN.

iPLAN is an online system designed to store, catalog and map forest management planning information that has been collated by an afforestation scheme applicant or their agent. Use of DAFMs iPLAN to record forest management plan information is required to ensure the continued payment of forest premium payments. For afforestation contracts less 10 hectares, use of the iPLAN system is not mandatory. However, scheme participants may opt to use iPLAN to submit a FMP voluntarily.

2.7.1 First Instalment Grant and 1st Premium

If part of the planted area fails Forestry Division inspection, the applicant must carry out the identified remedial works within the time frame prescribed by the Forestry Division. Payment of the 1st instalment and the 1st premium will be withheld until the remedial works have been completed to the satisfaction of the Department.

2.7.2 Second Instalment Grant

Under the Afforestation Scheme, the 2nd instalment grant will only be paid when the entire Forest is up to the required standard.

Further details are set out in Section 14 regarding the standards required.

2.7.3 Premiums

The Forestry Division carries out random forest inspections for the purpose of premium payments. Where the Forestry Division is of the opinion that a forest or part thereof does not meet the required standard and / or is not managed in accordance with the rules of the Afforestation Scheme, premium payments may be suspended, withheld, reduced or recouped in accordance with the scheme terms and conditions, and penalties may be applied.

Application for payment of the 2nd instalment shall be made using a Form 3. This will be dispatched by the Department in the 3 months before the 4th anniversary of the completion date of the Forest. The 5th and subsequent premiums can be claimed when due each year, following payment of the 2nd instalment grant. Where the 2nd instalment has not been applied for, the 5th and 6th premiums may be paid at the discretion of the Department. However, the 7th and subsequent premiums will not be paid until the 2nd instalment application has been submitted, the site is deemed as being up to standard and the 2nd instalment grant has been paid.

2.8 Registered Foresters and Forestry Companies

It is a requirement of the various forestry schemes that applicants must engage the services of a Registered Forester or Forestry Company to prepare, certify and submit applications on their behalf.

For this purpose, the Department maintains a Register of Foresters & Forestry Companies who have been met various criteria set by the Department, including educational qualifications and Professional Indemnity Insurance. The registration of a Forestry Company confers the status of 'Registered Forester' on qualified foresters nominated by that company, and the company is responsible for its foresters' obligations and compliance with the various standards that apply in respect of applications certified on behalf of the company.

A forester who is registered solely as a nominee of a Forestry Company may submit applications for and on behalf of that Forestry Company only and must not certify applications in a private capacity. Foresters who wish to be registered in their own right must make a separate application to the Department and must meet the requirements of the Terms and Conditions for Registered Foresters. The applicant and a forester whose name is listed on the Register

of Foresters & Forestry Companies must complete the Form 1, Form 2 and Form 3 applications.

Foresters and Forestry Companies who wish to be listed on the Register of Foresters & Forestry Companies must complete an application form, available from the Forestry Division. All Registered Foresters must sign an undertaking that they have read, fully understand, and will comply with, the terms and conditions for the Register of Foresters & Forestry Companies. In addition, they must have Professional Indemnity Insurance of at least €500,000 per claim.

Note that applications under Native Forest FT1, FT2, FT3 and FT5 require the input of a Native Woodland Scheme (NWS) Forester, who is a Registered Forester and who has also completed a Native Woodland Scheme Training Course held by the Forestry Division in partnership with Woodlands of Ireland. See Appendix 2 for further information.

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Section 3: **Ownership**

3.1 Introduction

In order to qualify for the Afforestation Scheme grant and premiums, the applicant(s) must own, lease or be in joint management of the lands proposed for planting. All applicants must provide, as applicable, documentary evidence of ownership, and of leasing or joint management, to receive grants and premiums under the scheme. It is in the interests of the applicant and his / her Registered Forester, to establish the availability of this documentation and to identify and / or resolve any constraints on ownership, before lodging an application for pre-approval.

No grant or premium can be paid until the applicant has provided satisfactory documentation to confirm that s/he owns, leases or is in joint management with the owner of the lands in question.

3.2 Proof of ownership

Where the applicant is the registered owner of the land, a copy of the Folio documents and Filed Plan (Folio Map) identifying the applicant as the owner must be provided as proof of ownership. Currently, ownership status is declared at Form 1 stage by the applicant and is confirmed at Form 2 stage by submission of supporting documentation. However, the Forestry Division may seek proof of ownership at Form 1 stage, before the application can be assessed.

If an applicant has recently acquired the lands and is in the process of registering ownership with the Property Registration Authority, the following documentation may be submitted:

- Folio and Folio Map in the name of the vendor / transferor *plus*
- a Deed of Transfer with Stamp duty paid *or*
- an Unstamped Deed plus the Department's Certification of Land Transfer (see Appendix 3) signed and stamped by a solicitor.

For unregistered land, where the proof of ownership takes the form of an Indenture or Memorial from the Registry of Deeds, such documentation should be submitted along with a map stamped by the applicant's solicitor showing the area of the proposed Forest. The owner's solicitor must also provide a letter confirming that the area of the Forest is included in the Deeds, and that ownership is unchanged since the last entry.

3.3 Commonage

A Commonage Consent Form (see Appendix 4) enables one of the owners of a commonage to apply under the Afforestation Scheme, provided the other owners give their consent. Documentary evidence – as set out in Section 3.2 above – identifying all of the owners of the commonage is required. Each of the owners is entitled to apply for premiums in respect of their share of the area grant aided. Commonage Consent Forms must be witnessed and stamped by a solicitor.

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3.4 Leases

An applicant who is leasing lands may be eligible to receive the Afforestation Scheme grant and premiums. The following documentation must be provided in support of the application:

- a copy of the Folio documents and File Plan (Folio Map) or other documentation as described in Section 3.2, identifying the owner of the lands, and
- a copy of the Lease.

The Lease must comply with the following requirements:

- The Lease must be stamped by the Revenue Commissioners or registered with the Property Registration Authority.
- The Lease must be signed and dated and witnessed independently in a solicitor's office.
- The duration of the term of the Lease must be at least 50 years where the crop is predominately coniferous in nature, i.e. approximating the length of a conifer crop rotation and allowing time for reforestation. Longer leases may be required where broadleaf species are planted, as decided by the Department on a case-by-case basis.
- If the Lease covers an area in excess of 21 hectares, it must be shown as a burden on the Folio. Alternatively, a new Folio may be raised for the leased area.
- The lessee (the applicant for the Afforestation Scheme grant and premiums) must be the beneficiary of the annual afforestation premiums.
- The Lease must specify who is to be the beneficiary(s) of the timber crop and must also state that the Forest will be subject to the Forestry Act 2014 and any subsequent Act regulating the felling and replanting of trees.
- The monetary cost of the Lease must be stated. In the event that this amount is not the commercial rate for leasing the land, an explanation must be provided.

3.5 Joint management

A joint management arrangement may be made only between *immediate family members*, namely, husband and wife, sons, daughters, parents, brothers and sisters. The owner of the lands may give consent to an immediate family member who is jointly managing the lands to claim the Afforestation Scheme grant and premiums. The owner consents to forego the right to these payments. In these cases, the following documentation is required:

- Documentary evidence, as defined in Section 3.2 above, identifying the owner(s) of the planted lands.
- A Joint Management Consent Form (see Appendix 4) completed by the owner(s) of the lands and the applicant.

Owners who wish to use the joint management facility must comply with the tax clearance requirements.

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3.6 Constraints on ownership

The Forestry Division cannot give approval for afforestation in respect of lands on which there are constraints or burdens in favour of a 3rd party (e.g. turbary rights, grazing rights, rights-of-way), unless documentary evidence is submitted showing that all such rights have been relinquished or that the area upon which the constraint exists is excluded from the application. Standard forms for the relinquishment of turbary and grazing rights are provided in Appendices 5 and 6. Where applications for approval are submitted without this documentary evidence, the application will be processed but approval will not issue until the required evidence is received. Applications for payment of the 1st instalment and 1st premium (i.e. Form 2) will not be processed where constraints on ownership remain.

Tree planting is not permitted on a right-of-way, and such areas must be excluded from proposed Forests.

3.7 Change of ownership

The Forestry Division must be notified if there is a change of ownership of a grant-aided Forest during the term of the contract, as defined by the relevant scheme documentation. An original applicant provides signed undertakings when s/he claims payment (*via* Form 2) of the 1st instalment and the 1st premium, including an undertaking to notify the Forestry Division in advance of any proposal to sell or transfer ownership of any or all of the afforested land, and to repay all grants and premiums received if this condition or any of the terms of the Afforestation Scheme are breached.

Likewise, the Forestry Division should be notified as soon as possible if the death occurs of the owner or joint owner of a grant-aided Forest, so that arrangements can be put in place to continue payment of the grant and premiums to the new owner(s).

Once a change of ownership is notified to the Department, payments will be suspended until the registration of the new applicant(s) has been finalised. Any arrears accruing may be claimed at that stage, provided the documentation needed to register the new owner(s) is submitted to the Department in accordance with the conditions of the scheme.

The documents required at change of ownership stage broadly coincide with those required to claim the 1st premium, *viz.* proof of ownership, and a new signed commitment (on a Form 5) to take over the obligations of the scheme. In addition, the new owner(s) must provide evidence of the reason for the change of ownership / change of applicant and the date of that event.

Payment of annual premiums is always subject to the satisfactory maintenance of the Forest to Forestry Division standards, the availability of funds within each financial year, and compliance with the tax clearance regulations.

If the previous owner was in receipt of a farmer rate of premium (this is applicable to members of schemes operational before 1st January 2015 and after 1st January 2023 only) in relation to a Forest that is subsequently transferred / inherited, the new owner may also be eligible to claim the farmer rate, provided s/he satisfies the eligibility criteria for that rate, as set out in Part IV of the *Afforestation Scheme: Guide on Change of Ownership / Change of Applicant* (available on the Department's website https://www.gov.ie/en/service/02ca9-forestry-grant-scheme-change-of-ownership/).

If the previous owner was paid a premium at the (lower) non-farmer rate, this rate will continue to apply to that contract. The rate of premium cannot be increased, even if the new

owner satisfies the eligibility criteria for the (higher) farmer rate.

When the term of the contract ends, the Forestry Act 2014 (and any subsequent Act which controls the felling and replanting of trees) will apply regarding the landowner's use of the property. Owners shall contact the Felling Section of the Department before undertaking any felling or tree clearing operations. The provisions of the Forestry Act 2014 apply, regardless of whether or not the owner participated in the Afforestation Scheme.

Forest owners are encouraged to establish and maintain contact with their local Teagasc Forestry Advisor and also with a Registered Forester, either the forester who oversaw the afforestation itself or a different forester. The list of Registered Foresters and Forestry Companies is available from the Department. Forest owners are encouraged to continue the active management of the Forest. At the appropriate stage, thinning's from the Forest may provide a return from stake wood or wood-energy. In the longer term, thinning a Forest will help to optimise the financial return at the end of the first rotation, by helping the forest to grow to its full potential and value. Forest owners are actively encouraged to examine alternative management objectives for their forest such as management under Continuous Cover Forestry (CCF).

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Section 4: **Forest Rules and Forest Types (FTs)**

4.1 Forest rules

For the purposes of the Afforestation Scheme, a proposed *Forest* is a *plot* or a number of plots on the same holding and contained in a single application planted in a single planting season under a single Contract Number.

To be considered eligible under the Afforestation Scheme and for the purpose of calculating the grant and premium rates applicable, the following Forest rules apply:

- **Rule 1:** The forest must contain a minimum of 20% broadleaves by area. This can comprise the area occupied by broadleaves planted in broadleaf Forest Types, broadleaves planted as part of the 'minimum 20%' requirement for conifer Forest Types, and/or additional broadleaves planted for environmental and landscape reasons.
- **Rule 2:** *Each plot within the Forest must comply with one of the Forest Types (FTs) listed in Table 4.1, and its corresponding requirements*. Specific requirements apply to each FT, as indicated in Table 4.1, if it is to receive support. Different grant and premium rates also apply for each FT - see Appendix 1 for details. Note: plots cannot be combined for premium purposes. Mapping conventions for each FT are described in Section 17.

(**Note**, where site permitting, the required 20% broadleaf component within any afforestation project located within, or partially within, specified water sensitive areas may include Native Forest FT1 and / or FT2 plot (or plots) along sensitive sections of any watercourse adjoining or crossing the site, with the primary objective of enhancing water protection. Specific details are set out in Appendix 2: Native Forest Framework.

The Forestry Division *Environmental Requirements for Afforestation* require that in Forests greater than 10 hectares, Areas for Biodiversity Enhancement (ABEs) should comprise up to 15% of the area. Where Forests are less than 10 hectares, the open space component of ABEs should be designed in conjunction with neighbouring land use and may be reduced. The eligibility of different features for inclusion as ABEs for grant and premium purposes is set out in Section 6.

Note that at least 85% of the claimed area must have trees planted at the required stocking.

Registered Foresters should ensure that plots comprising conifer FTs incorporate groups of strategically placed broadleaf species along edges and visually prominent locations that are 'public-facing' (e.g. along roads, facing dwelling, fitting within the landscapes), site permitting. These broadleaves should be managed on a continuous cover basis for visual amenity over multiple rotations. For details on appropriate species selection refer to Section 8 of this document which provides guidance on the most suitable site types for different species (e.g. in terms of soils, exposure tolerance, frost tolerance etc.).

Please note, an afforestation project comprising *just* FTs 10, 11 and 12 will satisfy Forest Rule 1 where 20% additional broadleaves are planted for environmental and landscape purposes.

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Table 4.1 Forest Types (FTs) and corresponding requirements. (Also see Appendix 1 for the current grant and premium rates for each FT, under the Afforestation Scheme.)

FT no.	Definition
FT 1	**Native Forest: (Scenarios 1 - 6):** Applicants can apply to establish native forest across the entire site (i.e. all FT1 (see below)) or as a plot(s) within a larger afforestation project alongside other FT' as appropriate. See Appendix 2 for Native Forest Framework.
FT 2	**Forest for Water:** FT1, the creation of native forest is targeted at specific geographic locations where the primary objective of forest establishment is the protection of water from what are referred to as significant pressures. See Appendix 3 for details.
FT 3	**Forest Creation on Public Lands**: to encourage Public Bodies to establish new native forest on suitable bare land. The Forest Creation on Public Lands Forest Type requires the creation of new native forests consistent with the six Native Forest Framework scenario as detailed in Appendix 2 (see also FT1).
FT 4	**FT4 – Amenity Forests / NeighbourWoods**: are accessible, close-to-home forest amenities established on green field sites and developed in partnership with local people and other interested groups, for public use and enjoyment. Suitable projects under FT4 must have a clear potential for the development of an attractive amenity forest in areas that are strategically located, easily accessible and can be or are being well used by local people. FT4 Forest Type requires the creation of new native forests consistent with the six Native Forest Framework scenario as detailed in Appendix 2 (see also FT1).
FT 5	**Emergent Forest / Rewilding:** Forest establishment under FT5 involves the protection, enhancement and enrichment planting of existing emergent native forest. Emergent Forest is designed to encourage landowners to consider the possibility of retaining existing emergent forest and to allow this habitat to develop as native woodland, for both environmental and wood production purposes.
FT 6	**Broadleaf (mainly oak and beech):** This FT comprises pure oak or beech. Oak and beech must be planted pure at a stocking rate of 2,500 stems / ha on all sites and at a spacing of 2.0 x 2.0 m. On large sites where additional shelter is required, an appropriate nurse species may be introduced, with at least 10 lines of oak between each line of nurse species. All nurse species must be planted at a spacing of 2.0 x 2.0 m.
FT 7	**Diverse Broadleaf:** This FT is comprised of an acceptable broadleaf species other than oak or beech and may include Additional Broadleaves (ADB). All species must be planted pure at a stocking rate of 2,500 stems / ha on all sites and at a spacing of 2.0 x 2.0 m. On larger sites where additional shelter is required, an appropriate nurse species may be introduced. All nurse species must be planted at a spacing of 2.0 x 2.0 m.
FT 8	**Agroforestry:** Forest establishment under FT8 has been designed to create Silvopastoral agroforestry systems which combine forestry and pasture on the same area of land. A minimum stocking rate of 400 trees per ha is specified subject to design requirements**.** Acceptable broadleaf species include oak, sycamore and cherry, red oak and walnut.
FT 9	**Seed Orchards:** The aim of forest establishment under FT9 is to increase the availability and quality of forest tree seed in new newly planted seed orchards and seed production areas. FT9 supports the establishment of outdoor seed orchards on green field sites. The maximum eligible area for outdoor seed orchards is 5 ha.
FT 10	**Continuous Cover Forestry:** The Continuous Cover Forestry FT consists of production forests which are suitably structured with a diversity of trees species to be managed as continuous cover forests from establishment. A minimum 20% broadleaf component is mandatory for this FT. All species must be planted at a stocking rate of 2,500 stems / ha on all sites and at a spacing of 2.0 x 2.0 m.
FT 11	**Mixed high forests: Conifer, 20% broadleaves:** This forest type is comprised of a plot planted with an acceptable conifer species (excluding Sitka spruce) with a minimum of 20% broadleaves. Broadleaf species can be intimately mixed throughout the forest or planted in groups through the forest, or a combination of both (where silviculturally compatible with the main species). All species must be planted at a stocking rate of 2,500 stems / ha on all sites and at a spacing of 2.0 x 2.0 m.
FT 12	**Mixed high forests with mainly Sitka spruce, 20% broadleaves:** This forest type is comprised of a plot planted with Sitka spruce plus a minimum 20% broadleaves by area. Broadleaf species can be intimately mixed throughout the forest or planted in groups through the forest, or a combination of both (where silviculturally compatible with the main species). All species must be planted at a stocking rate of 2,500 stems / ha on all sites and at a spacing of 2.0 x 2.0 m.

Section 5: **General Site Requirements**

5.1 Land for afforestation

The term 'afforestation' means the planting of land not previously under forest. The Afforestation Grant and Premium Scheme 2023-2027 is applicable to agricultural land. For the purposes of the scheme, non-agricultural lands where there are no significant adverse silvicultural or environmental considerations may be considered on application.

Note, the environmental suitability of a proposed afforestation project is also considered by the Forestry Division as part of the overall assessment process which also takes into account the protocols detailed in the Forestry Division Documents: Land types for Afforestation, and the Environmental Requirements for Afforestation. Proposals are assessed on a case-by-case basis and sites that are deemed to be inherently productive in terms of their ability to support vigorous tree growth may not be approved, due to other constraints.

5.2 Access

5.2.1 Ownership of access

The applicant must own or have written permission, certified by a solicitor, to use or have right-of-way on the access route to the Forest. Where the owner's site is land-locked, access to a public road should be sought and written permission to use an access road should be provided. Access and legal rights-of-way should be shown on the Biodiversity Map at Form 1 stage. DAFM may seek further information on access matters at pre-approval stage or before a site may be deemed eligible for 1st Instalment payments.

5.2.2 Adequate access

It is essential that a landowner is aware that adequate access is required from a public road to the proposed forest to establish, manage and harvest the crop and to accommodate forestry traffic in an unrestricted manner. Where adequate access does not already exist, the access must be capable of being upgraded to the required forest road standard at harvesting stage. Exits / entrances to the main road should be planned and developed within the property and adhere to any legislative planning requirements. In a situation where there are no proposals for a forest road, the land should be accessible from the public road by forwarders and other terrain vehicles. Adequate access is deemed relevant for afforestation purposes once the proposed lands are adjoining a public road. Similarly, a registered right of way (ROW) that provides adequate access from the proposed lands to a public road will be deemed sufficient if it can be used for management purposes. The Forestry Division acknowledges that not all forests planted will require large machinery access for management purposes as long as ROW exists or the site adjoins a public road.

Where practical and feasible, access to forest land should select the least visually sensitive route, particularly in areas of high landscape sensitivity.

Prior to planting new forests, consideration should be given by the landowner to the distance to market for timber, fibre and biomass products, to minimise greenhouse gas emissions related to transport.

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5.3 Minimum area

5.3.1 Mixed High Forests

- A Mixed High Forest must not be less than 1.0 hectare in area. A smaller Forest area is acceptable if the forest directly adjoins existing forest.
- Mixed High Forest plot must not be less than 0.2 hectare.

5.3.2 Broadleaf Forests

- A broadleaf forest must not be less than 0.1 hectare in area.
- A Broadleaf plot must not be less than 0.1 hectare.
- An agroforestry plot must be not less than 0.5 hectare.

5.4 Minimum width

All plots must be 20 metres or greater in width, as measured tree-to-tree (i.e. excluding open spaces such as aquatic buffer zones, public road setbacks and archaeological exclusion zones).

In certain situations, e.g. to cater for landscape design and existing features, 10% of a proposed plot area can be less than 20 metres in width to a minimum of 10m in width.

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Section 6: **Biodiversity and Setback Distances**

6.1 Overview

For the purposes of the Afforestation Scheme, at least 85% of the site submitted eligible for grant aid must be planted with trees.

As described in the *Environmental Requirements for Afforestation*, Areas for Biodiversity Enhancement (ABEs) comprise open spaces and retained habitat. It is a requirement that up to 15% of the forest area is identified as an ABE.

In sites less than 10 hectares in area, the open space and retained habitat element of ABEs should be designed in conjunction with neighbouring land use and may be reduced Conditions of approval for any afforestation applications may specify a particular requirement for certain areas within the site to be retained as ABEs.

6.2 Eligibility as ABEs

The ABE features that can occur on an afforestation site, may range from existing habitats and small biodiversity features, to setbacks and open spaces for future access, to areas subject to legal burden. Tables 2 and 3 in the Environmental Requirements for Afforestation list the various features that are commonly encountered and indicates which of these features are eligible as ABEs for the purpose of grant and premium calculation.

Where ABEs add up to more than 15% of the total area, the following calculation must be applied.

Payment area = Actual planted area X (100 / 85)

For example, a 10ha application adjacent to a river has a combined unplanted area of 4ha. The 4ha area comprises the setback distance from the river which is occupied by scrub, areas associated with internal hedgerows, and a 60m setback from a dwelling house. In this example, the formula is applied as follows:

Payment area = Actual planted area of 6ha X (100 / 85) = 7.06ha

In this case, the eligible claimed area is 7.06ha (and *not* 10ha). Over-declaration of area will result in the recouping of grants and premiums and can result in additional penalties being applied. It is important that ABEs on approved site are retained during afforestation works. The total area of ABEs must be calculated accurately. Applicants must not remove ABE areas prior to entry into the Afforestation Scheme or during afforestation works. If such areas are removed, the application may be refused or a penalty applied at form 2 or form 3 stages, as set out in the DAFM document Forestry Scheme Penalty Schedules 2023.

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6.3 Criteria for ABE eligibility

The mapping and recording of ABEs is described in Section 17 Mapping Standards.

Site features (including woody habitats) are included in the Environment Requirements for Afforestation

While protecting biodiversity outside of the forest area is desirable and encouraged, it is not within the scope of the Afforestation Scheme to grant aid in excess of 15% of the eligible claimed area. The following criteria apply in relation to ABE eligibility, to maximise biodiversity benefit:

- ABEs must be areas that are suitable for planting, where the potential for a commercial forest crop is foregone for the purpose of retaining habitats and open spaces for biodiversity management objectives. ABE's can include areas created to enhance biodiversity such as ponds and water attenuation areas.
- The area occupied by linear features (e.g. public road setbacks) or point features (e.g. large open-growth trees) must be accurately assessed and noted on the Biodiversity Map. There areas must be estimated and these areas must be added to the mappable ABE area, to give a total ABE area.
- ABEs must be an integral part of the proposed forest area (e.g. an ABE plot cannot be a completely separate plot away from the main area comprising the proposed forest or a distinct field on the outer boundary of the project).
- Select features that will deliver the 'best quality' ABEs within the new forest and offer the best connectivity with other biodiversity features in the local environment, while also protecting watercourses and archaeological sites through the use of aquatic setbacks and exclusion zones.
- For details of eligibility as ABEs, of different types of woody habitat, see Environmental Requirements for Afforestation Table 3.

Hedgerows must be regarded carefully when considering forestry activities and the impacts these activities may have on these important landscape features. Hedgerows, ditches and open drains are designated as Landscape Features under the Good Agricultural & Environmental Condition (GAEC) of Cross Compliance, since from 2009. Hedgerows are an important visual feature in the landscape and form part of the historical and archaeological heritage of the country.

6.4 Grant aiding ABE plots

An ABE of plot size is eligible for grant and premium payments as long as the total area of all of the ABEs across the site do not exceed 15% of the claimed area. The FT of the ABE should be that of the largest planted FT area (i.e. the FT that makes up the majority of the Forest) in the application.

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6.5 Setback / Corridor width requirements

The principle for setback distances differs between existing trees and newly planted trees.

- **Existing trees**: individual trees planted prior to submission of the application may be allowable in setback areas.
- **Planted trees:** Planting in this case refers to the planting of trees for all schemes, including the Afforestation Scheme (FTs 1-12), the Native Forest Conservation Scheme, the Woodland Improvement Scheme and the Reconstitution Scheme. In these cases, all of the setback distances specified in an approval apply.

Failure to adhere to the required setback distances set out below may result in a request for remedial works or grant aid being refused and / or penalties being applied.

6.5.1 Setback for public road

A setback strip of 10 metres for broadleaves and 20 metres for conifers, measured to the surfaced edge of the public road, applies. In conifer Forest, the strip 10 metres to 20 metres from the road may be planted with broadleaves or groups of broadleaves. Avoid planting in straight lines and create an undulating natural forest edge. This distance is an average distance from the planting line to the road edge within any one application and should vary to take account of good landscaping practices.

6.5.2 Setback for dwelling houses / associated buildings

The setback distance from dwelling houses and associated buildings is 60m, or 30m with the *written* consent of the owner.

"*Forest developers should liaise with the owners of neighbouring properties, to resolve in advance, any potential concerns.*" In particular situations where the Forestry Division considers that the proposed development would have a significant effect on a neighbouring dwelling, e.g. by creating a sense of enclosure or isolation or by blocking significant light or an important view. The Forestry Division may specify a requirement for local consultation and proof of same, at pre-approval stage. While the prescribed 60 metre 'without permission' setback will suffice in most cases, the Forestry Division may require greater setbacks or indeed, the exclusion of sections of a proposed site, if deemed necessary on landscape grounds. The Forestry Division will also give due regard to any written third-party submissions that are made where dwelling setbacks are a source of contention.

Applicants and Registered Foresters should also consider the long-term implications of managing large open areas adjoining properties and the potential fire hazards associated with scrub encroachment on certain sites. In some instances, large unplanted setback areas may be considered for exclusion from the Afforestation Scheme.

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Type of Building	Minimum Setback (measured from outer wall of building)
Dwelling Houses	60m
Dwelling House – written permission of owner to plant closer	30m
Designated buildings and structures or parts thereof which form part of the architectural heritage and which are of special interest e.g. ruinous country houses, walled gardens, follies, mine pump houses, mill buildings, or old school houses*	30m
Undesignated built heritage structures, e.g. lime kilns, sheep folds, creamery stands, stiles, pumps and pump houses, mill ponds, roofed farm buildings and derelict dwellings/farm buildings recorded on the 6 inch ordnance survey map.	10m
Temporary buildings, timber sheds, kennels and buildings less than 25 square metres.	

*In the case of both designated and undesignated built heritage structures where there are associated features such as boundary walls, mill races or historic footpaths, 5m setbacks may also be applied to those features, similarly for historic townland boundaries.

6.5.3 Rights-of-way held by parties other than the owner

This varies but is normally no more than a corridor of 5 metres wide or as set out in the folio document.

6.5.4 Major water mains (Local Authority or Group Scheme)

A corridor of 15 metres wide applies.

6.5.5 Gas pipelines

A corridor of 15metres wide applies where the gas pipeline has been installed prior to planting. A corridor of up to 30 metres wide applies where the gas line was installed after the area was planted. Forestry grants and premiums must be repaid in relation to the area deforested.

An agreement exists between the Irish Farmers Association and Bord Gáis Energy on compensation for gas pipeline way-leaves through forestry. For further information, contact Bord Gáis Energy or the Irish Farmers Association.

6.5.6 Overhead power lines

Required corridor widths for different types of overhead power lines are set out in Section 7.

6.5.7 Wind turbines

A minimum 30metre setback from the maximum horizontal extent of the turbine blades rotated around 360° must be observed in the case of new afforestation around pre-existing turbines. This setback distance may be increased on a case-by-case basis during the consultation process. Where the Forest pre-dates the installation of the wind turbines and it is proposed to remove trees from an area for the purposes of using it for wind turbines, then permission is required from the Forestry Division. Grants and premium may have to be repaid in relation to areas deforested and still under contract with the DAFM. An alternative replanting area may be required which will involve the submission of a form 1 afforestation application with the relevant environmental screening and reports as appropriate. A felling licence application will also be required for the removal of the trees adjacent to the proposed wind turbine development. Contact the felling section for guidance on these matters.

6.5.8 Setbacks for railway lines

Streams, rivers, lakes, reservoirs Setbacks as per the *Environmental Requirements for Afforestation*.

6.5.9 Points of water abstraction

The setback distance in relation to pump houses and substantial tank-type reservoirs is 30metres (i.e. as for dwelling houses and associated buildings, without the need to obtain the owner's consent). A 30metre setback also applies to wells and boreholes. Applicants and Registered Foresters must ensure that the location of any water abstraction points within the proposed area is clearly marked on the Biodiversity Map.

6.5.10 Setback from swallow holes and turloughs

Apply the aquatic buffer zone widths set out for aquatic zones in the *Environmental Requirements for Afforestation*, unless otherwise specified.

6.5.11 Hedgerows

See Environmental Requirements for Afforestation Table 3.

6.5.12 Ridelines and firebreaks

Planned ridelines normally require a 6metre wide unplanted strip. Firebreaks must comprise a 6metre wide fuel-free zone.

6.5.13 Internal roads, turning bays, etc.

These planned features normally require a 15 metre wide corridor or 5m setback from a turning area.

6.5.14 Geological features

Areas recognised for their geological importance should be taken into consideration during the layout, design and construction of forest roads. These include County Geological Sites.

Forestry Division permission is required before any trees are removed. Forestry grants and premiums may have to be repaid in relation to areas deforested.

The Forestry Division *Felling & Reforestation Standards* may also affect decisions in relation to afforestation. This policy is available at:
https://www.gov.ie/en/publication/19b8d-tree-felling-licences/

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Section 7: **Overhead Power Lines**

7.1 Overview

The content of this section has been agreed with the Electricity Supply Board (ESB) and complies with the Irish Farmers' Association (IFA) / ESB agreement of 7th September 1992. Guidance is provided on how to deal with ESB lines interacting with grant-aided forest areas and allows for each case to be examined on an individual basis. Landowners reserve the right to negotiate their own deal with the ESB. *The Department is not party to any agreement between the ESB and the landowner*. The Department will supply information regarding loss of earnings in relation to Afforestation Scheme payments but accepts no liability in respect of this information or the agreement between the ESB and the landowner.

7.2 Unplanted corridors

Where overhead power lines traverse a site proposed for planting, corridors of the dimensions set out in Table 7.1 must be left unplanted beneath the lines. Powerline corridors and their underlying areas are not eligible for grant and premia payments.

Any areas suitable for afforestation which are left unplanted due to the imposition of overhead power lines should be indicated on the afforestation application's associated Certified Species Map but not included in the area claimed for grants and premia (see Section 17 for mapping conventions). Areas not falling under a power line corridor but which, because of the corridor, cannot satisfy the afforestation scheme's required minimum area or width criteria should also be recorded on the map but not in the claimed area.

In the corridors mentioned above, trees may be grown to a height of no more than 3m above the ground. Trees exceeding 3metres within this corridor must be cut or lopped by the landowner. However, a corridor of 4metres wide must be left totally clear for ESB maintenance access.

Where corridors have been created due to the presence of a 110 kV, 220 kV or 400 kV transmission line, the ESB shall provide adequate fencing for the corridor area, where practicable. Where lesser corridors are necessitated by the presence of 10 kV, 20 kV, 38 kV or low voltage distribution lines, the ESB shall not be required to fence the corridor area except where an existing fence has been demolished to provide for the corridor or where the corridor covers an area of land which includes a boundary between the lands of adjoining farmers.

All applications affected by power lines must be mapped as described in Section 17 of this manual.

7.3 Overhead power lines and safety

During forestry operations, appropriate safety measures are required in order to prevent forest operators and machinery coming into contact with overhead power lines, with potentially lethal consequences. See the *Code of Practice for Avoiding Danger from Overhead Electricity Lines* (2008), available for downloading from the Health & Safety Authority (HSA) and ESB Networks websites (www.hsa.ie and www.esb.ie/esbnetworks).

Table 7.1 Corridor widths under power lines. Also see Figure 7.1 for a visual guide to aid in the identification of different types of ESB power lines.

Power line type	Corridor width (centered)
Low voltage (230 V / 400 V)	None (clearance from branches and treetops only)
10 kV and 38 kV	20 metres
110 kV	61 metres
220 kV	68 metres
400 kV	74 metres
Note *All trees must be outside their falling distances from line support structures.*	

7.4 Claiming compensation

Applications for compensation from the ESB for loss of forest premium can be made for areas suitable for afforestation but left unplanted as a result of the presence of an ESB line. These applications for compensation must be made before planting, to enable the ESB to exercise its option, if it so desires, of diverting the overhead line. Where grant-aided afforestation has to be removed to allow for the installation of power lines, grants and premiums already paid will be recovered from the landowner by the Forestry Division. Compensation may be claimed from the ESB in respect of the amounts repaid to the Forestry Division.

To claim compensation, the ESB will require the following:

- a completed application form entitled 'Application for Compensation for Loss of Tree Planting Rights'
- proof of grant approval letter and Ordnance Survey map,
- proof of forest premium loss (available on request from the Forestry Division), and
- agreement to grant an easement on the lands in question.

All claims for compensation should be processed initially through the ESB local or regional office. No compensation will be paid until after the site has been planted.

7.5 Compensation levels

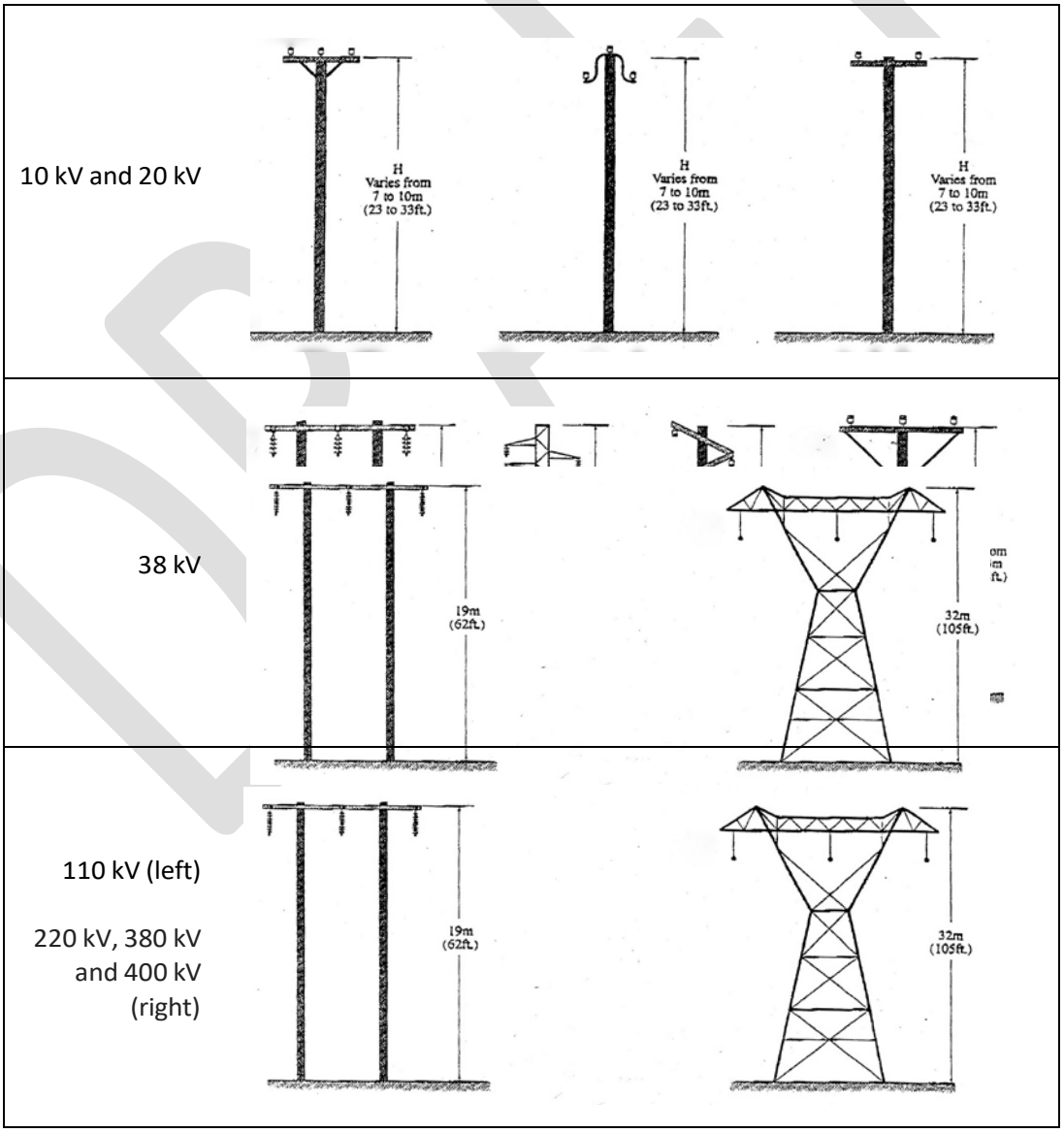
7.5.1 Percentage of land value

Where a landowner has recently purchased land for the purpose of afforestation, and where the ESB has notified the landowner that part of the land may not be planted due to the presence or the planned presence of an electricity line, the ESB shall, in the first instance, agree to pay the landowner an amount equivalent to 75% of the purchase price of the affected area where the price of the affected area is deemed to be *pro rata* to that of the remainder. The amount is payable on foot of an easement, following *bona fide* intent to proceed and

receipt of notification of afforestation grant approval.

Where the landowner proposes to plant an area which has not been recently purchased, a sum equivalent to 75% of the value of the land shall be paid by the ESB. The value of the land is that which would have prevailed had the land been recently purchased.

Figure 7.1 A visual guide to aid in the identification of different ESB power line types. *Note, this is an indicative guide only and does not purport to be an accurate indication of the voltage within a specific line.* When working in the vicinity of power lines, operators must consult with ESB Networks and the *Code of Practice for Avoiding Danger from Overhead Electricity Lines* (2008).
Also see identifying information panel (if present) on the supporting pole / structure, and the relevant layer on iNET. If in any doubt regarding the type of a particular power line on a site, consult with ESB directly.



7.5.2 Compensation for loss of premium

In addition to this, premium based compensation is also payable by the ESB to the landowner. Methods of calculation are based on a standard annuity table (see Appendix 19), taking into account the premium rate, the number of years and the interest rate. Payment is capitalised as a once-off payment.

7.5.3 Proof of loss of forest premium

The Department's iFORIS system will generate a 'Proof of Forest Premium Loss' letter, based on standard ESB line buffers and boundaries, as digitised. In limited circumstances, where it is not possible to generate such a letter, the Forestry Division will confirm the premium and the grant rates per hectare, and the Registered Forester, the applicant and the ESB can manually calculate the indicative loss of income.

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Section 8: **Species, Provenance and Plant Health Requirements**

8.1 Species selection

The health of a forest, its adaptability and consequently its productivity all stem from correctly matching species with the site. There are a range of additional environmental, cultural and social considerations to consider in forest planning, however, a core tenant of best forest practice and a prerequisite to grant aid, is that the site must be able to support the species selected and provide conditions for vigorous growth. In order to meet these requirements, it is necessary to carry out an assessment of site's characteristics e.g., soil, exposure and other factors that influence species suitability. Yield class is a measure of the average rate of growth of a forests if it was to grow over a rotation length to maximum mean annual increment measured in cubic metres of wood per hectare per year (m^3 / ha / yr), assuming the forest will be grown on to the age of maximum mean annual increment. In certain areas there are a myriad of other biotic and abiotic factors that also affect productivity for example, the presence of high deer and grey squirrel populations or the presence of frost pockets or salt spray. These factors also serve to limit species choice.

Tables 8.1 and 8.2 are extracts from the COFORD publication *A Guide to Forest Tree Species Selection and Silviculture in Ireland*[1]. This publication is available from the Forestry Division and serves as a useful reference (this publication is not intended to accurately reflect official forest policy in the DAFM.) for foresters involved in species selection and forest management. *The tables are not intended as a 'quick fix' and should not be read in isolation. When read in conjunction with other chapters in the above guide, they provide a sound basis for species selection*.

Using colour-coding, Table 8.1 illustrates the suitability of individual species and some coniferous mixtures from 'optimal' to 'unsuitable for the given spectrum of soil types. Obviously certain species can be disregarded immediately as not being suitable for a particular soil types. The species which are deemed more suitable can be subsequently evaluated, based on additional information (susceptibility to frost, exposure, etc.) from Table 8.2.

Regarding the reforestation of podzols and peaty podzolized gleys, the range of suitable species may be expanded due to the ameliorative effect on soil fertility and structure from the previous crop. In addition, it should be noted from Table 8.1 that some species might grow too rapidly on certain fertile sites, leading to coarse growth, poor form or instability. The suggested combinations of site and species where this may occur are marked in the table by an '8.1'.

Where free calcium carbonate is present in the topsoil, most species will suffer from lime induced chlorosis Soils most at risk from this phenomenon are soils A, C, P and Q.

[1] Horgan, T., Keane, M., McCarthy, R., Lally, M. & Thompson, D. 2003. A Guide to Forest Tree Species Selection and Silviculture in Ireland. Ed. O'Carroll, J. COFORD, Dublin.

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Table 8.1 Species and soil type.
From *A Guide to Forest Tree Species Selection & Silviculture in Ireland* (Horgan *et al.*, 2003)

		Soil type (see key on following page)																
Species		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Alder	Common																	
	Grey *																	
	Italian *																	
Ash	Common																	
Beech	European																	
	Southern																	
Birch	Downy																	
	Silver																	
Cherry	Wild																	
Chestnut	Spanish																	
Hornbeam	Common *																	
Lime	Common																	
Maple	Norway																	
Oak	Pedunculate																	
	Red																	
	Sessile																	
Rowan *																		
Sycamore																		
Cedar	Western Red	X																
Cypress	Lawson																	
	Monterey																	
Fir	Douglas	X																
	Grand																	
Hemlock	Western	X																
Larch	European	**X**																
	Hybrid *	**X**																
	Japanese *	**X**	X															
Pine	Austrian	**X**	**X**		X													
	Corsican																	
	Lodgepole (NC)																	
	Lodgepole (SC)	X	X	**X**	**X**	**X**					**X**	**X**		X				
	Macedonian																	
	Monterey	X																
	Scots	**X**																
Redwood	Coast																	

Spruce	Norway																		
	Serbian																		
	Sitka																		
Mixture	SS / DF	X																	
	SS / JL	X	X																
	SS / HL	X																	
	SS / LP (NC)																		
	SS / LP (SC)																		

Optimal						Unsuitable

** Tree species not currently on the Forestry Division list of approved species. These species may be considered in certain circumstances after consultation with the Forestry Division .*

' X ' denotes species predisposed to coarse growth, poor form, instability or butt rot by the excessively favourable growing conditions and / or the high pH provided by the soils in question.

Key to soil types			
A	Alkaline brown earths and free--- draining, deep grey brown podzolics	J	Gleys / peaty gleys (mottled profile) and gleyed grey brown podzolics (Fertility Class A or B)
B	Acid brown earths and brown podzolics	K	Gleys/peaty gleys (blue / grey or yellow profile) (Fertility Class B)
C	Rendzinas / shallow brown earths / shallow grey brown podzolics	L	Gleys / peaty gleys (Fertility Class C)
D	Podzols / peaty podzols +/--- weakly--- developed iron pan	M	Flushed and / or reclaimed blanket peat
E	Indurated ironpan podzols (organic layer or furze present)	N	Unflushed blanket peats and intact raised bogs
F	Indurated ironpan podzols (scrawed, with heather)	O	Cutaway blanket bogs (milled peat)
G	Peaty podzolised gleys (Fertility Class C) – organic layer present	P	Cutaway raised bogs (milled peat) post--- 1980 and fen peats
H	Peaty podzolised gleys (Fertility Class C) – scrawed	Q	Cutaway raised bogs (hand or machine, sod) pre---1980
I	Lithosols		

On reforestation sites, particularly in the case of soils D, E, F, G and H, the ameliorative effect of the previous/pioneer crop on soil fertility and structure may result in the inclusion of a wider range of species for selection than heretofore deemed suitable from the table. This may also apply for afforestation where these soils have been reclaimed or modified for agricultural purposes.

Any intended development outside these specifications should be referred to the Forestry Division.

Table 8.2 is intended to aid in maximising a site's potential by indicating the most suitable trees to be planted for a range of site types.

Characteristic A (ease of establishment) includes a number of factors in the first five years following the initial planting operation. These factors include survival rates, ability to compete with vegetation, growth rate and juvenile instability.

Conifer species are generally suited to acid to neutral soils with a pH of 4.5 to 7 (assuming the soil is free draining with non-fluctuating ground water tables, especially at higher pH levels).

Broadleaf species are generally suited to mineral slightly acid to moderate alkaline soils with a pH of 4.5 to 8. In general, broadleaves should not be planted over 185metres elevation in the east and 120 metres in the west of Ireland, depending upon soil, aspect, topography and drainage.

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Table 8.2 Species silvicultural characteristics.
From *A Guide to Forest Tree Species Selection & Silviculture in Ireland* (Horgan *et al.*, 2003).

	Characteristics								
Species	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Common alder	1	1	3	4	5	4	5	1	1
Grey alder	1	2	3	4	4	4	4	2	1
Italian alder	3	4	4	3	3	4	5	2	1
Ash	2	5	4	3	4	5	5	3	
Common beech	2	4	3	4	3	4	1	1	1
Southern beech	3	4	4	4	3	3	4	3	
Downy birch	3	1	3	4	4	3	3	4	1
Silver birch	3	2	4	4	2	4	5	4	1
Wild cherry	2	4	5	4	3	5	5	5	
Spanish chestnut	2	5	5	5	3	4	4	1	1
Hornbeam	2	1	4	4	2 --- 4	3	1	1	1
Lime	2	3	4	4	3	4	3	2	1
Norway maple	2	2	4	2	3	4	4	2	
Pedunculate oak	2	4	5	3	4	5	5	1	
Red oak	2	3	4	3	3	3	4	1	1
Sessile oak	2	5	5	3	3	4	4	1	
Rowan	1	1	3	2	3	4	5	2	1
Sycamore	2	2	2	2	3	5	4	1	
Western red cedar	3	2	4	3	4	4	2	3	1
Lawson cypress	3	2	3	3	4	3	1	4	
Monterey cypress	4	3	1	1	3	3	4	3	
Douglas fir	3	3	5	5	2	3	4	2	1
Grand fir	2	2	5	4	4	5	2	2	1
Western hemlock	3	4	4	3	3	3	1	3	
European larch	3	4	4	5	3	4	5	2	1
Hybrid larch	2	3	3	2	4	3	5	2	1
Japanese larch	2	3	3	2	4	3	5	2	1
Austrian pine	3	2	3	2	2	3	3	3	
Corsican pine	3	2	3	5	2	4	5	2	1
Lodgepole pine	3	1	2	1	1 --- 4	1 --- 3	5	1	1
Macedonian pine	4	1	1	3	3	3	4	1	1
Monterey pine	4	2	4	1	2	3	5	1	1
Scots pine	2	1	4	3	2	3	5	1	1
Coast Redwood	2	5	5	2	3	5	3	3	
Norway spruce	4	3	5	5	4	4	3	4	
Serbian spruce	3	2	2	3	2 --- 4	2 --- 4	3	3	
Sitka Spruce	1	4	2	2	2 - -4	3 - 5	5	3	

A	**Establishment**	1 Easy	⇨	5 Very difficult
B	**Spring frost**	1 Tolerant	⇨	5 Very intolerant
C	**Exposure**	1 Tolerant	⇨	5 Very intolerant
D	**Salt spray**	1 Tolerant	⇨	5 Very intolerant
E	**Soil moisture**	1 Low	⇨	5 Very high
F	**Soil nutrient**	1 Low	⇨	5 Very high
G	**Shade / Light**	1 Shade bearer	⇨	5 Light demander
H	**Rooting depth**	1 Deep	⇨	5 Very shallow
I	**Soil improver**	1 Yes	⇨	5

Tables 8.3 and 8.4 list acceptable conifer and broadleaf species for grant aid in plots. Other species may be considered in certain circumstances, subject to prior approval by the Forestry Division.

All sites must have at least 20% broadleaves, as per Forest Rule 1. When broadleaf trees are planted in groups and not of plot size they are described as "Additional Broadleaves (ADB)" for recording purposes. ADB can consist of broadleaves outlined in Table 8.4 or can also include additional native species such as rowan and willow, which are beneficial for a variety of environmental enhancing reasons. Where possible, home collected seed or plants from an Irish seed source should be used. These can be established either within the Forest or, where appropriate, at forest edges.

Table 8.3 Acceptable conifer species (with abbreviations).

Conifer species	Botanic name	Abbreviation
Monterey cypress	*Cupressus macrocarpa*	MC
Western hemlock	*Tsuga heterophylla*	WH
European larch	*Larix decidua*	EL
Douglas fir	*Pseudotsuga menziesii*	DF
Grand fir	*Abies grandis*	GF
Corsican pine	*Pinus nigra* (var. *laricio*)	CP
Lodgepole pine	*Pinus contorta* (North Coastal)	LPNC
Lodgepole pine	*Pinus contorta* (South Coastal)	LPSC
Monterey pine	*Pinus radiata*	MP
Scots pine	*Pinus sylvestris*	SP
Norway spruce	*Picea abies*	NS
Serbian spruce	*Picea omorika*	SES
Sitka spruce	*Picea sitchensis*	SS
Western red cedar	*Thuja plicata*	WRC
Coast redwood	*Sequoia sempervirens*	CR
Giant redwood	*Sequoiadendron giganteum*	GR
Japanese cedar	*Cryptomeria japonica*	JC

Table 8.4 Acceptable broadleaf species (with abbreviations).

Broadleaf species	Botanic name	Abbreviation
Common alder	*Alnus glutinosa*	ALD
Italian alder	*Alnus cordata*	ALDC
Beech	*Fagus sylvatica*	BE
Southern beech	*Nothofagus procera / N. obliqua*	SBE
Cherry	*Prunus avium*	CH
Spanish (Sweet) Chestnut	*Castanea sativa*	SC
Lime	*Tilia cordata / T. platyphllos*	LIM
Norway maple	*Acer platanoides*	NM
Sycamore	*Acer pseudoplatanus*	SYC
Pedunculate oak	*Quercus robur*	PO
Sessile oak	*Quercus petraea*	SO
Red oak	*Quercus rubra*	RO
Downy birch (Registered as 'Qualified' only)	*Betula pubescens*	BI
Silver birch (Registered as 'Qualified' only)	*Betula pendula*	BIS

8.2 Soil and water analysis

8.2.1 Soil

Each site being assessed for suitability ass outlined in the Land Types for Afforestation document 2023 and must, amongst other things, undergo a preliminary soil investigation by a Registered Forester. There must be sufficient depth of topsoil on sites to facilitate root development and vigorous tree growth. Using a soil stick foresters must check every site for the presence of shell marl and high lime soils. In areas where the soil reacts or where there is a pronounced effervescence with dilute (10%) hydrochloric acid (HCl) occurring within 70 cm of the surface, a detailed soil sampling and chemical analysis must be carried out. In certain sites if the effervescence is very pronounced it can quickly become obvious that the site or part thereof may have limited or no development potential and should not be proposed for afforestation.

Appendix 14 sets out the required soil sampling procedures and details of the information to be submitted to the Forestry Division.

8.2.2 Water

For assessing the sensitivity of surface water to acidification, refer to Appendix 11. Afforestation applications in acid sensitive areas consisting solely of Native Woodland FTs (i.e. FT1, FT2, FT3, FT4, FT5 and FT8) do not require the submission of water sample analyses as required by the Acid Sensitivity protocol. Water samples are required for all remaining FTs.

8.3 Accepted seed origins / provenances

Accepted seed origins / provenances for planting material for conifer and broadleaf species are listed in Tables 8.5 and 8.6. *Where possible, home collected reproductive material from registered Irish seed stands should be used and applicants are encouraged to ask first for plants from Irish sources*. Only the origins/provenances in Tables 8.5 and 8.6 will be approved for grant aid. Applicants must check with and seek written approval from the Forestry Division before purchasing plants with origins / provenances other than those listed in Tables 8.5 and 8.6 and registered material in the category 'Source Identified'.

Table 8.5 Accepted seed origins / provenances for conifer species.

Species and origin / provenance	Category of basic material			
	Source Identified	*Selected*	*Qualified*	*Tested*
Sitka spruce ***Picea sitchensis***				
Irish, British, Danish (Queen Charlotte Islands (QCI) origins).	✗	✗[i]	✓	✓
Irish, British (of Washington and Oregon origins).	✗	✓	✓	✓
Danish (of Washington and Oregon origins).	✗	✗	✓	✓
Seed imports under EU equivalence scheme from Washington, Oregon and QCI origins.	✗	✓	✓	✓
[i]Irish and British Selected Stands derived from material from Seed Orchards may be used.				
Norway spruce ***Picea abies***				
Irish, British, low elevations of Denmark and Germany (north of Frankfurt).	✗	✓	✓	✓
Serbian spruce ***Picea omorika***				
Irish, British.	✗	✓	✓	✓
Seed imports from Serbia.	✗	✓	✓	✓
Lodgepole pine ***Pinus contorta***				
Irish, British.	✗	✓	✓	✓
Scots pine ***Pinus sylvestris***				
First choice: Irish, Scottish.	✗	✓	✓	✓
France (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✗	✓	✓	✓

Species and origin / provenance	Category of basic material			
	Source Identified	***Selected***	***Qualified***	***Tested***
Corsican pine ***Pinus nigra (var. maritima)***				
Irish, British & Corsican	✗	✓	✓	✓
Monterey pine ***Pinus radiata***				
Healthy, non-yellowing Irish/British grown material.	✗	✓	✓	✓
Stands derived from material from Guadalupe Island (Mexico).	✗	✓	✓	✓
Suitable seed imports from Guadalupe Island (Mexico).				
Douglas fir ***Pseudotsuga menziesii***				
Irish, British.	✗	✓	✓	✓
French, Danish originating from Darrington or Humptulips, Washington.	✗	✗	✓	✓
Seed imports under equivalence scheme from coast range mountains Washington and Oregon.	✗	✓	✓	✓
Grand fir ***Abies grandis***				
Irish, British.	✗	✓	✓	✓
Seed imports under equivalence scheme from Olympic peninsula, Puget Sound (Washington), Washington and Oregon coast range mountains and Vancouver Island.	✗	✓	✓	✓
Western hemlock ***Tsuga heterophylla***				
Irish, British.	✗	✓	✓	✓
Seed imports from Puget Sound region of Washington state and the coast range mountains of Washington and Oregon.	✗	✓	✓	✓
Western red cedar ***Thuja plicata***				
Irish, British.	✗	✓	✓	✓

Species and origin / provenance	Category of basic material			
	Source Identified	*Selected*	*Qualified*	*Tested*
Seed imports from Vancouver Island (British Columbia) and coastal Washington and Oregon.	✗	✓	✓	✓
European larch ***Larix decidua***				
Irish, British, German (Schlitz), low elevation Austrian (Wienerwald), Southern Poland, Czech Republic. (Sudetan Mountains) and Slovakia (Tatra Mountains).	✗	✓	✓	✓
Monterey cypress ***Cupressus macrocarpa***				
Irish, British	✓	✓	✓	✓
Seed imports from coastal southern Oregon and northern California.	✓	✓	✓	✓
Coast redwood ***Sequoia sempervirens***				
Irish, British	✓	✓	✓	✓
Seed imports from coastal southern Oregon and northern California.	✓	✓	✓	✓
Giant redwood ***Sequoiadendron giganteum***				
Irish, British	✓	✓	✓	✓
Seed imports from native range in Sierra Nevada mountains, California.	✓	✓	✓	✓
Japanese cedar ***Cryptomeria japonica***				
Irish, British	✗	✓	✓	✓
Suitable seed imports from northern Japan				

Table 8.6 Accepted seed origins/provenances for broadleaf species.

Species and Origin / provenance	Category of basic material			
	Source Identified	*Selected*	*Qualified*	*Tested*
Pedunculate oak ***Quercus robur***				
First choice: Native Irish	✗	✓	✓	✓
British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✗	✓	✓	✓
Sessile oak ***Quercus petraea***				
First choice: Native Irish	✗	✓	✓	✓
British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✗	✓	✓	✓
Red oak ***Quercus rubra***				
Irish, British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✗	✓	✓	✓
Beech ***Fagus sylvatica***				
Irish, British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✗	✓	✓	✓
Sycamore ***Acer pseudoplatanus***				
First Choice: Irish	✓	✓	✓	✓
Irish, British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✓	✓	✓	✓
Norway maple ***Acer platanoides***				
First choice: Irish	✓	✓	✓	✓
Irish, British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✓	✓	✓	✓

Species and Origin / provenance	Category of basic material			
	Source Identified	*Selected*	*Qualified*	*Tested*
Common alder ***Alnus glutinosa***				
First choice: Native Irish.	✗	✓	✓	✓
British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✗	✓	✓	✓
Italian Alder*Alnus cordata*				
Irish, British.	✓	✓	✓	✓
Native range in southern Italy and Corsica.	✓	✓	✓	✓
Cherry ***Prunus avium***				
First Choice: Native Irish.	✓	✓	✓	✓
British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt). Not seeds resulting from fruit processing.	✓	✓	✓	✓
Lime ***Tilia cordata***				
Irish, British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt).	✓	✓	✓	✓
Spanish (Sweet) chestnut ***Castanea sativa***				
First choice: Irish.	✗	✓	✓	✓
Britain, France. Not nuts collected for consumption.	✗	✓	✓	✓
Birch ***Betula pubescens /B. pendula as component of Forest Type (FT)***				
Irish	✗	✓	✓	✓
Birch** ***Betula pubescens /B. pendula as a component of ADB				
First choice: Native Irish	✓	✓	✓	✓
British	✓	✓	✓	✓
Rowan (*Sorbus aucuparia*)	First choice: Irish native material. Otherwise, British material.			
Hazel (*Corylus avellana*)	First choice: Irish native material. Otherwise, British material.			
Hawthorn (*Crataegus monogyna*)	First choice: Irish native material. Otherwise, British material.			

Blackthorn (*Prunus spinosa*)	First choice: Irish native material. Otherwise, British material.
Holly (*Ilex aquifolium*)	First choice: Irish native material. Otherwise, British material.
Spindle (*Euonymus europaeus*)	First choice: Irish native material. Otherwise, British material.
Crab apple (*Malus sylvestris*)	First choice: Irish native material. Otherwise, British material.
Guelder rose (*Viburnum opulus*)	First choice: Irish native material. Otherwise, British material.
Yew (*Taxus baccata*).	First choice: Irish native material. Otherwise, British material.
Elm (*Ulmus glabra*)	Irish native material.
Strawberry tree (Arbutus unedo).	Irish native material.

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On the 1st January 2003, the EU Directives 66/404/EEC and 71/161/EEC on forest reproductive material were repealed and replaced by a new single EU Directive, Council Directive 1999/105/ EC on the marketing of forest reproductive material.

Forest reproductive material (FRM) is a collective term used to describe seeds, plants and other propagating material which are important for forestry purposes. The marketing Directive updates the legislation to take account of the accession of new Member States since 1975, the Internal Market and scientific advances including the availability of new material. It is also compatible, as far as possible, with the revision of the current OECD scheme for the control of FRM moving in international trade. In Ireland, the Forestry Division, Department of Agriculture, Food and the Marine, is the national authority with responsibility for the implementation of the Directive. The Directive is transposed into Irish legislation by the European Communities (Marketing of Forest Reproductive Material) Regulations 2002.

The Directive applies to the production with a view to marketing and to the marketing of species which are important for a range of forestry purposes including, but not exclusively for the production of wood. The Directive covers a much wider range of species which are important for forestry in Ireland including, ash, alder, birch, sycamore, cherry and lodgepole pine. Significantly, a new category of material 'Source Identified' is included. This is FRM derived from basic material which may be either a seed source or stand located within a single region of provenance. This will allow collection and marketing of seed from outside of 'Selected' registered sources subject to official control and labelling.

A key principle of the Directive is that FRM remains clearly identifiable through the entire process from collection to delivery to the end user. Under the Directive there is a legal requirement for suppliers of FRM throughout the EU to be officially registered. All seed collectors, seed suppliers, nurseries, plant suppliers/brokers etc. must be registered with the Forestry Division. All seed collections must be notified in advance following which a Master Certificate of Provenance will be issued. Seed and plants should only be purchased from registered suppliers and material must be accompanied by an approved Supplier's Document. These rules provide traceability and assurance to the end user regarding the origin and suitability of the planting stock. Details of the provenance/origin of planted material also provides an essential forest management record.

It is recommended that foresters and applicants refer to the legislation (Council Directive 1999/105/ EC on the marketing of forest reproductive material) to familiarize oneself with the various technical definitions (e.g. Basic Material, Qualified, Source Identified etc.).

For the purpose of the Forestry Division grant schemes, all planted material must be covered by a Supplier's Document in the format of a Provenance Declaration Form.

A **Provenance Declaration Form** – Supplier's Document (see Appendix 15) must be completed for all the species listed in Tables 8.5 and 8.6. Only the origins / provenances listed in these tables are acceptable.

Part A of the Provenance Declaration Form is completed by the Nursery/Supplier supplying the plants. The Nursery / Supplier must declare that the origin/provenance complies with the accepted list of Origins / Provenances (Tables 8.5 and 8.6).

Part A of the Provenance Declaration Form and the associated plants should only be accepted from a supplying nursery/plant broker if the form is *fully* completed, including, where applicable, the full Plant Passport plant health details. Where the Provenance Declaration Form accompanying the plants is a copy, the original must be forwarded by the nursery/plant

broker as soon as possible.

Part A of the Provenance Declaration Form can only be completed by nurseries or plant brokers registered in Ireland. If importing plants from outside Ireland, the nursery or plant supplier in Ireland is required to be officially registered with the Forestry Division under the EU Forest Reproductive Material Regulations and for regulated species under the EU Plant Health Regulations. In these cases of imported FRM Part A is completed by the importer.

Part B of the form is completed by the contractor or applicant applying for the grant. In all cases, the contractor or applicant must submit the original signed Part B. The contractor or applicant must declare that the original provenance details are correct. The following applies:

- Tick '*Part A is an Original*' when the original non-photocopied Part A is submitted.
- Tick '*Part A is a photocopy*' when a photocopy of Part A is submitted. Photocopies of part A are used if the above trees only account for a portion of the trees delivered and planted, the remainder being used in other sites under the same Supplier's Document Number The original non-photocopied Part A must be available for inspection.
- Tick '*This Provenance Declaration Form accounts for: **All** of the trees planted of the above species on this contract*' where the delivery described in Part A covers all trees. In other words, all of the trees delivered and planted of that species listed above were used s in relation to this specific grant application.
- Tick '*This Provenance Declaration Form accounts for: **Part** of the quantity planted of the above species on this contract*' where Part A does not cover all the trees planted. In other words, other deliveries of plants of that species have been planted in relation to this specific grant application, potentially with different Master Certificates of Provenance, seed origins/provenances, different suppliers etc. Additional Provenance Declaration Forms(s), Part B, must be completed to cover all of the plants actually planted. The number of trees planted and the applicable Plot Numbers(s) must be indicated in each case.

8.4 EU Plant Health Regulations

Irish forests are recognised under the EU Plant Health Directive as being among the healthiest in Europe, with relatively few serious forest pests or diseases. This is mainly due to Ireland's island status, the relative newness of the forest estate, and the enforcement of forest plant health regulations.

The increasing movement between countries of forest plants and wood products (e.g. logs, sawn timber, wooden pallets, crates and ships' dunnage) increases the risk of potentially very damaging forest pests and diseases spreading to Ireland.

The policy of the Forestry Division in this area is to maintain a healthy forest environment by ensuring good management, identifying risks and maintaining a sustained commitment to measures which prevent the entry and establishment of destructive forest pests and diseases.

Under the EU Plant Health Directive, strict regulatory controls are in place to prevent the entry of exotic insect pests and diseases which could seriously damage our forests. These relate to the movement of forest plants and wood products into Ireland both from within the EU and from non-EU countries.

The Forestry Division carries out ongoing surveys of the national forest estate for quarantine forest pests and diseases. Early detection of a newly introduced pests and diseases are

essential. Forest owners and the forest industry are encouraged to be ever vigilant in detecting such introductions. *If any **unusual** pest or disease is observed please immediately contact your local Forestry Inspector.*

8.4.1 Plants originating in Ireland and other EU Countries

In the context of the Internal Market, Ireland has been granted a special Protected Zone State regarding 13 harmful forest pests and diseases. A Protected Zone is essentially an area in the EU where an organism of quarantine significance, established in other parts of the EU, is not present on this island despite favorable conditions for it to establish here.

Plants of the genera listed in Table 8.7 should only be purchased from nurseries registered under the EU Plant Health Directive and the plants must be accompanied by a valid EU Plant Passport to certify the plant product's freedom from specific pests and diseases. These plants require a special Protected Zone Plant Passport valid for the island of Ireland. This is normally issued using the codes indicated in Table 8.7. These details are found on the delivery note and/or accompanying label issued by the registered nursery and also on the Provenance Declaration Form. The following is an example of a valid Plant Passport for sessile oak (*Quercus petraea*). 'DAFM' is an abbreviation for the statutory authority for plant health (Department of Agriculture, Food & the Marine), 1234 is a unique registration number for the producer. ZP A16 is the code use to indicate that the plants are free of Oak Processionary Moth and are free to move into or within Ireland. The quantity of plants and a unique batch number must also be supplied. See format example below:

EU Plant Passport IRL/DAFM/1234.

Quercus petraea ZP A16

Table 8.7 Forest plants requiring EU plant passports.

Conifers	Protected Zone Code
Abies	ZP Conf.
Larix	ZP Conf.
Picea	ZP Conf.
Pinus	ZP Conf.
Pseudotsuga	ZP Conf.

Broadleaves	Protected Zone Code
Quercus	ZP A16
Castanea	ZP A4.1 C02
Sorbus	ZP B2
Populus	ZP C3
Crataegus	ZP B2
Malus	ZP B2

8.4.2 Plants originating in non-EU countries

Plant imports from many non-EU countries are prohibited. Where imports are allowed from non-EU countries they must be accompanied by a Phytosanitary Certificate and importers must be formally registered with the Department of Agriculture, Food and the Marine. The plants must also comply with the forest reproductive material regulations described in section

8.4 of this document.

8.5 Conifer mixtures

All applications approved under the afforestation schemes must consist either of pure blocks or of silviculturally acceptable mixtures. Mixtures are often used to enhance the visual impact, productivity and resilience of a new forest.

Table 8.8 shows the species which can be considered in mixture. Where alternative mixtures are proposed the Forestry Division must be consulted for approval.

Table 8.8 Compatibility of conifer intimate and line mixtures.

	SS	LP	DF	NS	SP	HL	JL	EL	WH	WRC
Sitka spruce		Y	Y			Y	Y		Y	Y
Lodgepole pine	Y									
Douglas fir (DF)	Y					Y	Y	Y	Y	Y
Norway spruce (NS)					Y			Y		
Scots pine (SP)				Y				Y		
Japanese larch *	Y		Y							
Hybrid larch	Y		Y							
European larch (EL)			Y	Y	Y					
Western hemlock (WH)	Y		Y							
Western red cedar (WRC)	Y		Y							

' Y ' indicates compatibility on certain sites. Otherwise not compatible.

** JL is not currently on the approved list of species.*

8.7 Broadleaf and conifer mixtures

The COFORD publication: *A Guide to Forest Tree Species Selection and Silviculture in Ireland* outlines a number of different mixture patterns between broadleaves and when grown with conifers to be considered on suitable sites. Mixtures require careful site selection and management to ensure that the desired final crop establishes successfully. The Forestry Division will examine alternative mixtures on application prior to approval.

Section 9: **Drainage and Cultivation**

9.1 General drainage objectives

Drainage has a direct bearing on both the economic potential and the degree of environmental compatibility of the forest throughout its rotation. All drainage and cultivation must be in accordance with the Land Types for Afforestation and Environmental Requirement for Afforestation documents.

While a well thought out and implemented drainage plan can improve tree growth, inappropriate drainage or water management can negatively affect crop performance, water quality and the wider environment for the lifetime of the crop. A drainage plan should be developed with the consideration of soil characteristics, topography, planned cultivation, existing drainage on site and all other relevant information.

Conifers must have a free-draining rooting depth of *at least* 45 cm throughout the year. This is measured from the top of the topsoil to the top of the water table or subsoil (it is not measured from the top of the planting mound). Broadleaf species generally require greater depths, however intermittent flooding is acceptable if the site is free draining between flooding episodes.

Drainage must be designed to allow site access and in conjunction with the future forest roading in mind. Similarly, it is important not to impair future harvesting efficiency by creating obstacles. Traditional drainage routes must be respected and should not be altered. Drainage should not be installed so as to cause or threaten environmental damage.

The Ordinance Survey 6 inch map series (1:10,560) can provide a source of information on low-lying areas which were liable to flooding historically. These areas must be silviculturally and environmentally capable of establishing a crop to full rotation, if submitted for approval. The website www.floodinfo.ie can also provide useful information on existing flood history in certain catchments. Local Authorities also have maps available indicating areas that are prone to greater or lesser flood risk.

Note that extreme care is required when designing a drainage system and sediment control measures on steeper slopes with erodible soils. This is mainly due to the potential for increased water velocity and the heightened risk of erosion and runoff, and subsequent sedimentation of receiving watercourses. Old land drains that may become reactivated and other possible pathways need to be considered also. Of particular concern is the capacity of the drainage network to withstand high rainfall events, without failure. Table 9.1 sets out a risk scoring system to indicate the risk of soil erosion, based on soil type and slope.

An inappropriately designed drainage system poses a considerable threat to watercourses, not only at afforestation stage, but also latter on, at the roading, thinning and clearfell / reforestation stages.

The most appropriate soil cultivation technique for a site aims to alter the growing conditions and drainage for successful tree growth while minimizing soil disturbance and addressing the risks of carbon, sediment, and nutrient loss into the wider environment. If multiple cultivation techniques are suitable for a site, the techniques with the least negative potential impacts should be used.

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The cultivation technique selected for a site can only be selected following a detailed walkover soil survey by a Registered Forester. In the application for afforestation registered Foresters will submit a Biodiversity Map, which will include details pertaining to the appropriate drainage and cultivation proposals.

Mounding may be considered acceptable where existing mitigation measures are incorporated within the approved forest's design. All new drains installed as part of the afforestation project must terminate outside the water setback buffer and cannot be connected to relevant watercourses (e.g., existing drains) or aquatic zones (i.e. streams, rivers, lakes). Drains must run only for 30-40metres, before tapering out for at least 5 metres before starting again. This method of inserting drain breaks interrupts the connectivity along drainage channels to slow the flow of water.

The use deep ploughing as a cultivation method is not permissible. Drainage of Scenario 2 peat soils is not allowed as detailed in the Land Types for Afforestation document.

It is essential to 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.

9.1.1 Setbacks and exclusion zones

Required water setbacks and exclusion zones must be considered when designing a forest. Environmental setback distances are presented in the *Environmental Requirements for Afforestation document*. An effective setback is an area where forest operations are curtailed and the area is managed for environmental protection and enhancement. The development of natural vegetation within setbacks, especially along waterways is and one of the most effective means of water protection along with additional pit planting of suitable riparian tree species.

Table 9.1 Risk rating for soil erodibility, based on soil type and slope ('L' = low risk; 'M' = medium risk; 'H' = high risk).

	Slope categories					
Soil type	**< 3° 1-in-20**	**3°--- 6° 1-in-20 to 1-in-10**	**6° --- 8° 1-in-10 to 1-in-7**	**8°--- 17° 1-in-7 to 1-in-3**	**17° --- 30° 1-in-3 to 1-in-2**	**> 30° > 1-in-2**
Least erodible, e.g. gleys	L	L	L	L	M	H
Erodible, e.g. brown earths	L	L	M	H	H	H
Very erodible, e.g. podzols, some peats	M	H	H	H	H	H

A sufficient and functional setback will allow water to drain away slowly and provides an effective barrier to sediment release from the site, a well manage water setback also provides the important function of limiting the eroding potential of the watercourse.

'Flat' difficult-to-drain areas. All new drains installed on site must terminate outside of the water setback, allowing for the filtration of run off over a vegetated area. A functional water setback is designed to filter the water of sediment and decreases nutrient exports, if any, from the site. There should be no erosion risk on these flat sites or, if there is, sediment control measures must negate the risk. Conditions relating to additional silt control measures may be included by the Forestry Division at approval stage.

In any circumstance, if the applicant and the Registered Forester deem that a site cannot be sufficiently drained to establish a forest and to grow it to full rotation, the application process must not proceed.

On some sites it may be feasible and desirable to close drains either fully or partially after successful drainage and crop establishment. Where the Forestry & Freshwater Pearl Mussel Requirements apply, a 25 metre uncultivated aquatic buffer zone is required. This zone must also include, site permitting, five lines of native broadleaves.

9.1.2 Drainage survey

A drainage survey should be carried out in flat areas or where there are doubts about the drainability of a site. The drainage survey should be submitted at Form 1 stage. This survey must be carried out by a qualified surveyor or engineer at the appropriate time of the year (generally during the winter months) to take account of raised water tables. The drainage survey should include:

- A Certified Species Map at a scale of 1:5,000 indicating the date of the survey and clearly showing surface levels throughout the site relative to outfall water levels. Design calculations and details, including longitudinal sections where necessary, are also required.
- A declaration by the surveyor or engineer that drainage of the site will achieve a water table that is continuously 45-60 cm below the current surface of the soil and will satisfy the following formula:

$$E = (L / 300) + K$$

where:

'L' is the distance from a proposed planting area (Point A) to an outfall (Point B) (L should relate to the area where drainability is in question, and should not include easily drained areas on higher slopes / dry areas),

'K' is the minimum continuous water table depth to be achieved (45 cm), and

'E' is the minimum allowable elevation difference between the surface at Point A and the outfall at Point B.

(For example, if 'L' is 200metres and 'K' is 60 cm (or 0.6 m), 'E' (the elevation of A minus B) therefore needs to be a minimum of 1.26 metres.)

- A declaration from the applicant that the site, to the best of the applicant's knowledge, is not prone to flooding.
- The Biodiversity Map must include drainage and cultivation proposals and should address the following, where applicable:

- cultivation type and direction,
- appropriate aquatic buffer zones and archaeological exclusion zones,
- the number, type and location of sediment traps - ensure that these are on the more level part of the topography,
- the location of any crossings of aquatic zones, and
- the location and direction of collector drains and existing drains.

See Section 17 for details on the preparation of the Biodiversity Map which is where details pertaining to drainage of sites are presented.

- Drain types (also see Figure 9.1) Mound Drains: Length and depth will depend on site characteristics, mound drains must not exceed 40 metres in length. On steeper sites mound drains should reduce in length and include sufficient sediment traps to reduced flow velocity. Mound drains should be sufficiently spaced to ensure that the run-off does not exceed the carrying capacity of the system. Breaks of 5m should be left between sections of mound drains.

9.1.3 Collector Drains

- **Collector drains:** These drains collect water from mound drains, plough furrows, mole drains, etc. Collector drains should not be greater than 80 metres apart and should run at acute angles to the contour. These acute angles should be no greater than 2° (1-in-30) on slopes greater than 3° (1-in-20). They should be excavated to a depth not greater than 10-15 cm below the depth of mound drains. Where collector drains must be extended into erodible material, 'mini' sediment traps should be placed appropriately by deepening the drains in places. Collector drains should discharge *via* sediment trap. Collector drains may also be construct upslope of the site to prevent cumulative flow down site from wetter areas above.

9.1.4 Sediment control and management

Sediment control can be achieved by minimising flow rate and flow volume. Water setbacks or riparian zone vegetation comprising grasses, reeds and shrubs can efficiently filter out sediment, if the water flows over it. The installation and maintenance of sediment traps is also key. See Figure 9.2 for different sediment trap designs. Do not rely on a single sediment trap placed at the end of a drain. A number of small sediment traps located along the drainage network is more efficient at slowing water flow and reducing sediment loss than one large trap located close to the watercourse. Sediment traps are required on <u>all</u> new drains leading to the water setback. Sediment traps should be of such number, design and size that they are sufficient for the full crop rotation. Further information on sediment trap design can be found in the Environmental Requirement for Afforestation document.

If the installed traps prove inadequate and fill with sediment, additional traps should be created or the existing ones maintained so that there is no risk of sediment reaching the aquatic zone or relevant watercourse. They should be located on level ground and should be maintained - sediment traps can fill within days on highly erodible sites or in inclement weather conditions. Sediment traps can be a site hazard and both safety and access for maintenance must be considered at the planning stage. Sediment traps should be rectangular, with the longer side parallel to the feeder drain.

Figure 9.1 Diagram illustrating the use of one type of drainage system, mound drains in combination with collector drains and sediment traps.: Diagram for illustrative purposes only – each site will have to be assessed individually to determine the appropriate drainage design and techniques to use. Designs similar to the one shown may be suitable for steeper erodible sites.

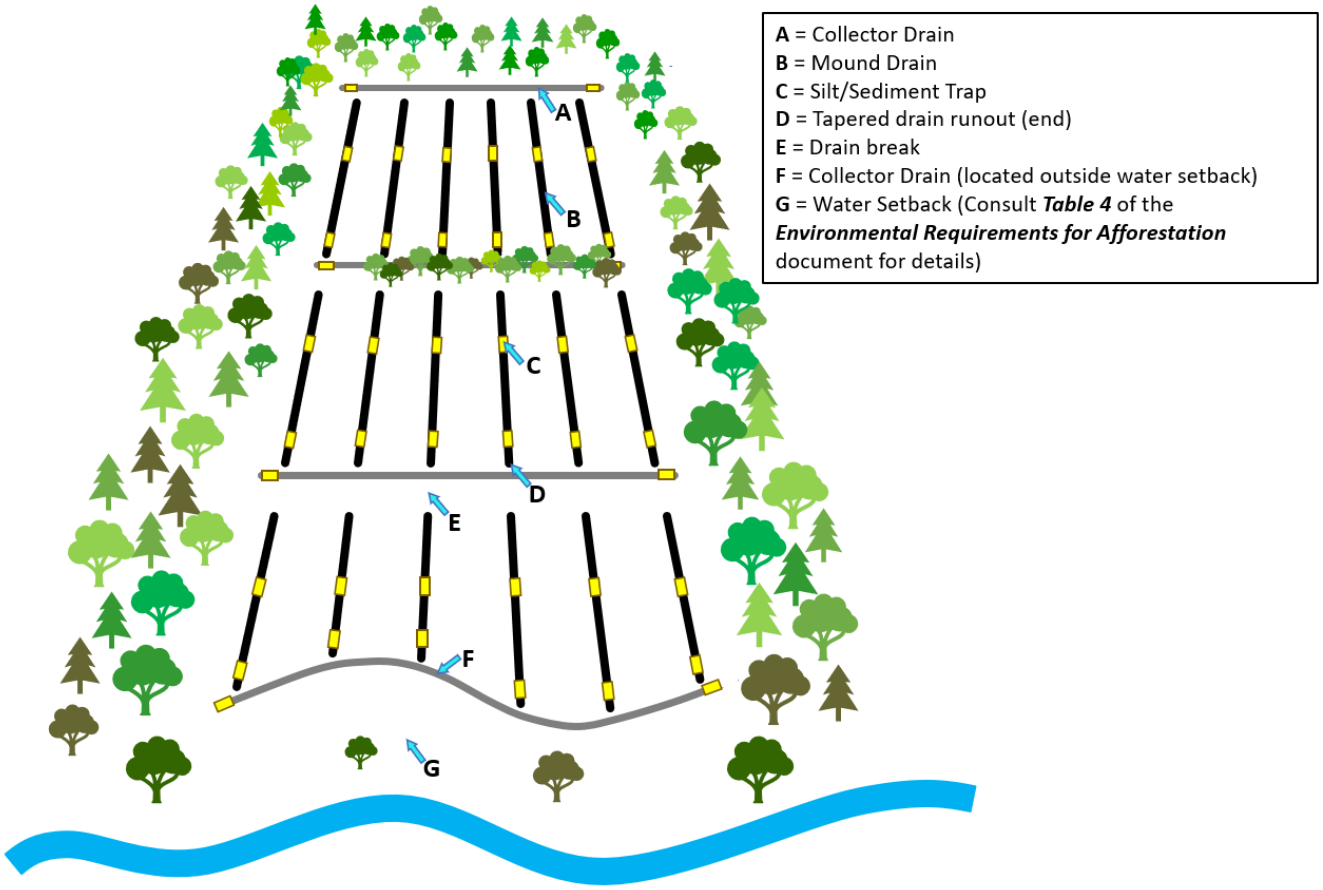

Figure 9.2 *In-drain sediment trap (left) and a sediment trap adjoining a water setback (foreground) (right).*

Small dams, e.g. timber, stone, or staked geotextiles, can be used to slow water flow and to encourage the dropping of sediment. Physical barrier dams should have a 'V'-notch in the centre of the dam, to control the overflow of water and to prevent the erosion and scouring out of the sides of the channel during flood events.

Existing agricultural drains may be used wherever practical. Clearing them of vegetation or changing their shape should be avoided unless it is essential to their function. If such works are deemed necessary, prior installation of sediment traps will be required, and cleaning should be carried out in phases.

Existing drains should not be excavated unless required and only if they do not connect into an existing aquatic zones or relevant watercourses. The construction of new drains, or changing the shape of drains, should not take place in water setbacks or exclusion zones.

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.

At reforestation it may be necessary to introduce a required water setback which was not previously in place. Additional measures may include drain blocking or slow water damming, outside of the water setback, depending on the site specifics to prevent direct discharge into aquatic zones.

Sediment control and management measures must take account of rainfall levels and the possible likelihood of rainfall deluge and flash-flood events. Water setbacks and exclusion zones must not be disturbed during site preparation, as this may lead to the creation of erosion channels.

The more erodible the soil, the greater the level of care needed regarding all of the above points. Further information on drainage design can be found in our *Environmental Requirements for Afforestation*, the *Forest Road Manual* (COFORD).

9.2 Burning and clearing vegetation

The site may have a covering of dense vegetation such as gorse (furze) or bramble. The nature and extent of the vegetation involved will require a decision as to whether or not it should be removed. Every effort should be taken to minimise the need for removal. Certain types of woody habitat (including areas of blackthorn scrub, pockets of high forest trees less than 0.1 ha in area, and hedgerows) can be maintained for biodiversity purposes, as Areas for Biodiversity Enhancement (see Section 6 for eligibility details). Note that grant aid is available to land owners to retain and actively manage areas of emergent native woodland, under the Native Woodland Conservation Scheme or under the FT 5 Emergent Woodland.

If clearance with machine is required, due to specific circumstances (e.g. clearance of Rhododendron), particular care is needed to guard against soil damage, compaction, rutting or removal. Subsequent spraying may also be required, using approved herbicide appropriate to the target vegetation.

In some situations, it may be desirable to burn vegetation prior to planting. Burning should only be supervised by experienced and trained operatives. All burning operations should be carefully planned and conform to the DAFM's *Prescribed Burning Code of Practice - Ireland*, available at:

https://www.gov.ie/en/publication/01773-fire-management/

Burning should be carried out in the season before planting. Burning of gorse (or furze) will not give long-term control and may actually contribute to the further development of the species following burning and subsequent planting. Attempts at burning large areas of gorse is dangerous and increases may increase the rise to wildfire conditions occurring and damage to land, habitats and other resources. Ideally, gorse should be treated by flailing, brush cutter or chainsaw if required.

Where trees are required to be removed (e.g. to facilitate the erection of a fence), a felling licence may be necessary. For details, contact the Felling Section, Forestry Division, DAFM, Johnstown Castle Estate, Co Wexford.

The burning and destruction of vegetation is regulated by the Wildlife Act 1976, as amended by the Wildlife (Amendment) Act 2000.

- Landowners are **prohibited** from burning vegetation on land not yet cultivated, between **1st March and 31st August** of any given year.
- It is prohibited to burn vegetation within **one mile** of a wood without giving written notice to An Garda Síochána and the forest owner. Written notification must be provided to neighbouring forest owners and An Garda Síochána between 7 and 35 days in advance of the burning. The Fire Service must be notified of the operation by telephone on the day of the burning, through the relevant regional control centre *via* the 999/112 telephone service.
- A prescribed burning plan should be in place, detailing how the fire is to be contained and conducted, and the weather conditions, personnel and other resources required to achieve this. A full risk assessment should be conducted as part of the planning process and should take account of local hazards and any resources, crops or dwellings that may be impacted by the burning operation. Fines for breaches of the Wildlife (Amendment) Act 2000 range from **€635 to €63,490** and prison terms from 3 months to 2 years, or both a fine and a prison term. Any person engaged in illegal burning may also be held responsible for any injury or damage caused by the fire.

Where vegetation is uprooted and piled for burning, a burning permit will be required from the Local Authority under the Waste Management (Prohibition of Waste Disposal by Burning) Regulations 2009. Contact your Local Authority for details.

Landowners should also note that under Good Agricultural & Environmental Conditions (GAEC) associated with cross-compliance, the burning of growing vegetation on cultivated or non-cultivated land (including permanent pasture) without approval is prohibited and could lead to penalties under the Direct Payment Schemes.

9.3 Ground cultivation methods

The most appropriate cultivation technique(s) must be selected for each site following a detailed walkover soil survey by a Registered Forester. The depth, soil type and drainage requirements will determine which cultivation method is selected. Table 9.2 Forest Soils and ground preparation, provides land-owners and forest managers with a range of cultivation options that reflect appropriate cultivation method reflecting the current environmental requirements in relation to water quality and the maintenance of existing carbon stocks.

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9.3.1 Mounding

Mound drains

- Mound drains should be dug using a 'V'-shaped bucket.
- A conventional winged mounding bucket may be used for collector drains.
- On sites with slopes greater than 4° (1-in-15), the mound drains should run in the direction of maximum slope and should be fed into collector drains spaced 50 - 80 m apart and aligned at a maximum slope of 2° (1-in-30). This ensures the slow removal of water from the site, thereby avoiding erosion. Alternatively, mound drains can run across the slope at an angle of less than 1-in-30, tapering out before the water setback.
- Depth of mound drains is dependent on soil quality for mounding but should not be more than 45 cm deep in mineral soils. Within these limits, drains should be deep enough to provide adequate drainage throughout the rotation.
- Mound drains should normally be spaced 12 m apart, but can range from 8-16 m depending on soil, hydrology and moisture conditions.
- In exceptional circumstances, drainage spacing may be greater where soil depth permits and where natural drainage is not an impediment to tree growth.
- Design drain gradients so that erosion during storms is avoided, i.e. avoid long runs and use collector drains and sediment traps (see Figures 9.1 and 9.2).
- Separate site and road drainage systems.

Table 9.2 Typical ground cultivation methods for different soil types.

Soil type	Recommended cultivation
Carboniferous surface water gleys derived from Carboniferous drift, and peaty gleys and podzolized gleys with less than 20 cm of peat remaining	Mound on slopes less than 5 degrees Mole Plough on slopes greater than 5 degrees
Peaty gleys, podzolized gleys and peaty podzols with more than 20 cm peat, and blanket peat	Mound
Peaty podzols, peat depth less than 20 cm	Rip
Surface water gleys with adequate slope	Mole Mound
Old Red Sandstone	Mound
Brown earths and other free--draining mineral soils with indicated iron pan	Rip
Brown earths and other free draining mineral soils	Rip Scarify Double furrow agricultural plough where ground conditions permit
Suitable soil types and site conditions	Mechanical planting can be considered

Mounds

- Mound rows at 2 m spacing, except where otherwise stated by the Forestry Division. Spacing to be adjusted within rows rather than between rows.
- Mound size should be a minimum of 45 cm x 45 cm x 15 cm high to a maximum of 60 cm x 60 cm x 20 cm high, and clearly identifiable.
- Mounds should be placed at a minimum of 50 cm from the drain edge.
- An intimate mix of soil should be used from top to bottom, to ensure a good planting medium for each mound.
- Avoid excessive subsoil, particularly on limestone-derived soils.
- Inverted scrap mounds should be considered on steep slopes and on free-draining soils, to avoid erosion.
- A period of settlement after cultivation is required before planting.
- On shallow soils where mound material is limited, supplement mounds taken from the mound drains with scrap mounds taken from the side of the drains.

9.3.2 Ripping

- Rip at 2 m spacing to 45 cm depth, using twin ripper tines.
- The tines should have wings fitted at the bottom, to ensure maximum disruption. The ripping (or sub-soiling) technique is less effective in heavy soils
- In exceptional circumstances, deeper ripping may be necessary in order to break up consolidated soil layers or deep pans.
- Collector drains should be excavated every 50 metres, in order to collect water running in rips and to prevent the risk of erosion and / or flooding of headland or adjacent land. On easily erodible sites (e.g. Old Red Sandstone sites), closer drain spacing should be considered, aligned at a slope of 2° (1-in-30). 5m breaks should be incorporated at regular intervals to reduce runoff in the channels.

9.3.3 Planting machines

- Use potentially suitable on good free-draining agricultural land.
- Tine designed to ensure that there is an appropriate disruption of the soil profile.
- Care should be exercised to ensure that the slit opened by the planting machine is closed properly.

9.3.4 Pit-planting

- Pit planting, slit planting or angle notch planting may be suitable for mineral or old woodland sites. No drainage or soil cultivation is required. It may also be appropriate on steep slopes where soil cultivation may lead to sediment runoff. These planting techniques are also suitable for planting single or small groups of native riparian trees within an aquatic buffer zone is required.

Section 10: **Plant Quality, Handling and Stocking**

10.1 Plant quality

Transplants (planting stock) used for afforestation must satisfy the following criteria:

- a straight stem with a definite leader
- well-balanced foliage with a good fibrous root system
- a specified height to provide for size above ground when planted
- a specified root collar diameter to provide for hardiness
- age not exceeding a specified maximum.

Transplants must be within the quality limits set out in Table 10.1, unless otherwise approved in writing or by way of a Forest circular

10.2 Plant handling and planting

Good plant handling is as important as plant quality. The following should be observed.

10.2.1 General plant handling issues

- Co-ordination and timing of plant deliveries from the nursery to the planting site is essential to ensure that the health of the plants is maintained.
- Bags of trees should be handled with care and not thrown around or from a height onto the ground.
- Non-bagged plants, and plants removed from bags, should be 'trenched-in' on the planting site as soon as possible.
- Plants should not be left with roots exposed and should be stored / trenched-in the shade.
- Cold storage plants should be planted within two weeks of removal from cold store.
- Containerised plants should not be allowed to dry out on site.

10.2.2 Using co-extruded plastic bags

Plants should be bagged in nurseries using co-extruded bags. The trees should be bagged in dry conditions free of excess soil. The date of lifting in the nursery should be known. The week in which the plants are lifted is usually indicated on the labels attached to the bags. Plants in co-extruded bags should be stored in the shade. Plants should not normally remain in bags for longer than 4 weeks after lifting in the nursery, but this period should be reduced to 2 weeks for those lifted early or late in the season. Plant condition should be checked 2 weeks after receipt on the planting site. This period should be reduced to a week during the early and late parts of the lifting season. If there is evidence of heating, plant immediately.

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Table 10.1 Quality limits for conifer and broadleaf transplants.

Species	Maximum age (years)	Minimum collar diameter (mm)	Stem height (cm)
Sitka spruce	4	6 (4*)	31 --- 65 (20 --- 30*)
Norway spruce	4	6 (4*)	31 --- 50 (20 --- 30*)
Lodgepole pine	2	3	10 --- 20
Scots pine	3	4	20 --- 40
Corsican pine	3	3	10 --- 30
Douglas fir	4	8	40 --- 60
Western red cedar / Coastal redwood / other conifer	4	4	25 --- 45
** These are Size 2 Category plants and apply to SS and NS only, and only where approved by* Forestry Division *circular. They are suitable for sites without the potential for the continuous growth of competing vegetation, provided the site is not liable to frost.*			
Ash ***(NOTE Currently not approved for new afforestation sites until further notice)***	3	7	50 --- 75
	4	12	60 --- 90
Oak / Spanish chestnut/ Beech	4	6	45 --- 75
	4	7	55 --- 70
	5	9	70 --- 85
Sycamore	3	7	45 --- 75
Alder	3	4	30 --- 60
Other broadleaves	5	4	40 --- 75

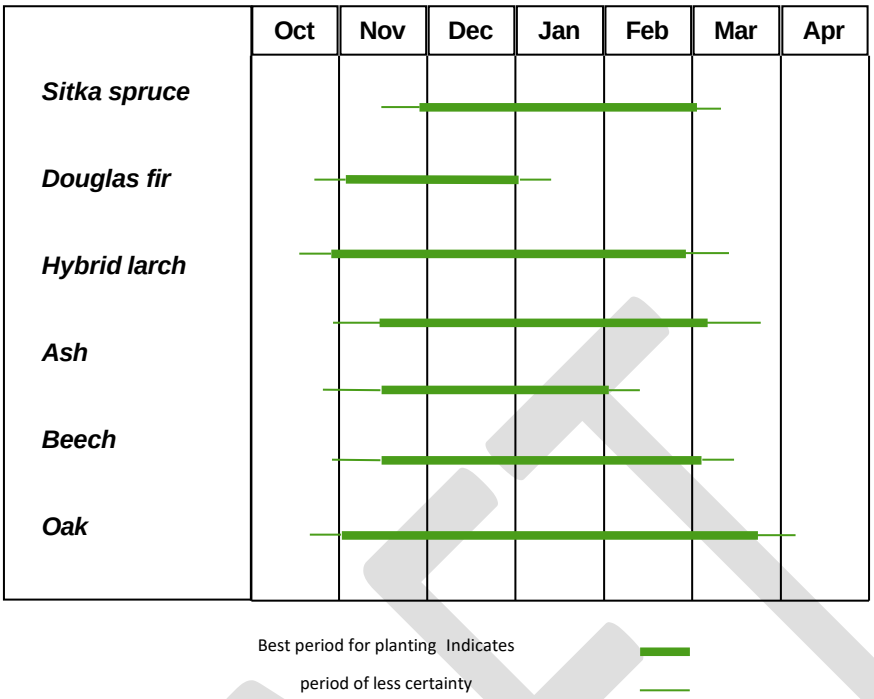
Leave bags slightly open to allow cooling without excessive drying. Bags showing evidence of damage should be repaired with heavy duty tape or placed inside another new bag.

It is against the law to litter. Do not submit a Form 2 application for payment until all packaging (including planting bags, fertiliser bags and herbicide containers) are removed from the site and disposed of in an environmentally responsible manner. The burning or burying of plastic containers and bags is not acceptable. Note the Forestry Division penalty for dumping, as set out in the DAFM document Forestry Scheme Penalty Schedules 2023.

10.3 Lifting and planting dates

Provided that the handling guidelines set out above are adhered to, and the morphological quality and size are acceptable, the planting stock should be in good condition at the time of planting. In addition to the risk of plant mortality, shoot dieback is a common response to poor handling / planting practices. Recommended periods of planting for several species are set out in Table 10.2. The success of transplants after planting depends on plant quality and post-planting environmental conditions. During the period of 'Less certainty', the likelihood of success will vary with plant dormancy level at the time of lifting and post-planting conditions. Planting should be carried out soon after the plants arrive on the site, to minimise these effects.

Table 10.2 Optimal dates for planting freshly--lifted stock.



10.3.1 Cold store plants

Plants from cold storage can be used to extend the planting season into the summer. Planting cold stored plants late in the planting season can be risky as the probability of drought increases. Results have shown that where cold stored plants have been planted late in the planting season, the height increment is reduced. Foresters/ and forest owners should be fully aware of the financial risks associated with late season planting.

Planting methods

Irrespective of the type of soil cultivation employed, tress must be planted correctly to provide optimum conditions for successful establishment. The main forms of planting are as follows:

- **Slit planting:** A spade is used to make a vertical slit in the ground, in a mound or along a rip line. The tree roots are carefully positioned into the slit to ensure that roots are equally spaced in the vertical slit created. The slit is closed and firmed up, ensuring the tree is vertical and upright. It is important to ensure that roots are not bent up , as this can lead to poor development, e.g., J-shaped root. This form of planting can be suitable for ribbons, mounds and ripped ground.
- **Angle notch:** A spade is used to cut a T or L-shaped slit in the flat ground. The spade is used to lift the slit and the tree roots are then placed underneath to ensure good root distribution without causing damage. The slit is closed and firmed up to ensure that stem is left vertical and upright.
- **Pit planting:** A spade is used to dig a hole in the flat ground and the tree roots placed in the centre. Soil is placed around the tree and firmed in, ensuring that it is upright and straight. This form of planting can be used in situations where maximum initial root development is required to ensure successful establishment.

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This technique is more time consuming and is usually reserved for arboretum or garden scenarios or for individual specimen trees of high monetary value.

Trees must be planted and positioned on top of mounds or ribbons and beside rips. It is important to ensure that trees are planted *vertically and upright* to reduce the incidence of bad form on the lower stem. Position the roots in the slit to ensure good distribution, which will lessen the potential for the development of root and lower stem deformities, e.g. J-shaped roots, basal sweep.

10.4 Stocking and spacing

Table 10.3 represents the minimum spacing and stocking requirements for all species at initial planting stage. Only sites that are planted at these stocking levels or greater should be submitted for 1st instalment payment.

Table 10.3 Minimum stocking and spacing for conifers and broadleaves.

Species	Spacing	Stocking (trees / ha)
All conifer species	2.0 m x 2.0 m	2,500
Oak pure	2.0 m x 2.0 m	2,500
Oak & nurse mix	10 lines of oak and one line of nurse species Within lines: Oak 2.0 m x 2.0 m Nurse spp. 2.0 m x 2.0 m	2,500
Beech pure	2.0 m x 2.0 m	2,500
Beech & nurse mix	10 lines of beech and one line of nurse species Within lines: Beech 2.0 m x 2.0 m Nurse spp. 2.0 m x 2.0 m	2,500
Sycamore and other broadleaves (except ash for new afforestation sites)	2.0 m x 2.0 m	2,500
Native Forest	2.0 m x 2.0 m	2,500
Alder	2.0 m x 2.0 m	2,500

Section 11: **Fertilisation Requirements**

11.1 General requirements

- Apply fertiliser manually after cultivation to afforestation sites, avoiding drains, all environmental setbacks, areas within 20 metres of aquatic zones, and waterlogged areas.
- The application of fertiliser should be undertaken based on a prescription resulting from a chemical analysis of soil or if after planting of) foliar samples - see Appendices 14 and 16 for procedures. Adhere to the *Environmental Requirements for Afforestation*, in particular section 3.5.2.
- Fertiliser should not be applied during or immediately after periods of heavy rainfall.
- Fertiliser is best applied in early summer and not outside the period April to August.
- All fertiliser should be applied broadcast and evenly distributed.
- Fertiliser should be placed under shelter on a dry elevated site at least 50 metres from the nearest aquatic zone. The requirement for shelter refers to long-term storage.
- Aerial fertilisation may be considered: (a) for later fertiliser application on sites with dense ground vegetation or branch growth where the branches of adjoining trees are within 1.0 metre of touching each other; or (b) for initial fertilisation on mineral soils which have no cultivation drains. Aerial fertilisation requires Ministerial consent under S.I. 125 or 2012 - see the *Aerial Fertilisation Requirements* (see Circular 11 of 2015).

11.2 Key elements

11.2.1 Phosphate

Phosphate applications in forestry must ensure that, while trees have sufficient phosphorus for sustainable growth, water quality and aquatic habitats are not damaged by phosphorous eutrophication. Forests are sometimes located in areas where naturally nutrient-poor watercourses are vulnerable to enrichment, if even small amounts of nutrients are discharged into them. Forest owners, foresters, managers and contractors must ensure that enrichment of waters does not result from their actions.

Phosphorous deficiency in trees is characterised by: poor height growth; dull green needle colour; reduced needle length; and sparse foliage.

Correct phosphorous management in forestry entails correct fertiliser application in terms of the rate and the timing, *and* the deployment of effective measures to prevent the eutrophication of aquatic zones.

Table 11.1 sets out phosphorous requirements for Sitka spruce at establishment time and should not be exceeded during the establishment of that species or any species.

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Table 11.1 Phosphate requirements.

Site Type	Rate of application of: ➢ Granulated Rock Phosphate (approx. 11% P) ➢ Ungranulated Rock Phosphate (approx. 14% P)
Enclosed / Improved fields recently farmed	None
Former agricultural land not recently worked	250 kg / ha

Rock phosphate is most effective in acid soils. For soils with a pH of 6 or greater, it is advisable to use other forms such as super phosphate. Potato fertiliser (7:6:17) has also been beneficial on broadleaf sites.

Phosphorous application on peat soils should be kept to a minimum in any single application, and careful consideration should be given to splitting the application on these soils.

Fertiliser type(s) and rate(s) should be described in the relevant pre-approval application form for afforestation, woodland improvement, reforestation and aerial fertilisation.

11.2.2 Potassium

Midland fen peats normally under grass often require potassium for successful tree growth (the Midlands in this context corresponds roughly with the area of the Central Plain). Potassium deficiency can occur in the midlands and in western counties. Potassium is applied as muriate of potash (50% K) at 250 kg per ha.

11.3 Fertiliser requirements within broadleaf Forest

Ideal broadleaf sites seldom require fertiliser. On enriched peats and other sites where broadleaves may not grow to their full potential, an application of a compound fertiliser (such as 10.10.20, 18.6.12 or 7.6.17 sulphate of potash) is recommended at Year 2 or Year 3. If a nutrient deficiency is suspected at any stage, a foliar analysis should be carried out. See Appendix 16 for details on foliar sampling procedures. This will determine the type and rate of fertiliser required.

Ideal broadleaf sites seldom require fertiliser. On enriched peats and other sites where broadleaves may not grow to their full potential, an application of a compound fertiliser (such as 10.10.20, 18.6.12 or 7.6.17 sulphate of potash) is recommended at Year 2 or Year 3. If a nutrient deficiency is suspected at any stage, a foliar analysis should be carried out. See Appendix 16 for details on foliar sampling procedures. This will determine the type and rate of fertiliser required.

11.4 Sites 'in check'

Often on infertile sites, even those that were correctly fertilised at planting, trees may begin to lose vigour. This may occur years after planting. To remedy the situation, it is necessary to determine the nutrient status of the trees that are 'in check'. Foliar analysis will be required to establish their nutrient status and to determine the type and rate of fertilizer application required. Indeed, sites may also go into "check" due to a high water table. In such sites the application of fertiliser may not produce any response in terms of tree growth.

Refer to Appendix 16 for details on foliar sampling procedures.

11.5 Protection of aquatic zones

Mineral soil particles contain varying amounts of phosphorous which may be released slowly into the aquatic environment. The amount varies with soil type and with previous fertiliser applications.

Podzols and some peats are very erodible, more so than brown earths which are, in turn, more erodible than gleys. The greater the slope, the more a soil is liable to erosion. Periods of heavy rain make all locations vulnerable to sediment loss.

Sediment must be prevented from entering aquatic zones. This is achieved by adherence to the *Environmental Requirements for Afforestation* and the *Felling & Reforestation Standards*, and with appropriate sections of this manual. Site-specific measures may also be required.

Fertiliser should not be discharged into a free-flowing drain, nor into a sediment trap.

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Section 12: **Fencing and Fire**

12.1 Fencing

Forest must be fully protected from the time of planting. Fencing rates under the Afforestation Scheme are set out in Appendix 1.

There is no requirement to duplicate existing stock-proof fences, rivers, substantial walls, or other stock-proof boundaries with additional fencing. Where fencing is required, specifications set out in Table 12.1 apply.

Adequate access to a forest for management purposes should be provided using stiles and / or secured temporary openings in fence lines. Stiles must be erected at access points to all forests, and designed and maintained to allow safe access. Their positions must be indicated on the Biodiversity Map.

There is no requirement or additional funding to provide gates to all plots. All existing fences and boundaries must be to a standard that can exclude domestic stock and protect the growing trees. If plots require rabbit fencing, the entire area to be protected must be enclosed with a rabbit-proof fence. Tree guards for rabbit and hare protection can be used for small areas otherwise protected from livestock. These must be to such a height that the rabbits or hares cannot damage the tops of the trees (normally 75 cm high tree guards are sufficient).

The Deer Tree Shelter Scheme is available to provide support for the establishment of broadleaves for in FT12, which occur in areas of high deer pressure, to protect enable the successful establishment for this Forest Type.

Electric fencing is not acceptable unless supplementing the specifications given in Table 12.1.

In some cases, the upgrading of an existing fence may be grant aided within the overall maximum fencing thresholds per hectare. Any grant aid considered will be based on the equivalent materials and labour required to erect a new fence. Equivalent lengths claimed relate to fences upgraded with fencing materials and not boundaries strengthened using excavators during establishment.

12.1.1 Fencing wire and netting standards

The wire used must be to the following International Standards:

- I.S. EN 10223-1 Steel wire and wire products for fences – Part 1: Zinc and zinc-alloy coated steel barbed wire.
- I.S. EN 10223-5 Steel wire and wire products for fences – Part 5: Steel wire woven hinged joint and knotted mesh fencing.
- I.S. 126 Galvanised Fencing Wire.

Other netting and wire requirements include the following:

- The mesh in rabbit netting should not exceed 32 mm (1.25 inch). 19 gauge wire is recommended. No weaker than 21 gauge wire should be used.
- Rectangular mesh netting or chain-link fencing for sheep should not exceed 15 cm x 20 cm (6 inch x 8 inch).
- Plain wire of single strand mild steel should be 4 mm in diameter.

- Barbed wire comprising two line wires of 2.5 mm mild steel or two line wires of 1.6 mm high tensile steel, having 4-point barbs at intervals between 75 mm and 85 mm.
- Use galvanised staples made from 4 mm diameter wire and 38 mm (1.5 inch) long.

The post and wire specifications for forest fencing are outlined in Table 12.1, and these apply to all fences erected on afforestation sites. Fencing grants are only applicable where there is a genuine need for fencing, e.g. where hedgerows are not tall or sufficiently strong enough, or where ditches *in situ* are not stock proof.

The afforestation grant is available as a fixed grant in respect of costs incurred in the establishment of a Forest. The fencing grant rate depends on whether the stakes are certified to Irish Standard 436:2007. The fencing allocation grant is paid at the same time as the 1st Instalment - see Appendix 1 for details. In certain circumstances, for example along public pathways the use of non-barbed wire also referred to a Bull Wire may be used.

In certain circumstances, for example along public pathways the use of non-barbed wire also referred to a Bull Wire may be used.

12.1.2 Fencing Standard IS 436

Where fencing is involved, it must be to the Irish Standard 436:2007 to claim the higher rates of grant aid. The standard aims to give an anticipated service life of 15 years where timber posts are in contact with the ground. IS436 covers a number of technical specifications which include:

- permitted timber species
- post sizes and diameters
- timber preservatives
- pre-treatment drying requirements
- labelling and traceability of the end product

Copies of this standard are available from the National Standards Authority of Ireland (NSAI).

To qualify for the higher IS 436 grant rates, all fencing posts claimed in the 160 metre/hectare allowance must be certified to this standard. Where part of the 160 metre/hectare allowance claim contains non-IS436 material, the entire allowance will be assessed at the non-IS436 grant rate and at a density of 120 metre/hectare for the *entire Forest*. All fencing claims will be capped at €50,000 perf contract area. The total fencing allowance available will depend on the contract area of the Forest multiplied by 160 metres. All claims for grant aid will be based on the measured fence length of new fences erected. The fencing allowance (with the exception of deer fencing) is capped in relation to the contract area and requires that fencing claims are only made against boundaries where there is a fencing need. y. Deer fencing allowances are explained below. An IS436 Fencing Post Certificate must be completed in full and attached to the Form 2. To qualify for a new fence which has not been certified to the IS436 standard, grant aid will be limited to 120 metre/hectare and based on Grant & Premium Categories.

Regarding the supply of fencing posts, only companies that are certified by the NSAI or equivalent, can supply IS436 fencing stakes suitable for use in the Afforestation Scheme.

IS436 certificates are produced in duplicate. The stake IS436 registration holder retains the original copy and gives the second copy to the person / company purchasing the posts. Manufactures

of NSAI fencing materials shall obtain numbers for each certificate directly from the Nitrates, Biodiversity & Engineering Division, DAFM, Pavilion A, Grattan Business Centre, Dublin Road, Portlaoise, Co. Laois. This replicates the same process as administered under the DAFM Farm Fencing Scheme. All NSAI registered suppliers of timber certified to IS436 will contact DAFM directly for certificate numbers. Registered suppliers of IS436 timber fencing are available on the NSAI website.

12.1.3 Non-IS 436 fencing

The DAFM encourages the use of the IS436 standard. However, it has decided to continue to provide grant aid for new fences that do not meet this standard, but to do so at a lower rate and allowance per hectare. A decision to continue funding non-IS436 fencing will be kept under review.

12.1.4 Deer fencing allocation

The maximum allowance for deer fencing is calculates as follows:

- The fencing allowance for IS436 deer fencing will based on 160 metres/hectare and will be calculated based on the area *enclosed and protected* by the fence.
- All deer fencing allowances must be approved in advance and will be based on the area enclosed and protected by the deer fence. For non-IS436 deer fence, the allowance will be capped at 150 m, i.e. 150 m/ha.
- All deer fencing must be approved in advance. Only sites where at least 70% of the area enclosed by the deer fence of FT1 - FT11 is eligible.

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Table 12.1 Specifications for forest fencing
(This table should be read in conjunction with IS436: 2007).

Fence Type	Wire and Netting	Intermediate posts (stakes)	Turning posts	Strainer posts
Cattle	Barbed wire (Plain wire along public roads, etc.) Number of strands: 3 Distance between strands: 18 – 23 cm Top strand not less than 1 metre from the ground	Round stake: Length: 1.5 m (+/--- 30 mm) Top diameter: 10 cm (+/--- 3 mm)	Turning posts should be provided where there is a change in the angle of the fence but where this angle is less than 30°. Length: 1.8 m Top diameter: 12.5 cm Distance apart: As required	Strainers should be provided at the beginning and end of every length of fencing, at gaps or openings, at every change of direction where the angle is greater than 30°, and to accommodate any significant change in gradient. Length: 2.1 m Top diameter: 17.5 cm Usual distance apart: 100 m Strut: Length: 1.8 m Diameter: 10 cm
Cattle / Sheep	Ordinary sheep netting or rectangular mesh sheep netting One strand of barbed wire Barbed wire 10 --- 12.5 cm above the netting Lowest line of the sheep mesh between 50 mm and 100 mm above ground level (The use of barb wire may be waived on application where there is no long-term threat from cattle)	Split stakes: Length: 1.5 m (+/--- 30 mm) Diameter: 12.5 cm (+/--- 25 mm) Machined squared: Length: 1.5 m (+/--- 30 mm) Top dimension: 10 cm x 10 cm (+/--- 3 mm) Distance apart Mild steel: 4 m High tensile: 5 m		
Cattle / Rabbit	Rabbit netting Three strands of barbed wire One strand on top of the rabbit netting and netting stapled to barbed wire. Second strand 1.05 m above the ground. Bottom of netting turned outwards and held down with sods, stones or pegs. One strand 15 cm from the bottom			
Rabbit / Hare	Rabbit netting Two strands of barbed wire One strand on top of the rabbit netting, with the netting looped over barbs. Second strand 15 cm above rabbit netting. Bottom 15 cm of rabbit netting buried underground turned outwards and held down with sods. This will leave approximately 90 cm of rabbit netting above the ground. This will be made easier if the fence is constructed in a ploughed furrow. The rabbit wire can then be turned outwards and the plough ribbon placed back on top.			
Deer	(a). Rectangular wire mesh, 1.9 m high or two lengths of sheep wire, one over the other and secured together with staples. (b). Alternative fencing specifications/post arrangements may be approved on a case---by--case basis, on application to the Forestry Division. (For example, on very uneven terrain, on exceptionally stony ground, or where post--holes cannot be dug or augured, non--tensile suspended fencing may be approved.) Note that a strand or strands of barbed wire must not be strung along the top of the deer fence. Use plain wire instead.	Length: 3 m (driven 1 m into ground) Diameter: 12.5 cm Distance apart: 8 m	Turning posts for angles less than 30°. Length: 3.0 m Top diameter: 20 cm Distance apart: As required	H---frame only. Strut (1.8 m length, 10 cm diameter) to be fixed to strainer posts using either galvanised steel rod or rebated joint (See IS 146:2001) Length: 3 m (driven 1 m into ground) Top diameter: 20 cm Distance apart: 80 m

12.2 Fire

The potential risk that fire poses to forests may vary and its should be assessed and methods to reduce these risks should be prescribed and implemented. Where appropriate, protection against fires is a requirement for grant approval. The presence of any flammable vegetation, such as purple moor-grass, furze and heather in the vicinity of the forest, may strongly indicate that a firebreak is required. Firebreaks need regular maintenance where a fire risk exist and demands timely managements.

Firebreaks should constitute a fuel-free zone of 6 metres in width and should normally be placed along the external boundaries of Forests. However, in blocks of 60 hectares or more, internal firebreaks, roads or other fuel-free zones should be considered. Most fires spread from adjoining lands into forests and for that reason, firebreaks are most often located on the forest boundary. However, they represent a form of soil disturbance, so it is important to depart from the boundary when constructing them, if archaeological, water quality, biodiversity or other considerations so require. In these instances, the appropriate buffer and exclusion zones must be observed, and the firebreak must be installed at the required distance back from the relevant features and their buffers. Landscape considerations may also dictate that part or all of the firebreak be installed within the forest boundary, as opposed to along a highly visible outside boundary.

Large forest properties (>60 ha) where there is a high fire risk, should be served by reservoirs of water as an aid to fire control. The acceptable specification for a reservoir is a minimum capacity of 22,700 litres (5,000 gallons).

A reservoir should be fully operational during fire danger periods and easily accessible to vehicles. All reservoirs should be adequately fenced. Currently, Forestry Division does not provide funding for reconstitution following damage to forests by fire. Forest owners who fail to reconstitute a damaged Forest will be considered in breach of contract, and the repayment of all grants and premiums will be required and further premium payments will be stopped on the relevant Forest.

The Forestry Division strongly recommends that forest owners ensure that they have adequate insurance in the event of a fire, including the cost of reconstitution.

12.1.5 Fire and the obligations of forest owners

Beneficiaries of the Afforestation Scheme grants and premiums are obliged to maintain and protect their forest while in receipt of payments from the date the grant was first paid whether or not a reconstitution scheme for fire damage exists. This means that there is an obligation on the beneficiary to replant where a forest is damaged by fire.

Failure to adequately protect and maintain a grant-aided forest can result in the cessation of premium payment and may ultimately result in the recoupment of all grant and premium monies received unless remedial work is satisfactorily carried out. When reconstitution schemes are open to applications: if a forest is damaged by fire, the forest owner must follow the procedures set out below. When reconstitution schemes are open to applications: if a forest is damaged by fire, the forest owner must follow the procedures set out below.

- Submit a 'Reconstitution Notification Form 1: Application for Approval' form as quickly as possible. This form is used: (i) to inform the DAFM that the forest has been damaged; (ii) to provide details of the work required to reconstitute (replant) the site; and (iii) to obtain the approval of the Forestry Division to carry out the proposed reconstitution works. The forest owner completes Pages 1 and 2 of the form, while Pages 3 and 4 must be

completed by
a Registered Forester. A map of the site prepared and signed by the Registered Forester and clearly identifying the damaged area and setting out any proposed changes in species, must accompany the above Form 1.

Note: Forestry premium payments may be suspended until the reconstitution works have been completed, depending on the extent of the damage.

- If the plan is acceptable to the Forestry Division, the forest owner will be notified in writing to proceed with the reconstitution works.
- When the reconstitution works have been completed, a 'Form 2: Reconstitution Notification Form' should be submitted to the Department. The forest owner completes Pages 1, 2 and 3 of the form, while Pages 4 and 5 must be completed by a Registered Forester. A Certified Species Map, prepared and signed by the Registered Forester, must accompany this form.
- The forest will be liable for further inspection by the DAFM 4 years after the reconstitution works are completed. A 'Form 3: Reconstitution Notification Form' will be posted to the forest owner for completion and return, in advance of the inspection.

The Forestry Division strongly recommends that the following cost-effective steps should be implemented by forest owners in order to address the risk of fire damage to their forest:

- Consider the financial consequences of fire damage – it is the responsibility of each forest owner to ensure that adequate insurance cover, including cover for reconstitution costs, is in place. Firebreaks should be well-maintained and checked at least once a year.
- Prepare a Fire Plan (see below) and review it regularly. List key contact numbers and discuss procedures with family members.
- Raise awareness with your neighbours so that people are not careless in the vicinity of the forest. Make sure they are aware of the legal ban on the burning of growing vegetation on uncultivated land between 1st March and 31st August each year.
- Landowners who set fires to burn vegetation are obliged to give you (and An Garda Síochána) written notice if they intend to burn within a mile of your forest, and you are entitled to object by counter notice (within 3 days).

  Take responsibility by reporting any suspicious activity to An Garda Síochána.

  As mentioned previously in section 9.2 of this document, consult with the following document on fire management: https://www.gov.ie/en/publication/01773-fire-management/

The prompt reporting of forest fires is essential and for this purpose, a dedicated e-mail address report.fires@agriculture.gov.ie has been allocated by the DAFM. You can also report fires during normal working hours by phoning the Lo-Call number 1890 200 509 or in writing to the Forestry Division (Forest Fires), Department of Agriculture, Food & the Marine, Johnstown Castle Estate, Wexford.
Any information submitted will be treated in the strictest confidence. However, it should be noted that the DAFM is subject to the provisions of the Freedom of Information (FOI) Acts.
For further information, see:
https://www.gov.ie/en/publication/regulation-forest-health-and-resources/

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12.1.6 Fire plan and preparedness

The Forestry Division's *Forest Protection Guidelines* provide information on fire plans. Forest owners should ensure that they have made adequate provisions to mitigate the risk of fire damage. Forest owners in high fire risk areas should *always* ensure that appropriate fire plans *and contingency measures* are in place, irrespective of the area of the Forest. Plans should be reviewed in advance of the fire season and updated as required. Plans should be kept in readiness by the forest owner / manager in the event that they are required.

A Fire Plan should include the following:

- A risk assessment, identifying all areas of the Forest vulnerable to fire ingress, and the likely outcomes of fire ingress, should this occur.
- A map illustrating the following:
  - assembly points (e.g. local landmark or crossroads).
  - access / escape routes
  - reservoir or water point
  - firebreaks
  - adjoining forests
  - high fire risk areas, including bracken, gorse, biofuels, dwellings and other structures
  - The telephone numbers of key personnel should also be recorded on the map, for example: the local fire station, the local Garda station, caretaker, doctor, neighbour, registered forester, forest owner, key equipment holders (e.g. vacuum tankers, ATV, fire trailers) and aviation contractor (i.e. contracts for aerial fire-fighting should be in place prior to the fire season).

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Section 13: **Vegetation Management and Shaping**

13.1 Vegetation management

Vegetation reduces both the survival and height growth of trees by competing for light, moisture and nutrients. Within the context of afforestation, the most effective and efficient means of controlling vegetation is by the use of herbicides. Successful establishment *to* Forestry Division *standards* should be achieved *by controlling vegetation in a 1.0 metre diameter spot (or 1.0 metre wide band) around the base of the trees for the first 4 years*. Refer to the publication *Use of Herbicides in Forestry*, published by Coillte Teoranta (Ward, 1998) on behalf of the Forestry Division for information on the use of various herbicides.

Please note that the use of chemicals is governed by the Health & Safety at Work Act 2005, and all users / operators should be familiar with manufacturer's instructions.

Individuals using herbicides, pesticides, managers and forest owners should all familiarize themselves with best practice and legislation relating to the regulation of Pesticides in Ireland:SI 155 of 2012 - The European Communities (Sustainable Use of Pesticides) Regulations 2012

The EPA has also published a code of practice for cleaning and disposing of empty chemical containers:
https://www.epa.ie/publications/compliance--enforcement/waste/triplerinseguidepesticidedairyhygiene-.php

13.2 Formative shaping

Formative shaping of broadleaves is an ongoing integral part of broadleaved management. This operation must be completed by the 2nd instalment for sycamore plots.

If properly maintained with good vegetation control and management, it may be necessary to shape oak and beech prior to the 2nd instalment stage. Where oak or beech forests have been successfully established by a forestry contractor to whom the 2nd instalment grant is mandated and where the trees are deemed not to be ready for formative shaping, a Form 3 may be submitted by that company with a joint declaration with the owner that formative shaping to DAFM standards will be carried out within a specified time period. Failure to carry out formative shaping successfully by the approved date will result in premiums being suspended and / or recouped. DAFM may request formative shaping to be carried out for all broadleaf FTs (6, 7 & 8) if deemed necessary. As outlined above, this may be requested in advance of the 2nd instalment payment or in the form of a joint declaration between the company and the forest owner that the formative shaping will be completed in a specific timeframe after the 2nd instalment has been paid.

Formative shaping should occur when the trees are between 1 – 2 metres in height. When completed, the operation should result in a minimum of 60% Grade 1 and Grade 2 plants evenly distributed throughout the forest (see Table 13.1 for grade descriptions).

Conifers that suffering a late spring frost or salt spray on exposed sites may produce multiple

leaders. Rather than replacing these trees, it is important that they are formatively shaped to leave one leader on each stem. If only a small proportion of the crop (<5%) is affected, it may not be necessary to carry out this operation. Wind blast in exposed areas may also result in multiple leaders in conifers which may benefit from the removal of surplus leaders.

Shaping involves the encouragement of apical dominance on a plant by the removal of multiple leaders and stem / branch defects with secateurs, pruning saw or loppers. Typical defects include, oversize side branches, acute angles of branch insertion, whorls, waves, kinks, bayonet relays, forks and multiple leaders. The shaping technique requires the judicial removal of selected branches but retention of the 'branch bark ridge i.e. 'a ridge which is readily visible at the stem / branch junction of tree is essential. The knife or secateurs should be disinfected regularly with an alcohol swab during the shaping operation. There is no need to remove the lower branches unless they are very large (i.e. >50% of the main stem). All trees that can be readily shaped (i.e. Grade 2 and Grade 3 trees) should receive the treatment. Trees that are very poorly formed should not be shaped and should be either stumped back or let grow on in order to shade out the side branches of adjacent trees of higher quality. Trees should only be shaped during those months indicated in Table 13.2.

The aim of the first shaping is to achieve over 60% Grade 1 and Grade 2 trees for most broadleaf species (see Figure 13.1). The aim of the second shaping is to achieve over 50% Grade 1 and Grade 2 trees (at 2 – 4 metres in height) for most broadleaf species.

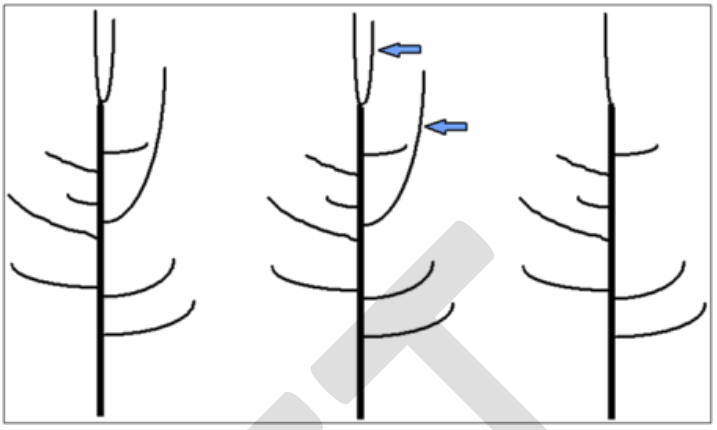
Table 13.1 Standard quality grades for broadleaf trees.

	Grade 1	Grade 2	Grade 3	Grade 4
Overall	Very good tree	Good quality tree	Poor quality tree	Very poor tree
Stem straightness	Straight stem	Stem can be wavy	Crooked stem	Crooked stem
Apical dominance	Single leader	Not full apical dominance	Poor apical dominance	Poor apical dominance
Form	Narrow form	good form	Poor form	Very poor form
Co-Dominants	No strong co--- dominants	No strong co--- dominants	Strong co--dominants	Multiple co--dominants
Branching	Light branches	No more than one heavy branch	One or more heavy branches, one or more forks	Heavy branches, extensively forked
Shaping required	No shaping required	One or at most, two cuts to be converted into Grade 1 tree	Numerous cuts to be converted into Grade 1 or Grade 2 tree	Shaping not likely on grounds of cost and crop balance

Table 13.2 Timing of shaping.

Species	Best period for shaping	2nd best period for shaping
Oak	December	Mid-winter
Ash	June to August	Mid-winter
Beech	June to August	Mid-winter
Sycamore	June to August	Mid-winter
Cherry	June to August	Mid-winter

Figure 13.1 Formative shaping of broadleaves.



'A' shows a young broadleaf tree in need of formative shaping.

'B' identifies the branches that must be removed if the tree is to produce a single straight stem.

'C' shows how the tree looks after shaping. Note that many side branches not competing to become the leading shoot are left on the tree.

Photos 13.1 & 13.2 Oak tree before (left) and after shaping, with resultant improvement in early stem quality.

Section 14: **Required Forest and Forest Management Standards**

14.1 General

Applications submitted for pre-approval and grant payment must adhere to standards set out in the following documents, which form a condition of approval:

- *Forestry Standards Manual*
- *Environmental Requirements for Afforestation*
- *Land Types for Afforestation*
- The relevant and current Scheme Document
- *Forestry & Kerry Slug Guidelines*
- *Forestry & Otter Guidelines*
- *Forestry & Freshwater Pearl Mussel Requirements: Site Assessment and Mitigation Measures*
- *Code of Best Forest Practice – Ireland*
- *Irish National Forest Standard*
- *Forest Road Manual: Guidelines for the Design, Construction & Management of Forest Roads* (COFORD, 2005)

Registered Foresters and applicants must ensure that applications are complete and are within the scope of the scheme in question. A physical site survey by Registered Foresters is mandatory at all stages, i.e. Form 1, Form 2 and Form 3, and by signing these forms, the Registered Forester is declaring that all of the information is accurate. The following sections provide a summary of requirements at each stage of the approval and grant payment process. Specific scheme requirements are detailed in the relevant and current Scheme Documents, available on the Department's website.

14.2 Application for Pre-Approval (Form 1)

Applications submitted for approval must include and adhere to the following:

- Form 1 application form, fully completed.
- Species proposed are silvicultural and environmentally suited to the site.
- Applicant declaration completed, dated and signed.
- Registered Forester declaration completed, dated and signed.
- Certified Species Map and species plot table completed in accordance with mapping standards set out in Section 17.
- Biodiversity Map (as per mapping standards in Section 17).
- Habitat Map (as per mapping standards in Section 17).
- Fencing Map (as per mapping standards in Section 17).

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- If applying under the Forest Road Scheme, a Forest Road Map (as per mapping standards in Section 17), Forest Road Specification and Inventory Details.
- Scheduled of Proposed Costs / Operations, if applying under the Forest Road Scheme, the Reconstitution Scheme, or the Native Woodland Conservation Scheme.
- All areas ineligible for aid (e.g. areas of shell marl) to be excluded from the claimed area.
- Forest Type (s) (e.g. FT12) correctly identified and mapped.
- Calcium carbonate test results submitted as per the Acid Sensitivity Protocol, if applicable (see Appendix 11).
- Drainage survey report, if applicable (see Section 9).
- Soil analysis report, if applicable (see Section 11).
- Environmental Impact Statement.
- Signed consent by the current landowner, to make an application.

14.3 Application for 1st Instalment Grant (Form 2)

Applications submitted for payment of a 1st instalment grant must include and adhere to the following:

- Form 2 application form, fully completed.
- Applicant declaration completed, dated and signed.
- Registered Forester declaration completed, dated and signed.
- Planted forest complies with the various documents set out in Section 14.1 above (including the *Forestry Standards Manual*, the relevant Scheme Document, and the suite of mandatory environmental 'guidelines'), together with the approval letter and any additional conditions of approval. For example the mitigation measures detailed in an Appropriate Assessment Determination.
- Certified Species Map and species plot table completed in accordance with mapping standards set out in Section 17.
- Biodiversity Map (as per mapping standards in Section 17).
- Fencing Map and claimed length(s) (as per mapping standards in Section 17).
- Provenance Declaration forms completed for all species, as required (see Section 8).
- If applying under the Forest Road Scheme, a Forest Road Map (as per mapping standards in Section 17).
- Tax Clearance Certificates.
- Valid Mandate (if applicable). All plots must have at least 90% of the original planted trees spread evenly over the site, free from competing vegetation to be eligible for 1st instalment. However, all failures must be replaced to 100% of the original stocking at the next growing season, as part of the ongoing maintenance of the Forest.
- Mapped boundaries and species plot table completed in accordance with mapping standards set out in Section 17.

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- All areas ineligible for aid (e.g. areas of shell marl, buildings) excluded from the claimed area.
- All plots and Forest boundaries have been verified on-the-ground and mapped accurately.
- FT(s) correctly identified and mapped.
- Site boundaries are adequately fenced to protect the young forest.
- Firebreaks and silt traps correctly installed, if applicable.
- Scheduled of Costs / Operations, if applying under the Forest Road Scheme, the Reconstitution Scheme, or the Native Woodland Conservation Scheme.

14.4 Application for 2nd Instalment Grant (Form 3)

Applications submitted for payment of a 2nd instalment grant must include and adhere to the following:

- Form 3 application form, fully completed.
- Applicant declaration completed, dated and signed.
- Registered Forester declaration completed, dated and signed.
- Planted forest complies with the various documents set out in Section 14.1 (including the *Forestry Standards Manual*, the relevant Scheme Document, and the suite of mandatory environmental 'guidelines'), together with the approval letter and any additional conditions of approval.
- Certified Species Map and species plot table completed in accordance with mapping standards set out in Section 17.
- Fire Plan Map for Forests greater than 10 ha.
- All plots must have at least 90% of the original planted trees spread evenly over the site, free from competing vegetation, and free growing (see Photos 14.1 to 14.4).
- Any nutritional deficiencies identified have been remedied and the crop is now established and free growing.
- Broadleaves shaped as described in Section 13.
- Mapped boundaries and species plot table completed in accordance with mapping standards set out in Section 17.
- All areas ineligible for aid (e.g. areas of shell marl, buildings, excluded from the claimed area.
- All plots and Forest boundaries have been verified on-the-ground and mapped accurately.
- FT(s) correctly identified and mapped.
- Site boundaries are adequately fenced to protect the young forest.
- Installed firebreaks and silt traps properly maintained, if applicable.

A Form 3 should only be submitted for payment if and when the entire Forest is established satisfactorily. Where part of the Forest is not up to standard, the applicant should not submit a Form 3. Any Form 3 submitted that falls into this category will not be paid until the entire Forest is up to the required standard.

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Photo 14.1 & 14.2 Norway spruce (left) and Douglas fir at Year 4.

Photo 14.3 & 14.4 Oak (left) and ash at Year 4.

14.5 Fertility

Forests where trees are showing signs of nutrient deficiency should not be submitted for 2nd instalment payment. In such cases, a foliar analysis should be undertaken to determine the nature of the deficiency and the prescribed fertiliser type and rate be determined. The site should then be fertilised accordingly and only submitted for 2nd instalment payment, following a successful response to the fertiliser application i.e. after a growing season has passed.

See Section 11 for details regarding fertilisation.

14.6 Fences, forest roads, firebreaks, drains and sediment traps

All fences, forest roads, firebreaks, drains, sediment traps, etc. should be properly maintained and in good working order.

Forest protection should be adequately fenced to ensure that trespass from domestic livestock does not occur. For information on various aspects of forest protection, see the Forestry Division *Forest Protection Guidelines*.

Irish forests are recognised under the EU Plant Health Directive as being among the healthiest in Europe, with relatively few serious forest pests or diseases. This is mainly due to Ireland's island status, the relative newness of its forest estate, and the enforcement of forest plant health regulations.

Early detection of a newly introduced pest or disease is essential, and forest owners and the forest industry are encouraged to be ever-vigilant in detecting such introductions. *If any **unusual** pest or disease is observed, please immediately contact your local Forestry Inspector*.

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Section 15: **Agroforestry (FT8)**

15.1 General

The Agroforestry measure – captured under Forest Type (FT8) – is aimed at encouraging the development of Silvopastoral agroforestry systems that combine forestry and grass which is either grazed, cut or both. Plots created under FT8 must satisfy the definition of a 'forest', as described in the national forestry inventory. The felling and replanting of trees will be regulated by the Forestry Act 2014. Agroforestry plots will contribute to increasing the national forest cover.

15.2 Specific requirements under FT8

15.2.1 Stocking levels

A minimum stocking rate of 400 trees per hectare is required.

15.2.2 Minimum area and width

The minimum plot area and width eligible under FT8 is 0.2 ha and 2.0m tree-to-tree, respectively. See Sections 5.4.

15.2.3 Species

Acceptable broadleaf species include oak, sycamore, Red oak, walnut and cherry. Other species, including conifers, will be considered on a site-by-site basis.

15.2.4 Site type

Ideally, sites should contain free-draining mineral soils and should have no requirement for additional drainage. In general, sites suitable for agroforestry should not require additional fertiliser for tree growth. However, additional nitrogen (<100 kg / ha) may be required to promote grass growth for spring / summer grazing. This can be assessed on a site-by-site basis.

15.2.5 Planting

Planting should be carried out using pit planting, where possible. Alternative methods using an auger, invert mounding or ripping may be considered on a site by site basis.

15.2.6 Vegetation control

In most situations spraying with a herbicide is not necessary as the animals will graze any competing grass around the shelters. In some case's spot spraying prior to planting, using a suitable herbicide, may be required to prevent grass growing within the tree shelters. Alternatively, grass can be removed from within the tubes by sliding the tube up and pulling the grass away manually.

Agroforestry systems may be approved on application, to take account of criteria associated with Organic Farming Scheme.

DRAFT

15.2.7 Fencing

Agroforestry plots must be fenced with appropriate stock-proof fencing. Where an agroforestry plot forms part of a larger afforestation project, it must be fully fenced to prevent animal trespass into the adjacent forest plots. Plants must be protected by tree shelters for the first 6 - 8 years (this can vary with tree species and soil quality). Tree shelters will be replaced with plastic mesh (geotextile) immediately thereafter, depending on tree growth.

15.2.8 Allowable agricultural activities

The following agricultural activities will be permitted within a FT8 plot, as long as such activity is compatible with protecting the trees:

- **Pasture:** Grazing by sheep, poultry or small calves are permitted, however trees must be protected and tree shelters checked regularly. Thereafter, when tree shelters are replaced with plastic mesh, larger animals may be introduced.
- **Fodder:** Silage and hay production is permitted. It is important that appropriate machinery is used when cutting silage and / or hay, to ensure that the trees are not inadvertently damaged. It is important to plan ahead to facilitate locations where machinery can turn.

15.2.9 Grant and premiums rates

Grant rates and payment structures under Agroforestry FT 8 are similar to other FTs under the Afforestation Scheme, and are paid on a fixed grant basis. Premiums will be paid for 10 years and will cover the cost of maintenance only. Support for the establishment of demonstration plots for research purposes may also be considered under FT 8.

DRAFT

Photo 16.1 Sheep grazing grass in a recently established agroforestry.

Section 16: **Seed Orchards (FT9)**

16.1 General

A seed orchard is a forest of selected individuals or families of trees which are isolated or managed so as to avoid or reduce pollination from outside sources, and is managed to produce frequent, abundant and easily harvested crops of seed. Typically seed orchards represent populations in which superior individuals (known as 'plus trees') are planted together so that mutual mating can occur. As such, they may be composed of vegetative copies of plus trees typically obtained by grafting (clonal seed orchards) or, generative progenies of plus trees (seedling seed orchards).

16.2 Specific requirements under Forest Type 9

Seed orchards will only be supported under this measure if they are compliant with Council Directive 1999/105/EC on the marketing of forest reproductive material as transposed into Irish law by SI No. 618/2002 - European Communities (Marketing of Forest Reproductive Material) Regulations 2002. It follows therefore that seed orchards must meet the minimum requirements for the approval of basic material intended for the production of reproductive material to be certified as either 'Qualified' or 'Tested'.

16.2.1 Purpose of seed orchard

Effective production of a large amount of high-quality forest seed. These are seed orchards with selected, or tested, plus trees for tree species with high economic importance in forestry.

Gene conservation for indigenous, scattered or endangered species. These are seed orchards established for the purpose of increasing the production of reproductive material from indigenous, scattered, or endangered tree species. For example, to increase the availability of reproductive material for native woodland establishment or conservation.

16.2.2 Type of seed orchard

Clonal seed orchards. This type of seed orchard is created from selected phenotypes (plus-trees) propagated vegetatively i.e. grafting, cuttings, layering, tissue culture etc.

Seedling seed orchard. Seed orchards raised from seedlings produced from selected phenotypes through natural or controlled pollination.

16.2.3 Layout

Applications shall include:

- a description of the species and genetic material including category, level of improvement in vigour and form from the genetic material.
- seed orchard site location and orientation, including distance to potential contaminating pollen, soil description and suitability.
- plot layout taking into account pollination requirements and outcrossing (where relevant), methodologies envisaged for encouraging seed production, rationale in support of establishing the seed orchard being proposed and any other information that describes the proposal.
- In the case of clonal seed orchards, the application should also include an indication of the number of genotypes, their origin and the number of ramets used per genotype. Regarding proposals for the establishment of breeding seedling orchards, the application should include an indication of the number of individual parent trees which contributed sets of progeny to the orchard and the number of trees per family in the orchard
- Details of crossing design and field layout.

16.2.4 Stocking levels

Typically a minimum stocking rate of 400 stems / ha is required. Alternate stocking rates may be considered on case by case basis.

16.2.5 Minimum area and width

The minimum plot area and width eligible under FT9 is 0.2 ha, respectively. The maximum eligible area for outdoor seed orchards is 5 ha and while technical approval for a larger area may be granted by the Department, available funding will be capped to a maximum of 5 ha.

16.2.6 Species

FT9 supports the establishment of seed orchards compliant with Council Directive 1999/105/EC for the following species:

- Pedunculate oak (*Quercus robur*)
- Sessile oak (*Quercus petraea*)
- Sycamore (*Acer pseudoplatanus*)
- Spanish chestnut (*Castanea sativa*)
- Sitka spruce (*Picea sitchensis*)
- Scots pine (*Pinus sylvestris*)
- Silver birch (*Betula pendula*)
- Downey birch (*Betula pubescens*)
- Common alder (*Alnus glutinosa*)

Seed orchards for other species may also be funded under the Scheme, on

application. This could include, for example, ash (*Fraxinus excelsior*) with demonstrated putative tolerance to the ash dieback pathogen *Hymenoscyphus fraxineus*, or seed orchards of native broadleaf species (e.g., *Sorbus aucuparia, Corylus avellana*) of indigenous origin where the purpose of establishment is gene conservation.

16.2.7 Site type

Ideally, sites should contain free-draining mineral soils and should have no requirement for additional drainage. In general, sites suitable for seed orchards should not require additional fertiliser for tree growth.

16.2.8 Planting

Planting should be carried out using pit planting, where possible. Alternative methods using an auger, invert mounding or ripping may be considered on a site by site basis.

16.2.9 Fencing

Seed orchard plots must be fenced with appropriate stock or deer-proof fencing or plants can be protected by tree shelters for the first 6 - 8 years.

16.2.10 Grant and premiums rates

Grant rates and payment structures under Seed Orchards FT 9 are similar to other FT's under the Afforestation Scheme, and are paid on a fixed grant basis. Premiums will be paid for 20 years.

Section 17: **Mapping Standards**

17.1 General

This section sets out the procedures and standards required when compiling and submitting maps in support of pre-approval and grant payment, under the terms and conditions of the Afforestation Scheme and other support schemes for the period 2023-2027.

Registered Foresters should ensure that all ground survey and boundary information is compiled and recorded correctly. Maps and plot information that do not comply with the standards outlined in this section will be returned to the Registered Forester, for correction which will result in delays in progressing the application and possible disruption to the applicant's plans and expectations.

The Department may, in future, update or amend these mapping standards by circular to specify further requirements or to provide further clarifications in relation to compiling and submitting maps in support of forestry licences or schemes (pre-approval and grant payments) funded under the 2023-2027 Forestry Programme.

17.1.1 Claims / Payments for the Afforestation Scheme and support schemes (2023-2027)

Payments for the Department's Afforestation Scheme and other support schemes (2023- 2027) will be based on either the **area claimed** as eligible for payment by the applicant (on Form 2, Form 3 or Form 4 and associated maps, as required under the particular scheme) or the **area determined** by the DAFM as eligible for payment, whichever is the lesser. The onus is therefore on the applicant and the applicant's Registered Forester to ensure that the area claimed is reflective of the area approved and planted.

The DAFM's computerised mapping and payment system (iFORIS) is used by the Department to capture a digital representation of the payment area based on the applicant's claim map (on Form 2, Form 3 or Form 4 and associated maps). Capturing the claim map in a digital form allows for the accurate measurement and calculation of the payment area. The process of electronically capturing either the pre-approval map or claim map is referred to as digitisation. The digitised area of a contract (i.e. the entire planted forest) is the sum of the areas of the individual forest plots (including biodiversity area(s)) comprising that Contract Number or planted forest area. For each plot contained in an application for payment, the digitised area is the entire area of the forest plot within the perimeter boundary of that plot measured by the Department's iFORIS system.

The **determined area** of a Contract Number or planted forest area is the sum of the areas, determined by the Department to be eligible for payment, of the individual forest plots comprising that Contract Number. The determined area is calculated by excluding any ineligible areas (e.g. power line corridors, rock, gas pipelines, ineligible areas of biodiversity (refer to section 6.2 of this document) greater than the allowed Afforestation Scheme threshold of 15%).

The **claimed area** is the total area of the forest plots specified by the applicant in the application as being claimed for the payment of an afforestation grant or premium payment. The claimed area is calculated by the applicant by deducting any part of the plot that is not eligible to receive grant and / or premium payments (e.g. power line corridors, rock, gas pipelines and ABEs greater than the allowed threshold of 15%) from the digitised area (refer to section 6.2 of this document).

Whichever is the lesser of the **claimed area** or the **determined area** is deemed to be the area eligible for payment, known as the **payable area**. This is the area on which payments of grants and / or premiums will be based. Where an area delineated as the payable area on a map submitted by the applicant differs from the area specified on the species table attached to a map or the area specified on the Form 2 or Form 3, the **lesser** of these areas will be deemed to be the area claimed by the applicant.

Where the area determined by the Department as the payable area is greater than the area claimed by the applicant, this is deemed to be an **under-claim**. In such cases, a new revised claimed area equal to the determined area can be submitted by the applicant **in respect of the following and all subsequent payments due under the contract**. The onus is on the applicant to satisfy him- / herself that the revised claim that s/he is submitting is correct. Any revised claimed area will then be deemed to be the payable area for the **remainder** of the grant and premium payments due under the contract. Note that this change, however, cannot be applied retrospectively and no back monies will be paid in respect of payments that were made or, in the case of annual premiums, were due to be paid before the revised claim is submitted.

Where discrepancies from the claimed area are discovered following a Department inspection, it may be necessary to adjust the amount of the grant and premium paid and to apply a penalty. Full details regarding penalties applicable for the over-declaration of area as well as the associated Appeals Procedures are available in the DAFM document Forestry Scheme Penalty Schedules 2023.

17.1.2 BISS Payments (2023 - 2027), Cross Compliance and Land Use Reconciliation

Following changes to EU Regulations, land which was afforested since 2009 and land which will be afforested in 2023 will be eligible to draw down the EU Basic Income Support for Sustainability (BISS) payment in 2023 provided that the afforested land meets the following requirements:

- The area must have been given a right to payment under the BPS/BISS Scheme;
- Farmers who wish to benefit from the BISS Payment on afforested land, must be the person or persons named as forestry scheme beneficiary, or joint beneficiary. This means that the farmer must be the person or persons eligible for payment of the forestry premium in the relevant year (please note this also applies to members of the same family);
- The afforested land meets all the requirements of the Afforestation Grant and Premium Scheme (including but not limited to the FEPS, the Native Woodland Establishment Scheme, Agroforestry or the Forestry for Fibre Scheme);
- The eligible Forestry parcels that are declared on BISS applications to activate entitlements will also be subject to conditionality requirements (see also BISS

Terms and Conditions available from the DAFM website);

- Farmers who plant land parcels in any given year (post 2023) under an Afforestation measure should declare the land as "Forestry" for that year (e.g. Forestry 2023 if planted in 2023 or Forestry 2024 if planted in 2024 etc.).

As an accredited EU paying agency, the Department of Agriculture, Food & the Marine is obliged to carry out checks and area controls on all applications. Beneficiaries of the Afforestation Scheme must ensure that afforested land entered into the scheme is not included, or is the subject of a claim, under any other ineligible area-based scheme administered by the Department.

Applicants and Registered Foresters should note that the Minister may impose adjustments, reductions in payments and / or penalties or may recoup money already paid, if an application under the Afforestation Scheme and / or any other forestry support scheme exceeds the area approved, and / or overlaps with an area that is the subject of a claim under another ineligible area-based scheme administered by the Department of Agriculture, Food and Marine or any other department (See also BISS Terms and Conditions available from the DAFM website).

17.2 Maps required for pre-approval and grant payment – legal basis

Section 5(2) and 6(2) of S.I.191 of 2017 set out the statutory requirements regarding the provision of certain map information to be submitted with any application for an afforestation or forest road licence approval (i.e. regardless of whether the application is a grant aided or non-grant aided approval). This information is essential in order to provide the Department with baseline environmental information and project design details, to inform its assessment of the application. The legislation requires that the applicant provides a map acceptable to the Minister, with the boundary of the land to which the application relates clearly delineated, and that the map includes the following features:

- public roads,
- forest roads,
- aquatic zones,
- wayleaves,
- archaeological sites or features,
- hedgerows, other relevant features,
- all internal plots, where applicable (for afforestation applications),
- the route of the proposed forest road (for forest road applications), and any other relevant features. (These relevant features include stacking areas, turntables, lay-bys, bridges, culverts or any internal borrow pits (existing or new) from which it is intended to source road construction materials).

This mandatory map information for afforestation and road applications is provided (where applicable and appropriate) to the Department on a Certified Species Map, a Fencing Map, Biodiversity Map (or 'BIO Map') and on a Current

Environmental and Habitats Map.

The following sections describe these maps and the associated mapping standards required by the Department for pre-approval and grant payment applications.

17.2.1 Maps required for afforestation pre-approval (Form 1)

The following maps are required:

- Certified Species Map
- Fencing Map
- Biodiversity Map (or 'BIO Map')
- Current Environment and Habitats Map (where an AA Pre-Screening Report is submitted)

The above maps must be drawn on a 1:5,000 scale map using a colour aerial photograph basemap or Tailte Éireann (formerly known as Ordnance Survey Ireland) base map. These PDF maps can be outputted from the DAFM's online mapping system, iFORIS Internet (iNET). A Tailte Éireann Survey map at a scale of 1:5,000 (using a basemap derived from the Tailte Éireann Prime2 mapping base e.g. from the MapGenie Premium Tailte Éireann digital mapping product) may be also be scanned and uploaded using iNET as part of the online application submission process. A Fencing Map is required to record the length and location of any proposed fencing requirement for the application area. The BIO map must be compiled to show the presence of existing biodiversity features, including relevant species and habitats, as well as identifying those areas where biodiversity will be enhanced. Both the Fencing and BIO maps are submitted or uploaded to the Department using iNET as part of the application submission process.

17.2.2 Maps required for afforestation grant payment applications (Form 2 and Form 3)

The following maps are required:

- Certified Species Map
- Fencing Map
- BIO Map
- Current Environment and Habitat Map

The Certified Species Map must record accurately all approved and planted areas (including bio plots) and plot boundaries as surveyed on-the-ground. Detailed mapping conventions are outlined below and must be strictly followed. The Form 2 and 3 BIO Map must record any revised details, if applicable (e.g. cultivation type, additional silt traps or firelines installed). The Fencing Map is required in support of any claim for erected fencing submitted as part of the Form 2 application.

17.2.3 Certified Species Map

Form 1 online submission

iNET can be used to map and submit new pre-approval (Form 1) applications online for the Afforestation Scheme and the Forest Road Scheme. iNET also facilitates the preparation of the required digital or hardcopy maps for submission of pre-approval applications by Registered Foresters. Once submitted, iNET can be used by the Registered Forester to track the progress of any pre-approval forestry application. iNET provides access for Registered Foresters to Department and Tailte Éireann map layers including colour orthophotography and satellite basemap imagery for the entire country. Areas designated for environmental reasons and other relevant spatial or mapping datasets (e.g. OPW flood maps, NPWS designations) have been made available as iNET map layers to facilitate the compilation of forestry scheme pre-approval and forestry licence applications.

Registered Foresters must have received training by the Department or other approved training prior to using the iNET online application system. Links to online training videos detailing the steps for submitting Afforestation and Forest Road pre-approval applications using iNET are available from the Departments website (see: iFORIS iNET). Previous mapping circulars and other content in relation to the production of BIO maps and Current Environment and Habitats Maps are also available from the Department's website (e.g. Circular 9, 2019; Circular 13, 2020; Circular 18, 2020: Forestry Circulars).

Registered Foresters using iNET to compile afforestation and road pre-approval applications must also attach a BIO Map, Fencing Map and, where relevant a Current Environment and Habitats Map with their pre-application submitted to the DAFM. These maps can be printed to PDF using iNET, saved locally and then subsequently annotated with text, graphics and image content using the PDF editing tools available from Adobe Acrobat Reader.

Form 2 and Form 3 online submission

iNET also allows for the online submission of Form 2 and Form 3 applications and facilitates uploading of the mandatory maps that support grant claims made by registered foresters and scheme applicants. Form 2 and Form 3 maps can be digitised using the tools available in the Department's iNET system (e.g. plot boundaries marked up using iNET digitising, GPS and buffering tools and, plot areas determined allowing for the generation of application map plot tables etc.).

Form 2 and 3 map outputs prepared using iNET must accord with the standards outlined below. Annotated PDF maps generated using the iNET can be uploaded for specific grant applications using iNET along with other mandatory forms and documents required for the scheme in question (e.g. the applicants' signed Form 2 or Form 3 application, land folios, provenance declaration forms). The most up-to-date orthophotography layers available from iNET must be used when generating PDF maps in support of Form 2 and Form 3 grant and premium claims.

17.2.4 Standardised map symbols, colours and text

The form of the map legend, types of mapping symbols and symbol colours illustrated in the example maps presented throughout this Section must be used for all maps submitted to the Department. All text, symbols and map annotations used on hardcopy maps must be clearly legible and easily discerned. If scanning printed hardcopy maps for uploading to iNET, care must be taken to ensure that the quality (i.e. resolution and clarity of information captured in the scanned document) of scanned images is such that all map content and relevant information is clearly legible.

Any relevant descriptive text or information that will facilitate the evaluation of the proposal for a licence or consent for grant aid must be included in the 'Remarks' section of the map legend. Registered Foresters must ensure that the BIO Map identifies the access routes / points to and from the proposed planting area using the appropriate access symbols. This will aid the Forestry Inspector (or ecologist) to gain access to the site where field inspection is required. Applicants and Registered Foresters should also be aware that maps submitted in support of grant applications will be forwarded to relevant referral bodies (e.g. NPWS, Local Authorities, Inland Fisheries Ireland, An Taisce) and will be made available to the public or other interested parties through the normal public consultation process via the Forestry Licence Viewer or *via* Access to Information on the Environment (AIE) requests or Freedom of Information (FOI) requests.

Template legends for the Certified Species Map, the Fencing Map and the BIO Map and the Current Environment and Habitat Map are available from the Department's website (www.agriculture.gov.ie/) or upon request by email to the approval section of the Forestry Division (ForestryAppEnq@agriculture.gov.ie). These template legends identify the required format for map legends and associated tables and must be used when submitting maps to the Department. Failure to observe Forestry Division mapping conventions which require the use of standardised, legible mapping symbols, colours and text will result in a Further Information Request (FIR) for a new revised map(s) and will likely delay the assessment and evaluation of the application.

17.2.5 Mapping plantation and plot boundaries

Registered Foresters must certify all boundaries and areas submitted for approval and grant payment. A thin red line must be used on the Certified Species Map to delineate all plot and plantation boundaries. Plots must be numbered sequentially in red. The rules regarding the placement of plot boundary lines are summarised below:

- If the boundary of a plot is a visible feature on the orthophoto map or Tailte Éireann map (e.g. field boundary), the red line is drawn to the centre of this feature.
- If the feature also happens to be an exclusion, then the red line must be drawn to the edge of this feature (e.g. existing woodland, lake or water body).
- If a proposed planting area is split in two by a county boundary, townland boundary, DED boundary, an ESB line or other mappable exclusion a plot line must be drawn accordingly and the two plots created attributed using different plot

numbers (i.e. each plot must have a unique plot number).

- Visible features on the colour orthophotograph basemaps should be utilised when surveying external / internal forest and plot boundaries. The exact position of all undefined internal plot boundaries or the centre line of proposed forest roads may be measured on-the-ground using a GNSS (Global Navigation Satellite System) or DGNSS (Differential Global Navigation Satellite System). This applies to pre-approval applications (Form 1 maps) as well as Form 2 and Form 3 claim maps (where applicable).

Mapping undefined boundaries

In general, an undefined boundary will not be a visible or annotated feature on either an orthophoto map or any other small scale (e.g. a 1:5000 Tailte Éireann) map.

For all Form 2 and Form 3 payment claims, the position of external undefined plantation boundaries must be recorded on-the-ground with the use of a GNSS (Global Navigation Satellite System) or DGNSS (Differential Global Navigation Satellite System) receiver. GNSS survey points should be recorded at the beginning and end of the relevant undefined boundary and at any position along the boundary where there is a change in the external boundary (i.e. the boundary fence) direction. The GNSS survey points for the undefined external boundary must be numbered sequentially, annotated on the Form 2 / Form 3 claim map, and the related Easting and Northing Irish Transverse Mercator (ITM) coordinates either noted on the map legend or submitted together with the Certified Species Map as a map attachment (for an example, see Map 17.1). The use of a GNSS receiver for locating and plotting ESB line exclusion corridors or other exclusions is also encouraged.

For pre-approval (Form 1) applications for the Afforestation Scheme and other support schemes, submission of GNSS coordinate information for external undefined boundaries is not a mandatory requirement. However, the Department encourages applicants and their registered forester agents to submit coordinate data to the Forest Service for pre-approval applications which comprised or undefined boundaries.

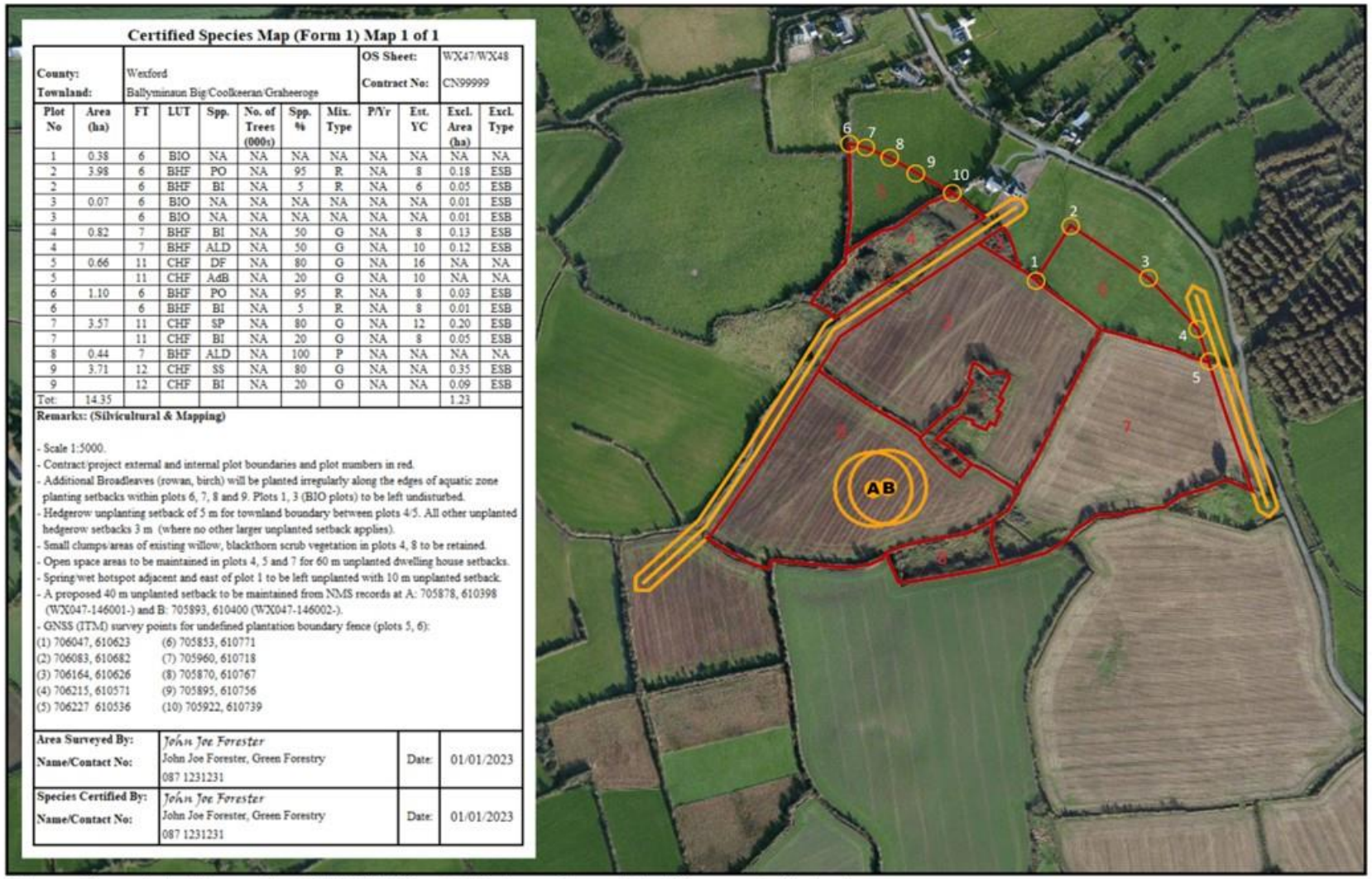
Note: In situations where an external undefined boundary represents a straight line between two clearly defined landmarks visible on the hardcopy maps (e.g. the corners of a field or a road junction), the undefined boundary can be easily plotted and the map annotated without recourse to the use of GNSS receiver. However, where no GNSS coordinates have been provided for a Form 2 or Form 3 map (or for a Felling Licence application map) and if there is any uncertainty surrounding the location of an internal or external undefined boundary, a revised map based on a GNSS survey of boundaries together with the GPS coordinates of the survey points may be requested by the Department.

Use of Global Navigation Satellite Systems / Differential Global Navigation Satellite Systems (GNSS / DGNSS)

For all Form 2 and Form 3 applications that include undefined external boundaries, the undefined external boundaries must be walked and mapped using a GNSS / DGNSS receiver (i.e. along the edge of the planted forest boundary at the fence line).

Capturing an offset(s) using a DGNSS receiver is also permitted when surveying undefined boundaries.

iNET provides a facility for displaying GNSS / DGNSS waypoints collected in the field. The Easting and Northing Irish Transverse Mercator (ITM) coordinates of undefined boundary vertices can be plotted on the iNET map screen to facilitate ditigising or to generate PDF or print hardcopy paper maps that include the plotted waypoints captured during a GNSS / DGNSS survey.



Certified Species Map (Form 1) Map 1 of 1

County:	Wexford	OS Sheet:	WX47/WX48
Townland:	Ballyminaun Big/Coolkeeran/Graheeroge	Contract No:	CN99999

Plot No	Area (ha)	FT	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
1	0.38	6	BIO	NA	NA	NA	NA	NA	NA	NA	NA
2	3.98	6	BHF	PO	NA	95	R	NA	8	0.18	ESB
2		6	BHF	BI	NA	5	R	NA	6	0.05	ESB
3	0.07	6	BIO	NA	NA	NA	NA	NA	NA	0.01	ESB
3		6	BIO	NA	NA	NA	NA	NA	NA	0.01	ESB
4	0.82	7	BHF	BI	NA	50	G	NA	8	0.13	ESB
4		7	BHF	ALD	NA	50	G	NA	10	0.12	ESB
5	0.66	11	CHF	DF	NA	80	G	NA	16	NA	NA
5		11	CHF	AdB	NA	20	G	NA	10	NA	NA
6	1.10	6	BHF	PO	NA	95	R	NA	8	0.03	ESB
6		6	BHF	BI	NA	5	R	NA	8	0.01	ESB
7	3.57	11	CHF	SP	NA	80	G	NA	12	0.20	ESB
7		11	CHF	BI	NA	20	G	NA	8	0.05	ESB
8	0.44	7	BHF	ALD	NA	100	P	NA	NA	NA	NA
9	3.71	12	CHF	SS	NA	80	G	NA	NA	0.35	ESB
9		12	CHF	BI	NA	20	G	NA	NA	0.09	ESB
Tot:	14.35									1.23	

Remarks: (Silvicultural & Mapping)

- Scale 1:5000.
- Contract/project external and internal plot boundaries and plot numbers in red.
- Additional Broadleaves (rowan, birch) will be planted irregularly along the edges of aquatic zone planting setbacks within plots 6, 7, 8 and 9. Plots 1, 3 (BIO plots) to be left undisturbed.
- Hedgerow unplanting setback of 5 m for townland boundary between plots 4/5. All other unplanted hedgerow setbacks 3 m (where no other larger unplanted setback applies).
- Small clumps/areas of existing willow, blackthorn scrub vegetation in plots 4, 8 to be retained.
- Open space areas to be maintained in plots 4, 5 and 7 for 60 m unplanted dwelling house setbacks.
- Spring/wet hotspot adjacent and east of plot 1 to be left unplanted with 10 m unplanted setback.
- A proposed 40 m unplanted setback to be maintained from NMS records at A: 705878, 610398 (WX047-146001-) and B: 705893, 610400 (WX047-146002-).
- GNSS (ITM) survey points for undefined plantation boundary fence (plots 5, 6):

(1) 706047, 610623 (6) 705853, 610771
(2) 706083, 610682 (7) 705960, 610718
(3) 706164, 610626 (8) 705870, 610767
(4) 706215, 610571 (9) 705895, 610756
(5) 706227 610536 (10) 705922, 610739

Area Surveyed By: Name/Contact No:	John Joe Forester John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023
Species Certified By: Name/Contact No:	John Joe Forester John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023

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Unauthorized reproduction is not permitted. This map is for Forest Service related use only.

17-Apr-2023 Contract: **CN92704** Scale 1:5000

Map 17.1 Example of an Afforestation Scheme Form 1 Certified Species Map, using a PDF generated using iNET.

17.3 Compiling the Certified Species Map plot table

In addition to mapping plantation and plot boundaries on the Certified Species Map, a plot table must be compiled and attached to the map submitted in support of a licence or scheme pre-approval (Form 1) and for any subsequent payment claims (Form 2, Form 3). The plot table summarises the area and species information for each of the plots making up the proposal.

A template plot table is available from the Department's website (www.agriculture.gov.ie/) or upon request by email to the approval section of the Forestry Division (ForestryAppEng@agriculture.gov.ie) - this template must be used when preparing the Certified Species Map.

An example of a completed plot table is presented in Table 17.1 (also see Map 17.1 for an example of a completed Certified Species Map). A worked example explaining how to deal with different types of ineligible exclusion areas is also provided below.

Table 17.1 An example of a completed Certified Species Map plot table.
Notes: (i) Values for '*P/Yr*' and '*No. of Trees (000s)*' fields are required for Certified Species Maps submitted in support of Form 2 and Form 3 grant claims only. (ii) '*NA*' should be used to fill in the plot table in all situations where the information required is not applicable.)

Plot No	Area (ha)	FT	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
1	1.11	6	BHF	SYC	NA	95	P	NA	8	0.50	U/P
1		6	BHF	AdB	NA	5	P	NA	6	0.10	U/P
2	1.97	6	BHF	ALD	NA	100	P	NA	12	0.00	NA
3	3.40	12	CHF	SS	NA	80	I	NA	22	0.00	NA
3		12	CHF	BI	NA	20	I	NA	12	0.00	NA
4	3.97	11	CHF	DF	NA	80	P	NA	18	0.00	NA
4		11	BHF	AdB	NA	20	P	NA	6	0.00	NA
5	2.78	12	CHF	SS	NA	80	I	NA	22	0.49	ESB
5		12	CHF	BI	NA	20	I	NA	12	0.12	ESB
6	0.52	6	MHF	PO	NA	80	I	NA	8	0.47	ESB
6		6	MHF	SP	NA	20	I	NA	10	0.05	ESB
7	0.72	12	BIO	NA	NA	NA	NA	NA	NA	NA	NA
8	1.52	12	CHF	SS	NA	80	I	NA	22	0.00	NA
8		12	CHF	BI	NA	20	I	NA	12	0.00	NA
9	0.71	6	MHF	PO	NA	90	G	NA	8	0.22	ESB
9		6	MHF	SP	NA	10	G	NA	10	0.02	ESB
10	1.60	6	MHF	PO	NA	90	G	NA	8	0.22	ESB
10		6	MHF	SP	NA	10	G	NA	10	0.02	ESB
Tot:	18.30									2.21	

Details regarding each parameter required in the Certified Species Map are as follows.

- **Plot Number ('Plot No.'): Section 5** provides information on the minimum areas and widths for conifer and broadleaf plantations and plots. All areas of plot size (meeting minimum plot area thresholds) must be assigned a sequential plot number. One plot can only be assigned one Forest Type (FT).
- **Claimed area ('Area (ha)'):** This refers to the area in hectares for which an applicant has applied for pre-approval or payment (see also **Section 17.1.1**). All numeric area values in the Certified Species Map plot table, including claimed area, must be reported to two decimal places (e.g.

'2.45', '1.77'). Registered Foresters must ensure that the total area claimed is equal to the sum of plot areas comprising the application. The claimed area does not include areas that are ineligible for grant or premium payment. The claimed area must not incorporate ineligible (non-grant aided) exclusions. In iNET, the claimed area is referred to as the 'Net Area' in the plot summary table (i.e. the area of plot(s) or the total plantation area net of exclusions).

- **Forest Type ('FT'):** The FT is the Forest Type which best describes the profile of the plot(s), and is used to determine the grant and premium payment rate under the Afforestation Scheme. For FT definitions, see **Table 4.1**. The Certified Species Map for all FTs must reflect at plot level the area claimed for grant payment.

  In relation to FT1 the relevant scenario (as per the Native Forest Framework) should be noted in the map legend for each plot, to indicate the native forest type being proposed. For example, 'Scenario 1' equates to Oak-Birch-Holly Forest, while 'Scenario 4' equates to Alder-Oak-Ash Forest.

  Similarly for FT2, FT3, F4 where native forest planting forms part of planting making up the application the relevant Native Forest Framework scenario should recorded alongside each plot.
- **Land Use Type ('LUT'):** Each plot in the plot table must have one of eight broad land use type categories assigned to it, based on the definitions set out in **Table 17.2**.

Table 17.2 Land Use Types.

Land Use Type (LUT)	Definition	FT definition
CHF.	Conifer High Forest	FTs 11,12
MHF	Mixed High Forest	All broadleaf / conifer nurse mixtures in FTs 1-10
BHF	Broadleaf High Forest	Broadleaf FTs 1-10, where plots are planted pure
BURNED	Burned forest	LUT assigned to areas damaged by fire
BLOWN	Blown forest	LUT assigned to areas damaged by wind
FELLED	Felled forest	LUT assigned to felled areas
BIO	Biodiversity plot / area	Denotes identified biodiversity area of plot size
BCF	Broadleaf Coppice Forest	Pilot grant--aid sites where coppicing is carried out, i.e. willow

- **Approved Species ('Spp.'):** The main species by area must be listed in the plot table for every plot. All broadleaves not of plot size or minimum width must have an area recorded against them in the species table and must be recorded as 'Additional Broadleaves' (ADB) per plot. A list of approved conifer and broadleaf species, their botanic names and associated abbreviations are listed in Tables 7.3 and 7.4.
- **Number of trees planted ('No. of Trees (000s)') (Form 2 only):** In the case of maps supporting Form 2 applications, the total number of trees planted in each plot must be recorded in the plot table, by species. Provenance Declaration Forms submitted with the Form 2 application must support the number of trees planted and listed in the plot table.
- **Species percentage ('Spp. %'):** All species listed in the plot table must have a percentage plot area associated with them. Species with the largest percentage should be recorded first, and the total percentage figures in a given plot should add up to 100%. In broadleaf / conifer nurse mixtures, the broadleaf species will be recorded first, as this species will form the main species in the final crop. Where broadleaf mixtures are planted, the main species by area must be recorded first

(Table 18.3).

Table 17.3 Species mixture percentage examples.

Species in mixture	Canopy area breakdown	Planting pattern
Oak / conifer nurse species	90% oak and 10% conifer / broadleaf nurse	10 rows of oak and 1 nurse line
Beech / conifer nurse species	90% beech and 10% conifer broadleaf nurse	10 rows of oak and 1 nurse line

Table 17.4 Mixture types.

Mixture type	Definition	Examples
Row **(R)**	Where nurse species planted in rows / lines	PO & BI, PO & ALD, PO & SP, PO & HL, BE & SP
Intimate **(I)**	Where nurse or second species not planted in rows but planted evenly throughout the plot	80% SS & another broadleaf species (NB, this mixture can also include broadleaves planted in groups)
Group **(G)**	Where trees are planted in 'small' groups but are less than plot size of 30 m x 40 m	Additional broadleaves or where a single named broadleaf species is planted in groups
Pure **(P)**	All plots where there is only one main species	

- **Mixture type ('Mix. Type'):** Table 17.4 sets out the species mixture type codes, their associated definitions, and examples of species mixtures that should be used to populate the Mixture Type field in the plot table.
- **Planting year ('P/Yr') (Forms 2 and 3 only):** Planting year is defined as the year in which the first growing season occurs. For example, a tree planted in February 2023 will have a planting year of 2023. A tree planted in November 2023 will have a planting year of 2024 and not 2023. Note that, for administrative and reporting purposes, the Departments annual planting statistics will continue to be based on the total area submitted for grant payment in any given year. If planting in 2023: planting before the 1st of June is P2023 and planting after the 1st of June is P2024.
- **Estimated Yield Class ('Est. YC'):** Registered Foresters should estimate the Yield Class (m^3 / ha / year) for each species. Values for estimated Yield Class should be realistic and should be based on an assessment of the plot to be planted (e.g. soil fertility, exposure, dominant vegetation, etc.) and knowledge of the same species growing on geographically adjacent, similar site types.
- **Area of exclusion(s) ('Excl. Area (ha)'):** Any exclusion area(s) which result in the gross area being reduced to determine the claimed area must be recorded in the plot table (e.g. unplantable areas, old buildings, hard surface areas, rock outcrops, etc.). Table 17.5 identifies the type of features for which exclusion areas must be recorded against each plot, and the corresponding abbreviations to be used.

  The example plot table presented in the worked example below illustrates how the areas for two different exclusions types (ESB and unplantable areas) are recorded. The reader is

referred to **Section 6** for details regarding the eligibility (or otherwise) of certain exclusion area types for grant and premium payments (i.e. as ABEs).

- **Exclusion type ('Excl. Type'):** Any relevant exclusion that results in the claimed area being reduced must be recorded along with an associated area in the Certified Species Map plot table. Where an area proposed for planting is split by an ESB line or other exclusion such as a gas pipeline, the area must be attributed different plot numbers either side of the exclusions (see Map 17.1 for an example of how an ESB corridor exclusion should be mapped).

In the case of ESB exclusions, the Department will provide a letter stating the area of the unplanted power line corridor, and the applicant can then apply to the ESB directly for compensation (see **Section 7**). The appropriate unplanted corridor widths for different overhead power lines voltages are set out in **Table 7.1**.

The reader is referred to the **Section 6** for further information regarding required unplanted setbacks / corridor widths for various features such as public roads, dwelling houses, gas pipelines, wind turbines, water abstraction points etc.

Exclusion areas which satisfy the 15% ABE criteria and which are eligible for grant and premium payment (e.g. aquatic buffer zones) should not be recorded as an exclusion or exclusion type. Features which may be incorporated as part of the ABE allowance but which are not eligible for grant or premium payments must be excluded from the plot area.

Table 17.5 Exclusion abbreviations and associated descriptions.

Exclusion abbreviations	Exclusion area description
ESB	Power line corridors (10 kV to 400 kV)
GAS	Gas pipeline
U/P	Unplantable areas
Rock	Shallow, rocky soils Rock and scree
Water	Aquatic zones (area occupied by river or lake)
P-Forest	Plantation forest comprising conifer high forest or broadleaf high forest, including newly planted areas with conventional stocking densities planted under the current/previous Afforestation Schemes.
N-Forest	Non-plantation forest / non-grant aided forest
Building	Dwelling house / associated building setback area
ROW	Right-of-way held by third party
Turb	Area with turbary rights held by a third party
Graz	Area with grazing rights held by a third party
W-Mains	Major water mains
Road	Public road
Scrub	Scrub (in excess of ABE threshold)
Other	Other exclusion

17.4 Certified Species Map Plot Table - a worked example

The table presented below provides an example of how the plot table of a Certified Species Map should be structured (i.e. an Afforestation Form 1 map example). The worked examples for Plots 1 and Plots 5 and 6 show how two different types of exclusions (unplantable areas, ESB power line exclusions) should be treated.

- **Unplantable areas:** When first surveyed, the gross area of Plot 1 is 1.71 ha. However, following the field survey of the site by the Registered Forester, a number of smaller unplantable and unmappable areas, amounting to 0.6 ha, were found to be overlapping the plot area. The eligible area submitted for pre-approval or eligible for payment is therefore 1.11 ha and is recorded as per the table below. The unplantable exclusion areas associated with the plot species (0.5 ha for sycamore and 0.1 ha for the additional broadleaf (ADB) area), are also recorded in the plot table.

Plot No	Area (ha)	FT	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
1	1.11	6	BHF	SYC	NA	95	P	NA	8	0.50	U/P
1		6	BHF	AdB	NA	5	P	NA	6	0.10	U/P

- **ESB exclusions:** Both Plot 5 (2.78 ha) and Plot 6 (0.52 ha) are separated by a non-grant aided power line corridor. As per mapping conventions, both plots are mapped to the edge of the non-grant aided corridor and numbered separately. As the area calculated does not include the corridor, the claimed area is not reduced. However, in order to determine the area for ESB compensation, the area of the corridor is recorded in the plot table against the species planted in the two plots. Thus, the total corridor area and payable compensation is 0.61 ha for Plot 5 and 0.52 ha for Plot 6.

Plot No	Area (ha)	FT	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
5	2.78	12	CHF	SS	NA	80	I	NA	22	0.49	ESB
5		12	CHF	BI	NA	20	I	NA	12	0.12	ESB
6	0.52	6	MHF	PO	NA	80	I	NA	8	0.47	ESB
6		6	MHF	SP	NA	20	I	NA	10	0.05	ESB

A c ovided in Table 17.1.

17.5 Updating plot information (Form 2, Form 3 and Management Plans)

Any area or species changes that may have occurred in the plantation either at Form 2 or Form 3 stage must be reflected in the revised Certified Species Map and plot table submitted (see also Section 17.1). Plantations that have been reconstituted must have the claim map updated to reflect the plot boundaries and species of those areas reconstituted. Plots that have been reconstituted must also have a revised planting year recorded.

All applicants are expected to write to and notify the Department of any change to plot boundaries (e.g. due to house building or the removal of a grant-aided forest area) during

the time since submission of the Form 3 Certified Species Map. Any such boundary changes must be reflected in a revised Certified Species Map submitted to the Department. The area removed from the grant aided plantation should be clearly indicated on the map, and plot boundaries amended to reflect any changes since the original afforestation grants were paid.

Any changes to plot details or plantation boundaries must also be updated on the Certified Species Map submitted with the Management Plan required at the end of Year 11. Failure to alert the Department to changes to the plantation area may result in financial and legal sanctions being taken by the Department against an applicant, including the recouping of grant and premium payments associated with the plantation. Forest owners must inform the Department in advance before any area of a grant-aided plantation is removed.

17.6 Fencing Map

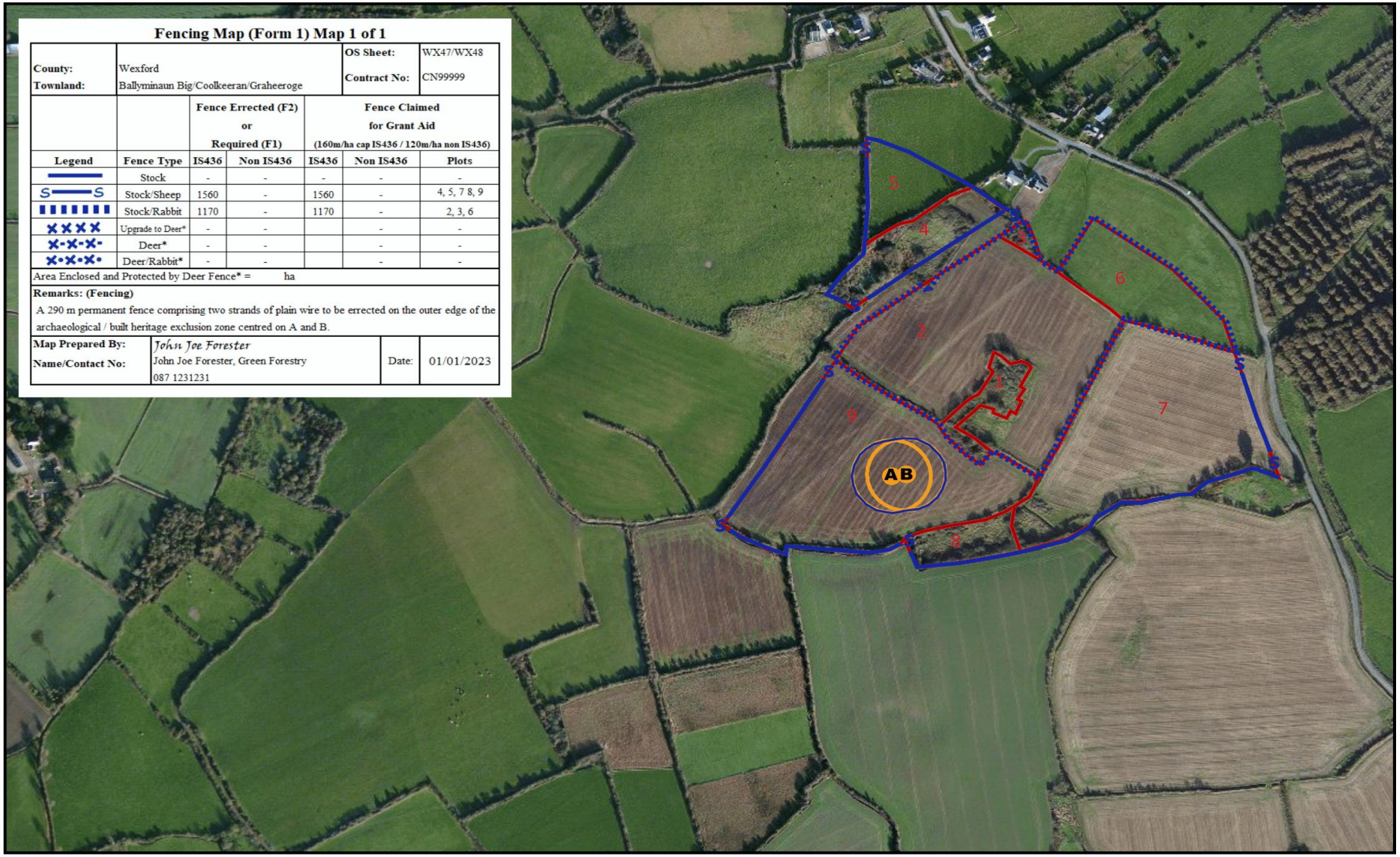
A fencing map is required to support pre-approval afforestation (Form 1) applications and grant payment (Form 2) applications, in relation to proposed and erected fencing. Annotations and symbols for proposed and erected fencing should be added to the Certified Species Map as per the example below (Map 17.2). Adobe Acrobat Reader can be used to markup the PDF map of digitised plots generated from iNET. The total length in metres of each fencing type and the plots around which fencing is proposed (Form 1) or erected (Form 2), should be noted in the Fencing Map legend. Compliance (or non-compliance) of the fencing erected with fencing standard IS 436:2007 should be clearly indicated on the Fencing Map legend.

An example of a Fencing Map prepared using a colour orthophoto PDF map generated from the Department's iNET system at a scale of 1:5,000 is presented below in Map 17.2.

A template for the Fencing Map legend is available from the Department's website (www.agriculture.gov.ie/) or upon request by email to the approval section of the Forestry Division (ForestryAppEnq@agriculture.gov.ie). This legend template should be used with any Fencing Map submitted in support of a Form 1 or Form 2 application.

Note, all deer fencing must be approved in advance. Only sheltered, fertile sites and where at least 70% of the area enclosed by the deer fence comprises broadleaf species and species in the categories FT1 to FT11, are eligible.

DRAFT



Fencing Map (Form 1) Map 1 of 1

County:	Wexford	OS Sheet:	WX47/WX48
Townland:	Ballyminaun Big/Coolkeeran/Graheeroge	Contract No:	CN99999

		Fence Errected (F2) or Required (F1)		Fence Claimed for Grant Aid (160m/ha cap IS436 / 120m/ha non IS436)		
Legend	Fence Type	IS436	Non IS436	IS436	Non IS436	Plots
	Stock	-	-	-	-	-
S——S	Stock/Sheep	1560	-	1560	-	4, 5, 7 8, 9
	Stock/Rabbit	1170	-	1170	-	2, 3, 6
✕✕✕✕	Upgrade to Deer*	-	-		-	-
✕-✕-✕-	Deer*	-	-		-	-
✕•✕•✕•	Deer/Rabbit*	-	-		-	-

Area Enclosed and Protected by Deer Fence* = ha

Remarks: (Fencing)

A 290 m permanent fence comprising two strands of plain wire to be errected on the outer edge of the archaeological / built heritage exclusion zone centred on A and B.

Map Prepared By: Name/Contact No:	John Joe Forester John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023

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18-Apr-2023

Scale 1:5000

Map 17.2 Example of an Afforestation Scheme Form 1 Fencing Map, based on output generated from iNET.

17.7 Biodiversity Map (BIO Map)

The submission of a BIO Map is required at pre-approval (Form 1) stage and at 1st instalment (Form 2) stage for the Afforestation Scheme and the Forest Road Scheme. As well as the listed mandatory features below, it is important that this map shows the presence of any existing biodiversity features clearly (including relevant species and habitats), as well as those areas where biodiversity will be enhanced.

The features recorded on the BIO Map must be consistent with the requirements detailed the terms and conditions of the Afforestation Scheme and other documents relating to environmental issues for example the Environmental Requirements for Afforestation. Due regard must be given to demonstrating the environmental suitability of the proposal in terms of maintaining and enhancing biodiversity. Where the appropriate referral prerequisites are met, the BIO Map will be sent to statutory and non-statutory referral bodies (e.g. NPWS, Inland Fisheries Ireland, An Taisce, Local Authorities). The BIO Map will also be made available to the public or other interested parties through the public consultation process via the Forestry Licence Viewer.

The following features must be included (if present) on the BIO Map:

- All retained habitats, open spaces, and linear and point features presented as the proposal's Areas for Biodiversity Enhancement. These features must be clearly identified on the BIO Map and clearly labelled in the accompanying legend. See Map 1.4 for an example of a BIO Map. ABEs can include, *inter alia*, hedgerows, pockets of high forest trees less than 0.1 ha in area, point features such as single open-grown mature or veteran trees, aquatic buffer zones, archaeological exclusion zones, dwelling house or building setbacks, etc. See also **Section 6** for details regarding ABE eligibility.
- Hedgerows (within the proposed project area) must be identified on the pre-approval application BIO maps.
- Linear features should be labelled and point features indicated by a numbered cross (e.g. '+1').
- Aquatic buffer zones, archaeological exclusion zones, public road setbacks and dwelling setbacks should be clearly identified on the map and legend. The iNET buffer tool is useful for establishing the area and plotting the extent of buffer zones or other environmental setbacks.
- The total ABE area (including linear, point and area-based features) and biodiversity plots in the application must be included in the 'Remarks' section of the BIO Map legend. Providing total ABE area ensures that the correct claim is being made and that the application plot table considers areas of ABE in excess of 15% that are ineligible for grant and premium payments.
- Designated sites adjoining or overlapping proposed planting areas must be clearly identified, using diagonal lines or cross hatching, and labelled in the legend using the designation name and site code.
- Archaeological sites should be recorded in the legend, with the monument type (e.g. a ringfort) and the Record of Monuments and Places Number (e.g. LA 034-009) also noted, where known. This information is available in the NMS layer available from the iNET map viewer for most archaeological monuments. Monuments should be identified on the map with a numbered prominent red cross as shown in Map 17.3.

- Vehicle and pedestrian access to the site must be identified (i.e. public roads, private roads, access tracks and where applicable existing forest roads).
- Any planned (Form 1) or existing firelines (Form 2) should be labelled, where required.
- The type and direction of cultivation within each plot, together with the location of sediment traps, should be annotated on both the map and legend. The existing field drainage network on the site (i.e. relevant watercourses) should be identified on the BIO map following field inspection.
- Exclusion areas (e.g. unplantable areas, rock outcrops) should be identified and clearly labelled.
- Hazards (e.g. ESB lines, steep slopes, rough terrain) should be identified.
- The 'Remarks' section of the BIO Map legend should be used to identify any relevant features or additional information that will help in the evaluation of the application. Additional legend text should also be included in situations where the available space on the map is insufficient to include all the relevant details regarding biodiversity measures / features.

An example of a BIO Map printed to PDF from the Department's iNET system is presented in Map 17.3. The colour schemes used in the example must be used for all BIO Maps submitted. Additional colours may be used to identify other features not listed in the example.

A template for the BIO Map legend is available from the Department's website (www.agriculture.gov.ie/) or upon request by email to the approval section of the Forestry Division (ForestryAppEnq@agriculture.gov.ie). This legend template should be used with any BIO Map submitted in support of Form 1 or Form 2 application.

17.7.1 Identifying, mapping and recording ABE features

Section 6 sets out criteria for ABE eligibility, and lists various features, habitats (including woody habitat) and open spaces that are eligible as ABEs.

The *Environmental Requirements for Afforestation (2023)* stipulate that up to 15% of the forest area may be treated with particular regard to biodiversity. In sites less than 10 hectares in area, the open space and retained habitat element of ABEs should be designed in conjunction with neighbouring land use and may be reduced. The area occupied by linear features (e.g. hedgerows, public road setbacks, etc.), point features (e.g. single open-growth trees) and by biodiversity plots are eligible for grant and premium payments up to a maximum of 15% of the area of the plantation.

A BIO Area Table, which includes the estimates of the area of the various features / areas / plots presented as ABEs, must be attached to the BIO Map for all Form 1 and Form 2 applications. The BIO Area Table must also include an estimate of the total area (ha) of all of these features / areas / plots within the application. All of the features / areas / plots presented as ABEs in support of grant aid must be clearly identifiable and verifiable on-the-ground.

Tables 2 and **3** in the Environmental Requirements for Afforestation list the eligibility of various features as ABEs. The terms used in these tables should also be used in the BIO Area Table.

Table 18.6 provides a ready reckoner to facilitate the estimation of BIO areas. For example,

a 600m length of stream running along the boundary of a plantation with a 15m unplanted setback would amount to approximately 0.90 ha of an open space ABE.

Table 17.6 Area ready--reckoner for biodiversity features (rideline road setback, aquatic buffer zone, hedgerow setbacks). Equivalent area (in hectares) calculated by multiplying the length of the feature (top row) by its width (outside columns).

	20 m	30 m	40 m	50 m	60 m	70 m	80 m	90 m	100 m	110 m	120 m	130 m	140 m	150 m	160 m	170 m	180 m	190 m	200 m	300 m	400 m	500 m	
3 m	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.09	0.12	0.15	3 m
5 m	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.15	0.20	0.25	5 m
7 m	0.01	0.02	0.03	0.04	0.04	0.05	0.06	0.06	0.07	0.08	0.08	0.09	0.10	0.11	0.11	0.12	0.13	0.13	0.14	0.21	0.28	0.35	7 m
10 m	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.30	0.40	0.50	10 m
15 m	0.03	0.05	0.06	0.08	0.09	0.11	0.12	0.14	0.15	0.17	0.18	0.20	0.21	0.23	0.24	0.26	0.27	0.29	0.30	0.45	0.60	0.75	15 m
20 m	0.04	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	0.24	0.26	0.28	0.30	0.32	0.34	0.36	0.38	0.40	0.60	0.80	1.00	20 m

A buffering tool has been recently added to iNET which can also be used to facilitate the calculation of unplanted or setback areas associated with linear (public roads) or point (e.g. national Monument) features. An example of the BIO Area Table with ABE features and ABE plots by plot number is provided in Table 17.7. Regarding aquatic setbacks, amongst other factors, their width depends on slope and soil type. Therefore, it is conceivable that an aquatic zone setback may vary in width along its length as the slope and soil type changes. The actual setback prescribed should be clearly marked to indicate which setbacks apply along a given section of waterway.

Table 17.7 An example of a completed BIO Map area plot table.

BIO MAP (Form 1) Map 1 of 1			
Contract No.:	CN80001	**OS Sheet:**	WX46
County:	Wexford		
Townland:	Woodgraigue / Scurloguebush		
Plot Nos.	**ABE Type**	**Length (m)**	**ABE area for payment purposes (ha)**
1,2,4	Water setback, 10 m wide, with 20% setback planting	650	(650 m x 3 m) / 10,000 = 0.20
1,2,3,4,5,6,8,9,10	Narrow hedgerows, retain, no setback	1,950	0.00
1,8	Wider hedgerows edge side Plot 1 & north edge Plot 8	450	(450 m x 3 m) / 10,000 = 0.14
7	ABE Plot 7	N/A	0.72
6	Archaeological setback for ringfort, 20 m	N/A	0.10
10	Public road setback (10 m open + 10 m edge planting)	280	(280 m x 5 m) / 10,000 = 0.14
9,10	Utilised building setback for dwelling	N/A	0.10
4	Operational area: access track, 10 m width	230	0.23
	Total ABE area for Payment Purposes		**1.63 ha**
Map Prepared By:	John Joe Forester		
Name/Contact No:	John Joe Forester, Green Forestry 087 1231231		12/12/2023

Note that when estimating ABE areas for grant payment purposes along linear features for example, an account of future canopy width at canopy closure (i.e. of the mature forest) should be factored into the calculation of the associated ABE area. Canopy width is a constant 5m. Buffer planting can account for 20% of the width of the setback width. The calculation of the ABE area for payment purposes should be accurately estimated and this should be detailed in in Table 17.7 using the sample calculation below:

Setbacks applied to the public road and dwellings for the ABE area calculation for payment purposes should also be detailed in the map label as illustrated in Table 18.7.

17.7.2 Mapping ABE plots

An ABE of plot size should be mapped and recorded as a separate plot in the Certified Species Map legend. Biodiversity plots must have a minimum width of 20 metres. The abbreviation 'BIO' should be used on map legends. The Forest Type (FT) adopted for the purposes of grant and premium payments should be that of the largest planted FT area.

17.7.3 Claim reductions for plantation ABE areas in excess of allowable scheme thresholds

Where ABEs or other unplanted areas add up to more than 15% of the total area, the following calculation will be applied (see also **Section 6**):

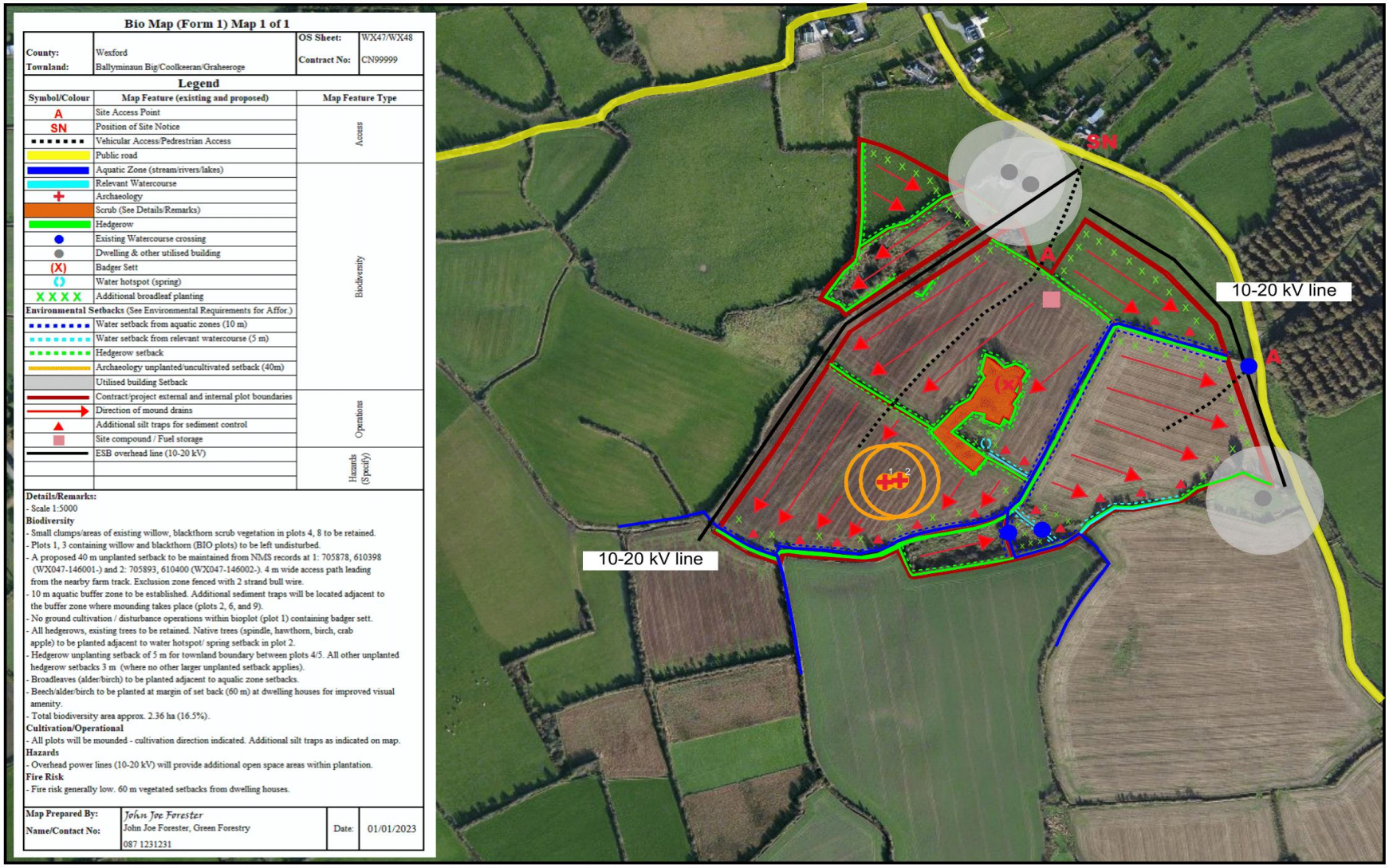
Claimed area = Actual planted area X (100 / 85)

For example, a site having a gross area of 18 hectares is planted following a grant of approval. It contains the following ABE features and associated ABE areas:

Hedgerows, scrub and setbacks	0.70 ha
Open space (access management track)	0.23 ha
Aquatic buffer zone	0.90 ha
Dwelling house setback	0.15 ha
Public road setback	0.28 ha
ABE plot	0.72 ha
Total:	**2.98 ha**

A total of 2.98 ha or 16.6 % of the plantation is made up of ABEs, leaving a remaining 15.02 ha of planted area. This ABE is in excess of the allowable 15% Afforestation Scheme threshold. As such, the eligible claimed area is calculated as follows: 15.02 x (100/85) = 17.67 ha.

The plot table must reflect the eligible claimed area, including adjustments for ineligible areas.



Bio Map (Form 1) Map 1 of 1

County:	Wexford	OS Sheet:	WX47/WX48
Townland:	Ballyminaun Big/Coolkeeran/Graheeroge	Contract No:	CN99999

Legend

Symbol/Colour	Map Feature (existing and proposed)	Map Feature Type
A	Site Access Point	Access
SN	Position of Site Notice	
	Vehicular Access/Pedrestrian Access	
	Public road	
	Aquatic Zone (stream/rivers/lakes)	Biodiversity
	Relevant Watercourse	
	Archaeology	
	Scrub (See Details/Remarks)	
	Hedgerow	
	Existing Watercourse crossing	
	Dwelling & other utilised building	
(X)	Badger Sett	
	Water hotspot (spring)	
X X X X	Additional broadleaf planting	
Environmental Setbacks (See Environmental Requirements for Affor.)		
	Water setback from aquatic zones (10 m)	
	Water setback from relevant watercourse (5 m)	
	Hedgerow setback	
	Archaeology unplanted/uncultivated setback (40m)	
	Utilised building Setback	
	Contract/project external and internal plot boundaries	Operations
	Direction of mound drains	
	Additional silt traps for sediment control	
	Site compound / Fuel storage	
	ESB overhead line (10-20 kV)	Hazards (Specify)

Details/Remarks:
- Scale 1:5000

Biodiversity
- Small clumps/areas of existing willow, blackthorn scrub vegetation in plots 4, 8 to be retained.
- Plots 1, 3 containing willow and blackthorn (BIO plots) to be left undisturbed.
- A proposed 40 m unplanted setback to be maintained from NMS records at 1: 705878, 610398 (WX047-146001-) and 2: 705893, 610400 (WX047-146002-). 4 m wide access path leading from the nearby farm track. Exclusion zone fenced with 2 strand bull wire.
- 10 m aquatic buffer zone to be established. Additional sediment traps will be located adjacent to the buffer zone where mounding takes place (plots 2, 6, and 9).
- No ground cultivation / disturbance operations within bioplot (plot 1) containing badger sett.
- All hedgerows, existing trees to be retained. Native trees (spindle, hawthorn, birch, crab apple) to be planted adjacent to water hotspot/ spring setback in plot 2.
- Hedgerow unplanting setback of 5 m for townland boundary between plots 4/5. All other unplanted hedgerow setbacks 3 m (where no other larger unplanted setback applies).
- Broadleaves (alder/birch) to be planted adjacent to aqualic zone setbacks.
- Beech/alder/birch to be planted at margin of set back (60 m) at dwelling houses for improved visual amenity.
- Total biodiversity area approx. 2.36 ha (16.5%).

Cultivation/Operational
- All plots will be mounded - cultivation direction indicated. Additional silt traps as indicated on map.

Hazards
- Overhead power lines (10-20 kV) will provide additional open space areas within plantation.

Fire Risk
- Fire risk generally low. 60 m vegetated setbacks from dwelling houses.

Map Prepared By:	John Joe Forester		
Name/Contact No:	John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023

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18-Apr-2023

Scale 1:5000

Map 17.3 Example of an Afforestation Scheme Form 1 BIO map, based on a PDF generated from iNET.)

17.8 Current Environment and Habitat Map

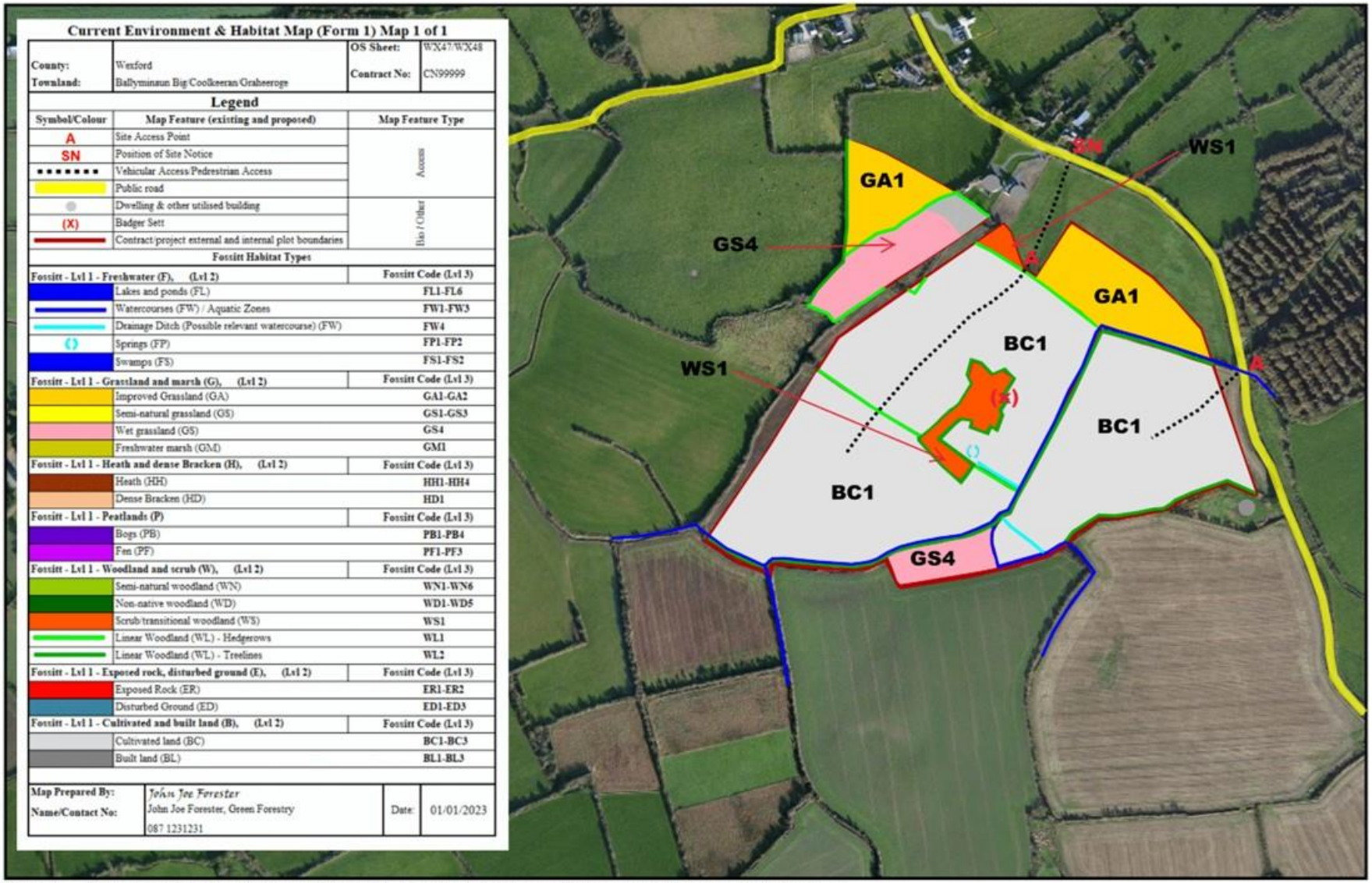
The Department provided a template document for applicants and Registered Foresters wishing to submit an Appropriate Assessment (AA) Screening Report to DAFM in respect of a forestry licence(s) and / or scheme approval as part of Circular 13 of 2020. Note that the AA Screening Report is not a mandatory document and it will typically be submitted to the Department alongside the application for licence and / or scheme approval as supplementary information. For projects where an applicant or Registered Forester opts to submit an AA Screening Report in respect of a forestry licence and / or scheme approval, it must be accompanied by specific maps illustrating:

- the current environment and habitats, and
- overall project design and associated operations.

In the case of all afforestation pre-approval applications submitted under the 2023-2027 Forestry Programme a Current Environment and Habitats Map is a mandatory requirement for each application. An example of a Current Environment and Habitats Map for an afforestation application is provided in Map 17.4 below. The map should be produced using a colour orthophoto or 6-inch map generated as a PDF from iNET. Relevant features and annotation should then be added to the PDF using the drawing tools available within Adobe Acrobat Reader. Habitat classification should be carried out to Fossitt* Level 3 and the extent of existing habitats onsite identified on the Current Environment & Habitat Map. Any possible Annex 1 habitat(s) should also be highlighted. A full description and results of any ecological survey / investigation undertaken in respect of the project should be included in any associated AA Screening Report submitted with the Current Environment & Habitat Map.

A Current Environment & Habitat Map Legend Template has been provided by DAFM to assist in the preparation of the Current Environment & Habitat Map. The template is provided as a Microsoft excel spreadsheet. Individual rows containing references to habitat types or features that are not relevant to the project site can be deleted, to reduce the size of the legend. The resulting legend can then be cropped and imported into the PDF map (or saved as a PDF and presented with the map). Using the draw tools on Adobe Reader, relevant map habitats or other features can be illustrated using the shading and / or symbols consistent with the legend. A template legend for Current Environment and Habitat Map is available from the Department's website (www.agriculture.gov.ie/) or upon request by email to the approval section of the Forestry Division (ForestryAppEng@agriculture.gov.ie).

The standard application maps e.g. Certified Species and BIO-map will suffice for the mapping requirement related to overall project design and associated operations provided that the maps are appropriately annotated (i.e. identifying relevant operations and site features etc.). References to the Certified Species and BIO-map maps should be included in the AA Screening Report and the Certified Species and BIO-map content should relate to the "Proposed Operations" associated with the project and described in the in the AA Screening Report document.



Map 17.4 Example of a Current Environment & Habitat Map, based on a PDF generated from iNET.

17.9 Forest Road Scheme - mapping requirements

17.9.1 General

The mapping requirements detailed below apply to the Forest Road Scheme for the Forestry Programme 2023-2027. The total grant under the scheme is payable in one instalment of 100% of eligible costs incurred in the construction of the forest road subject to a maximum payment of up to €55 /m (excluding VAT) to a maximum of 25m / hectare. The forest road grant is paid on the successful completion of the road to the standard outlined in the approval letter and the COFORD *Forest Road Manual* (2nd Edition, 2005) Mapping the optimum route for a forest road requires the Registered Forester to carefully consider factors such as health and safety, slope, soil type, proximity to water, proximity to archaeology, proximity to nature conservation areas, forest logistics and cost. This means that the registered forester must walk into the forest with a means of determining the soil depth and check the location of any culverts that may be required while also paying attention to slope.

17.9.2 Mapping requirements

The Department's iNET system can be used to digitise and submit forest road pre-approval (Form 1) applications online. iNET also facilitates the preparation of the required digital or hardcopy maps for printing and / or subsequent uploading by Registered Foresters. These maps can be printed to PDF using iNET, saved locally by an iNET user and then subsequently annotated with text and graphics including map legends using the drawing tools embedded in Adobe Acrobat Reader.

Forest Road Maps must include and be annotated with the following features (where applicable), for both proposed (i.e. Form 1 applications) and built (i.e. Form 2) forest roads:

- Existing roads to / within the forest -a continuous thick black line (i.e. '**A** ——— **B**').
- Harvesting roads - a continuous thick red line (i.e. '**C** ——— **D**').
- Upgraded forest roads - indicated by a cross-and-dash black line (i.e. '**E** x-x-x-x **F**').
- Species information / plot boundaries (use an existing Certified Species Map, if available).
- Other features pertaining to the road project including:
  - timber stacking area,
  - turntables,
  - lay-bys,
  - bridges,
  - culverts or
  - any internal borrow pits (existing or new) from which it is intended to source road construction materials must also be identified on the map where appliable.

17.9.3 Maps required for Forest Road pre-approval (Form 1)

The following maps are required:

- Forest Road Map Certified Species Map showing the harvest area in accordance with scheme rules.

- Biodiversity Map (or 'BIO Map')
- Current Environment and Habitats Map where an AA Pre-Screening Report is submitted

These maps must be drawn on a 1:5,000 colour aerial photograph printed from the DAFM's online mapping system, iFORIS Internet, iNET. Alternatively, an original composite Tailte Éireann map at a scale of 1:5,000 (based on the Tailte Éireann Prime2 mapping base e.g. MapGenie Premium) may be submitted.

17.9.4 Maps required for Forest Road grant payment applications (Form 2)

The following maps are required:

- Forest Road Map
- Certified Species Map
- BIO Map

The Forest Road Map must record the road alignment as surveyed on-the-ground. Detailed mapping conventions are outlined below and must be strictly followed. The Form 2 BIO Map must record any revised details, if applicable (e.g. additional silt traps installed). See also example Forest Road BIO Map below in figure 17.6.

17.9.5 Determining road length for licencing and equivalent length for grant aid purposes

The length of a forest road for licencing/consent purposes will be the linear length between two points and measured from the edge of the public road, where applicable, along the centre of the alignment to the end of the proposed or built road surface. Note that the length of a forest road for the purposes of grant aid should be measured as above, but with additional equivalent lengths added. Equivalent road lengths arise from the extra work/quantities necessary due to road widening at loading bays, bellmouths and junctions. These additional equivalent lengths can be included in calculating work undertaken as outlined in the Forest Road Manual (COFORD 2005) section B8. For grant aid purposes, all lengths and equivalent lengths when combined cannot exceed the maximum density threshold of 25 metres per hectare.

Form 1, 2 and Form 3 Forest Road Maps should clearly identify the location of bellmouths, 'T'-turning areas and loading bays. The Registered Forester should ensure that adequate provisions have been made for equivalent road lengths arising from the extra work / quantities necessary due to:

- road widening at public road bellmouths – 30 metres equivalent,
- 't'-turning areas – 70 metres equivalent,
- standard loading bay with internal turning area – 105 metres equivalent,
- standard back in type loading bay – 30 metres equivalent
- circle turning area – 110 metres equivalent
- standard passing place – 45 metres equivalent

Note also that only the minimum amount of roadway required to ensure forwarding distances do not exceed a maximum of 500 metres, will be grant-aided.

In cases where the proposed forest road bellmouth is at least 2 metres below the surface of the existing public road, an additional equivalent length of 30 metres will be allowed per forest entrance, to contribute towards the cost of the additional stone required to build the forest road

up to the level of the public road. This means that such bellmouths can 'attract' an additional 60 metres of equivalent road length for grant purposes.

Important site features such as archaeology for example, may be potentially impacted by the installation of borrow pits during the proposed road development. Features such as existing or new borrow pits must be included on the Form 1 pre-approval Forest Road Map, where relevant. The harvest area (area to be harvested within the next 5 years) to be served by a proposed forest road must be clearly identified and outlined in red on the Form 1 Forest Road Map. In addition to the assigned Contract Number, the legend on the Form 1 Forest Road Map must contain the following information and be positioned on the top-right hand corner of the map:

- the length of the proposed harvest road to be constructed (m)
- the length of proposed and eligible grant-aided road to be constructed (m) (in situations where the length of the road to be constructed is in excess of the 25 m/ha threshold, the eligible grant-aided road length will be less than the total constructed length.
- the area (ha) requiring harvesting within the next 5 years and served by the proposed harvest road
- the age(s) of plantation served by the proposed road (or plantation/harvest plots planting years).

17.9.6 Mapping requirements for Forest Roads connecting with the public road network

A person or company, who is planning to either construct a new forest entrance, or widen an existing entrance, must apply to the Department for consent prior to commencing works. For forest roads that connect with the public road network readers are referred to Circular 3 of 2020 in relation to the Single Consent System. This Circular sets out the application procedure for a Forest Road licence where the forest road includes an entrance onto a public road or where the work related to forest road construction involves material widening of an existing entrance onto the public road network. The Single Consent System Circular details the mandatory requirements (including specific maps types and map scales), consultation process and deadlines in respect of interacting with the Department in relation to the application process for such road licences. The mapping requirement detailed in the Single Consent System Circular are summarised below.

A forest road application for single consent must include the following maps:

- Location map (scale 1:50,000 or 1:25,000);
- Detailed plan of the forest entrance, showing sightlines (scale 1:500) and route of forest road, marked in red;
- Plan of forest entrance (scale 1:2,500) showing:
    - Forest road and all other entrances to public road within sightlines;
    - The forest entrance shall be marked in orange;
    - The forest being served shall be marked on the map and outlined in purple;

Other document requirements in relation to applications for Single Consent are set out in Circular 3 of 2020.

A Technical Standard named Design of Forest Entrances from Public Roads" was issued by the Department as part of Circular 3 of 2020. Sets out the design and construction standards required for forest entrances that open on to public roads. The Standard covers the construction of new entrances and the upgrading of existing entrances along regional and local roads.

For forest roads that connect with public roads readers should also refer to Circular 10 of 2022 – which includes a Forest Road Entrance Checklist. This checklist is to accompany a Forest Road Licence application only where the licence application includes the construction of a new forest road entrance or the material widening of an existing entrance onto a Public road.

17.9.7 Mapping requirements Forest Road Scheme Special Construction Works

Under the new Forestry programme (2023-2027), a Special Construction Works (SCWs) grant is provided at a maximum of 50% of the cost subject, up to a cap of €10,000 per application, whichever is the smaller. Special construction works will only apply to permanent bridges and large culverts greater than or equal to 1.0 metre in diameter and will be limited to situations where the forest area served exceeds 5 hectares.

Location of SCW must be lettered and annotated on the pre-approval forest road map and clearly identified on the legend attached to the pre-approval forest road application map and Form 2 road maps. In addition, features such as archaeological sites and aquatic zones or any other relevant environmental receptors which are relevant in the context of the proposed Special Construction Works must be identified on the application's BIO Map, using the mapping conventions detailed in Section 17.7.

17.9.8 Mapping requirements the Forest Road Scheme Engineering Design Support Measure

The Engineering Design Support measure provides additional funding and support for Forest Owners where a proposed forest road requires an entrance from a public road or the material widening of an existing entrance (see also 17.9.5).

Applicants are required to submit the following maps and related documentation:

- Detailed map of the forest entrance (map scale 1:500)
- Map of forest entrance (map scale 1:2500)
- Map with gradients of Forest Road entrance and public road
- Drainage Details
- Engineers Report
- Proposed Haulage Route
- Relaxation from standard supporting Documents – where relevant

Only one application can be made per original Afforestation Contract Number under this support measure. Funding for a total allocation of 300 projects per annum under the current Forestry Programme 2023-2027 is available. The grant payment allocation is €1,000 per project.

17.9.9 Mapping requirements for the Forest Road Scheme Ecologically Enhanced Road Measure

The Forestry Programme 2023-2027 Forest Roads Scheme provides the opportunity for funding road projects with an emphasis on biodiversity enhancement, forest protection and the delivery of specific ecosystem services that aid in the protection of water and aquatic ecosystems. These benefits are achieved through enhanced road design and construction practices and through the installation of forest protection facilities. The ecological enhancement measure is open to eligible Forest Road Scheme applicants with a forest area served by the proposed road greater than 5 hectares.

The option to apply for proposed enhancement measures must be indicated upon application for the Forest Road scheme by the Registered Forester during the online iNET application process. The location of the ecological enhancement feature(s) must be clearly lettered and annotated on the map and identified on the legend attached to the pre-approval Forest Road application Map and Form 2 Road Map.

Specific eligible measures under this action include:

- Creation of forest road edge habitat comprising open habitat, scrub and broadleaf trees.
- Creation of improved open space by provision of mixed species grassland.
- Creation of connectivity with the forest by providing open space habitat adjoining the proposed forest road.
- Deer management measures.
- Incorporation of water hotspots adjoining the forest road into the open space component created during forest road construction.

The grant available is allocated at a maximum of €1,000 per project with a total project cap of 25 successful applications per annum over the life of the 2023-2027 Forestry Programme.

17.9.10 Supporting Forest Road application and map information

For all Forest Road Scheme applications, inventory information for the area to be harvested should be attached to the application. This information should support the claim that the area is suitable for harvesting. An updated Certified Species Map will suffice for existing grant-aided plantations for area and species information. If the forest was not grant-aided and no previous Certified Species Map is available, a new Certified Species Map must be prepared and submitted with the pre-approval road application. Mapping requirements are listed in sections 17.9.3 and 17.9.4.

Road specifications (e.g. length / distance, soil depth, formation type, road, etc.) associated with particular road sections should also be included (where required), by annotating the map along specific sections of the proposed road, using letters (e.g. '**A-B**', '**B-C**', '**C-D**', etc.).

Annex 2 and Annex 3 of the Forest Road Scheme Terms and Conditions document provide templates into which plot inventory details and proposed road specifications for each road application must be provided.

For Form 2 submissions, the Forest Road Map must accurately represent the position and extent of the constructed road. The use of GNSS receivers for measuring the position and length of the completed road is encouraged, and a GNSS survey may be requested by the Forest Service

where there are any uncertainties regarding the claim map(s) provided. These data may be used to plot the alignment of the constructed forest road for the purposes of the grant claim.

Where the services of an engineer / surveyor have been engaged at design stage, completed works must be certified as having met the specified standard for the road design and specification. The Form 2 Forest Road map should include:

- The length of the built harvest road (metres).
- A claim for the eligible grant-aided road (metres) constructed (in situations where the road constructed is in excess of the 25 metre per hectare threshold, the eligible grant-aided road length will be less than the total constructed length).
- The area (ha) requiring harvesting within the next 5 years and served by the harvest road the age(s) of the plantation served by the constructed road.
- The location of any SCWs, lettered and annotated in the map's legend.
- The location of any ecological enhancement feature(s) must be clearly lettered and annotated on the map and identified on the legend (see example Map 17.6 below).

Forest Road Map (Form 1) Map 1 of 1

County:	Wexford	**OS Sheet:**	WX42
Townland:	Kildavin Upper/Staplestown	**Contract No:**	CN99990

Road Type Details	**Proposed/Constructed Road (m)**		**Proposed/Constructed Road Grant Eligibility (m)**	
	Internal	**External**	**Internal**	**External**
Existing road	0	0	0	0
Harvesting road	398	0	0	398
Upgrading X- X - X - X	0	0	0	0

Summary	**New Road (m)**	**Grant Aided Road/Claim**	**Area Serviced (ha)**	**Density (m/ha)**
Totals	398	398	15.94	25.0

(Plantation/Plot area served by roads outlined in red)

Forest Inventory Details (if no certified species map available)

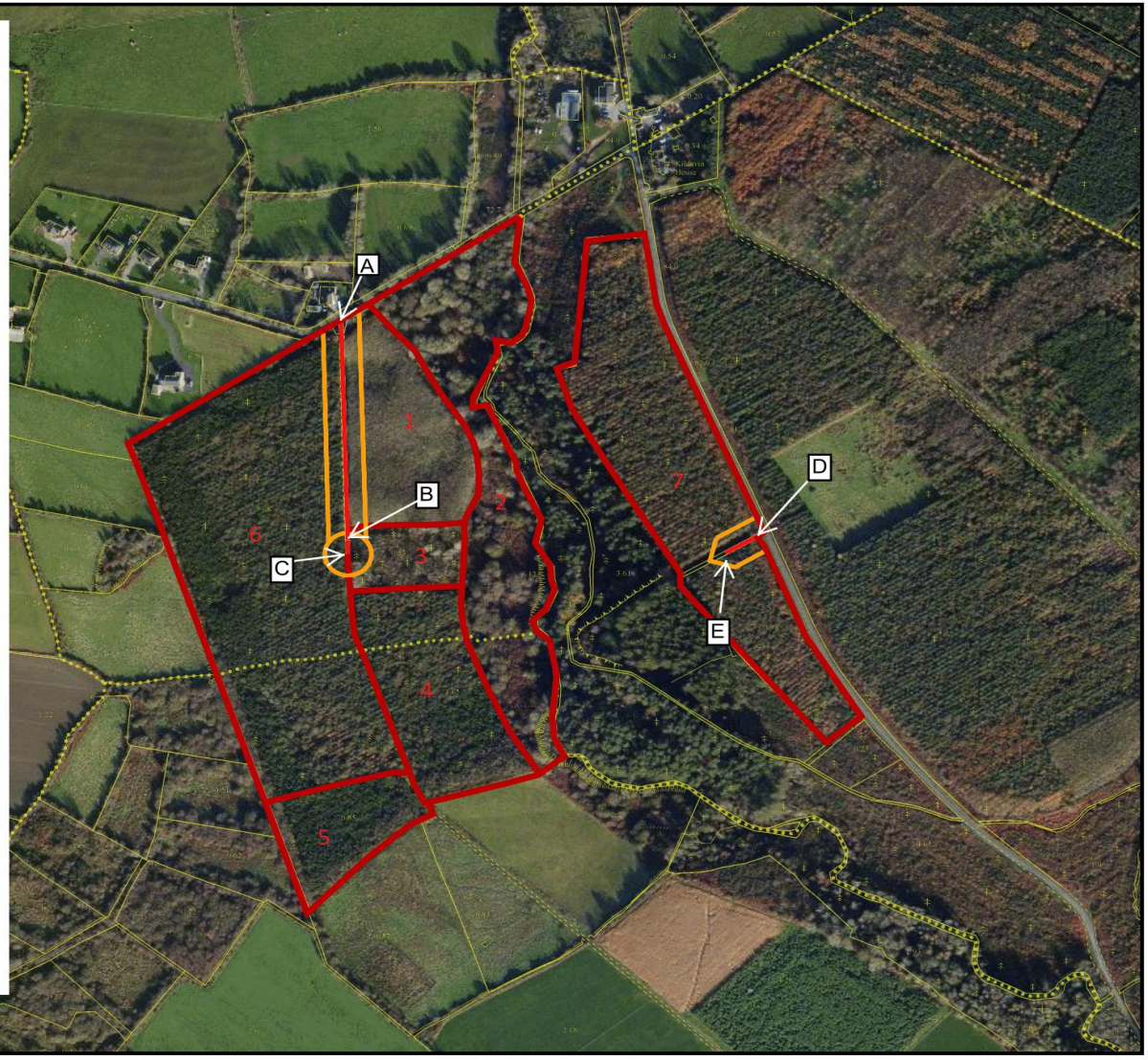
Plot No	Area (ha)	GPC	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
1	1.49	5	BHF	SYC	NA	100	P	2002	10	0.00	
2	2.76	NA	BHF	Ash	NA	30	G	NA	8	0.00	
2		NA	BHF	ADB	NA	70	G	NA	8	0.00	
3	0.53	6	BHF	PO	NA	100	P	2002	8	0.00	
4	1.65	4	CHF	NS	NA	100	P	2002	16	0.00	
5	0.91	3	CHF	SS	NA	100	P	2002	20	0.00	
6	5.23	3	CHF	SS	NA	80	I	2002	20	0.00	
		3	CHF	JL	NA	20	I	2002	12	0.00	
7	3.37	6	BHF	PO	NA	80	P	2002	8	0.00	
			BHF	SP	NA	20	P	2002	12		
Tot:	15.94									0	

Remarks: (Mapping)
- Scale 1:5000

Operational
- Plantation age: 21 yrs.
- Approximate tree clearance area (.c 30 m) for proposed road identified by orange boundary lines.
- Thinning within CHF plots will comprise standard 1 line in 7 with selection. Thinning of broadleaf plots to be carried out according to Teagasc Silvicultural Guidelines for the Tending and Thinning of Broadleaves.
- Harvested timber to be forwarded to turning Circle centred on point C on map (Plots 1-6). Timber to be forwarded to point E in Plot 7.
- Large misshapen or diseased ash trees to be felled in plot 2. Willow, birch to left intact.
- Bellmouths to be installed at points A and D (60 m equivalent lengths).
- A-B existing metalled surface suitable for fully laden timber truck (198 m).
- Turning circle to be installed centred on point at point C (110 m).
- D-E new harvesting road (30 m).
- Totals for linear and equivalent road lengths: 60 m (2 x bellmouths) + 198 m (harvesting road) + 110 m (turning circle) + 30 m (harvesting road) = 398 m.

Hazards
- Areas of steep slope at the south of plot 2 adjacent to aquatic zone (see Bio Map).

Map Prepared By:	*John Joe Forester*		
Name/Contact No:	John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023



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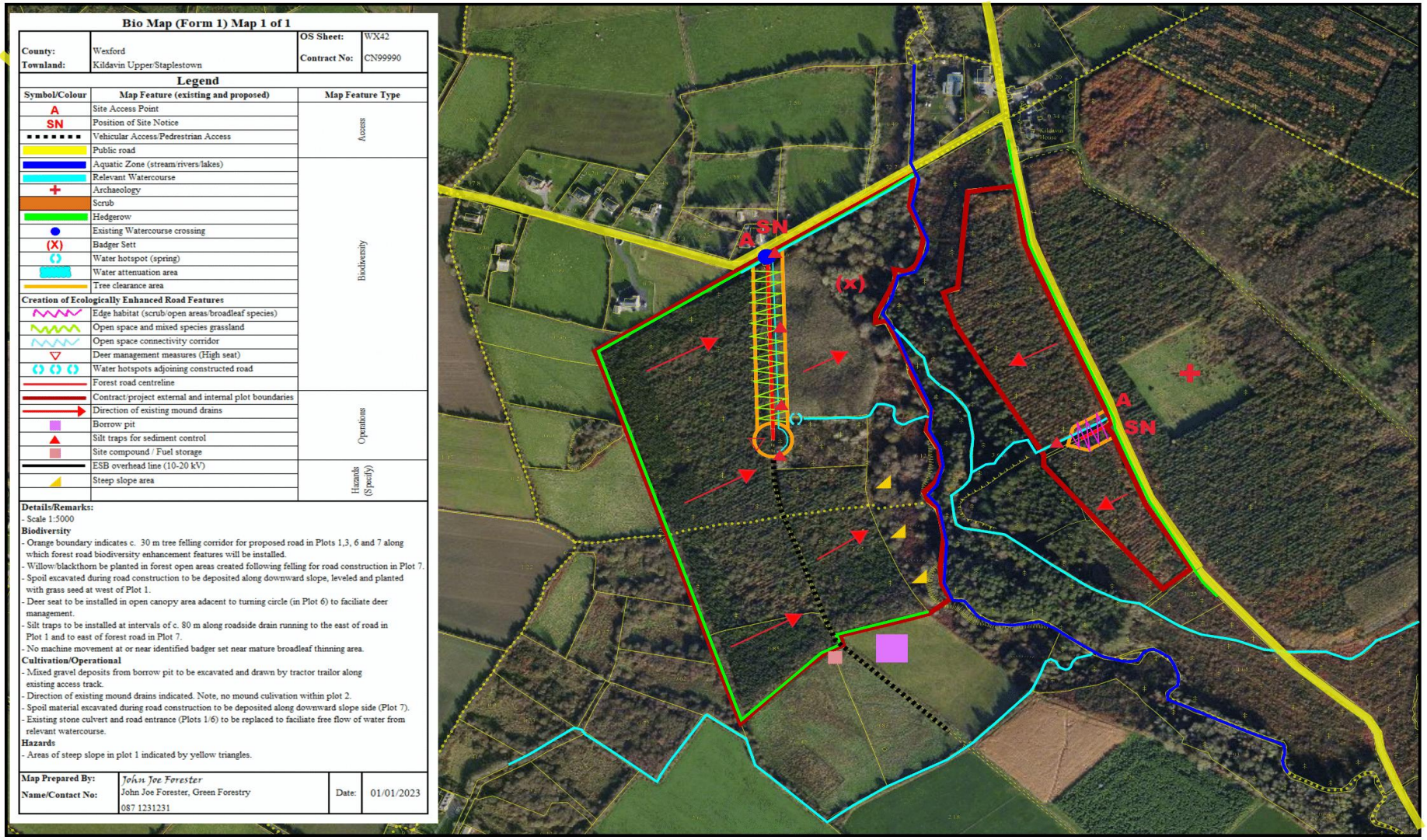
Scale 1:5000

Map 17.5 Example of a Forest Road Scheme Form 1 Forest Road Map, based on a PDF generated from iNET.



Bio Map (Form 1) Map 1 of 1

County:	Wexford	OS Sheet:	WX42
Townland:	Kildavin Upper/Staplestown	Contract No:	CN99990

Legend

Symbol/Colour	Map Feature (existing and proposed)	Map Feature Type
A	Site Access Point	Access
SN	Position of Site Notice	
	Vehicular Access/Pedrestrian Access	
	Public road	
	Aquatic Zone (stream/rivers/lakes)	Biodiversity
	Relevant Watercourse	
+	Archaeology	
	Scrub	
	Hedgerow	
●	Existing Watercourse crossing	
(X)	Badger Sett	
( )	Water hotspot (spring)	
	Water attenuation area	
	Tree clearance area	
Creation of Ecologically Enhanced Road Features		
	Edge habitat (scrub/open areas/broadleaf species)	
	Open space and mixed species grassland	
	Open space connectivity corridor	
▽	Deer management measures (High seat)	
( ) ( ) ( )	Water hotspots adjoining constructed road	
	Forest road centreline	
	Contract/project external and internal plot boundaries	Operations
	Direction of existing mound drains	
	Borrow pit	
▲	Silt traps for sediment control	
	Site compound / Fuel storage	
	ESB overhead line (10-20 kV)	Hazards (Specify)
	Steep slope area	

Details/Remarks:
- Scale 1:5000

Biodiversity
- Orange boundary indicates c. 30 m tree felling corridor for proposed road in Plots 1,3, 6 and 7 along which forest road biodiversity enhancement features will be installed.
- Willow/blackthorn be planted in forest open areas created following felling for road construction in Plot 7.
- Spoil excavated during road construction to be deposited along downward slope, leveled and planted with grass seed at west of Plot 1.
- Deer seat to be installed in open canopy area adacent to turning circle (in Plot 6) to faciliate deer management.
- Silt traps to be installed at intervals of c. 80 m along roadside drain running to the east of road in Plot 1 and to east of forest road in Plot 7.
- No machine movement at or near identified badger set near mature broadleaf thinning area.

Cultivation/Operational
- Mixed gravel deposits from borrow pit to be excavated and drawn by tractor trailor along existing access track.
- Direction of existing mound drains indicated. Note, no mound culivation within plot 2.
- Spoil material excavated during road construction to be deposited along downward slope side (Plot 7).
- Existing stone culvert and road entrance (Plots 1/6) to be replaced to faciliate free flow of water from relevant watercourse.

Hazards
- Areas of steep slope in plot 1 indicated by yellow triangles.

Map Prepared By:	John Joe Forester		
Name/Contact No:	John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023

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Scale 1:5000

Map 17.6 Example of a Forest Road BIO Map, based on a PDF generated from iNET.

17.10 Woodland Improvement Scheme - mapping requirements

17.10.1 Tending & Thinning of Broadleaves (WIS) mapping requirements

Element 1 of the Woodland Improvement Scheme, the Tending & Thinning measure, applies to all broadleaf and broadleaf mixed forests regardless of whether they have been previously grant aided at establishment. The scheme provides funding for two thinning interventions, with each intervention to be applied for separately using the Form 1 and Form 2 process.

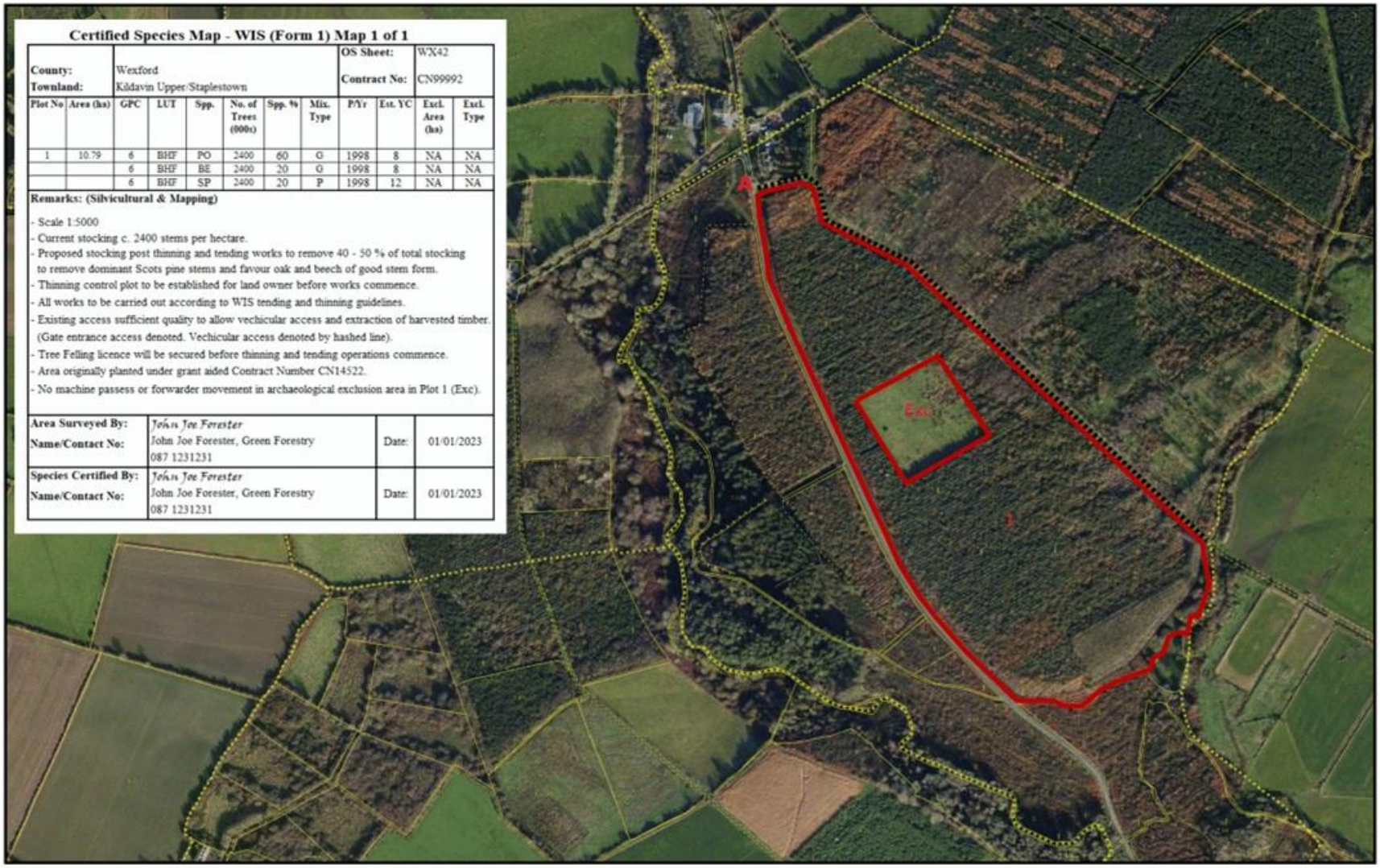
The area and width criteria for minimum eligible plot dimensions apply as per the Afforestation Scheme. Grant aid for the **treated area** is available for either tending or thinning operations, depending on which is the most appropriate to the site. Note that the treated area does not include biodiversity plots, open space area, road and water setbacks or other ABEs where trees available for treatment are not present and therefore will not undergo woodland improvement related operations.

A Certified Species Map must be supplied along with all WIS Form 1 and Form 2 applications. A Certified Species Map should be prepared in accordance with the mapping requirements set out earlier in this section. The Certified Species Map should indicate clearly the location of all relevant plot boundaries and be numbered sequentially (where possible, matching the plot numbers of the original grant-aided plantation). The Certified Species Map will be used by the Department to digitise the boundaries and process the related grant claim for the treatment areas where proposed woodland improvement operations are planned and implemented.

Any relevant notes or remarks should be recorded on the map to aid the assessment of the pre-approval application and its suitability for grant aid. For example, if the area submitted for approval has received grant aid in the past, the Contract Number (CN) for the area must be noted on the Certified Species Map.

Areas of the plantation that are poor in quality or untreated must be mapped out and not claimed as part of the treated area. Untreated areas are not eligible for grant aid. Where untreated areas are less than plot size it is acceptable to reduce the gross area by the equivalent amount by entering an “exclusion” in the plot table on the Form 1 and 2 application claim maps. It is the responsibility of the applicant and their registered forester to ensure that the boundaries of the eligible area includes only areas that are suitable for treatment.

Map 17.7 provides an illustrate example of a WIS Certified Species Map prepared using an orthophoto basemap (at 1:5,000 scale) and generated as a PDF from the Departments’ iNET mapping system. Note that the map has been annotated using Adobe Acrobat Reader.



Certified Species Map - WIS (Form 1) Map 1 of 1

County:	Wexford	**OS Sheet:**	WX42
Townland:	Kildavin Upper/Staplestown	**Contract No:**	CN99992

Plot No	Area (ha)	GPC	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
1	10.79	6	BHF	PO	2400	60	G	1998	8	NA	NA
		6	BHF	BE	2400	20	G	1998	8	NA	NA
		6	BHF	SP	2400	20	P	1998	12	NA	NA

Remarks: (Silvicultural & Mapping)

- Scale 1:5000
- Current stocking c. 2400 stems per hectare.
- Proposed stocking post thinning and tending works to remove 40 - 50 % of total stocking to remove dominant Scots pine stems and favour oak and beech of good stem form.
- Thinning control plot to be established for land owner before works commence.
- All works to be carried out according to WIS tending and thinning guidelines.
- Existing access sufficient quality to allow vechicular access and extraction of harvested timber. (Gate entrance access denoted. Vechicular access denoted by hashed line).
- Tree Felling licence will be secured before thinning and tending operations commence.
- Area originally planted under grant aided Contract Number CN14522.
- No machine passess or forwarder movement in archaeological exclusion area in Plot 1 (Exc).

Area Surveyed By: **Name/Contact No:**	*John Joe Forester* John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023
Species Certified By: **Name/Contact No:**	*John Joe Forester* John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023

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25-Jun-2023

Scale 1:5000

Map 17.7 Example of a Woodland Improvement Scheme Form 1 Certified Species Map, based on a PDF generated from NET.

17.11 Reconstitution of Woodlands Scheme - mapping requirements

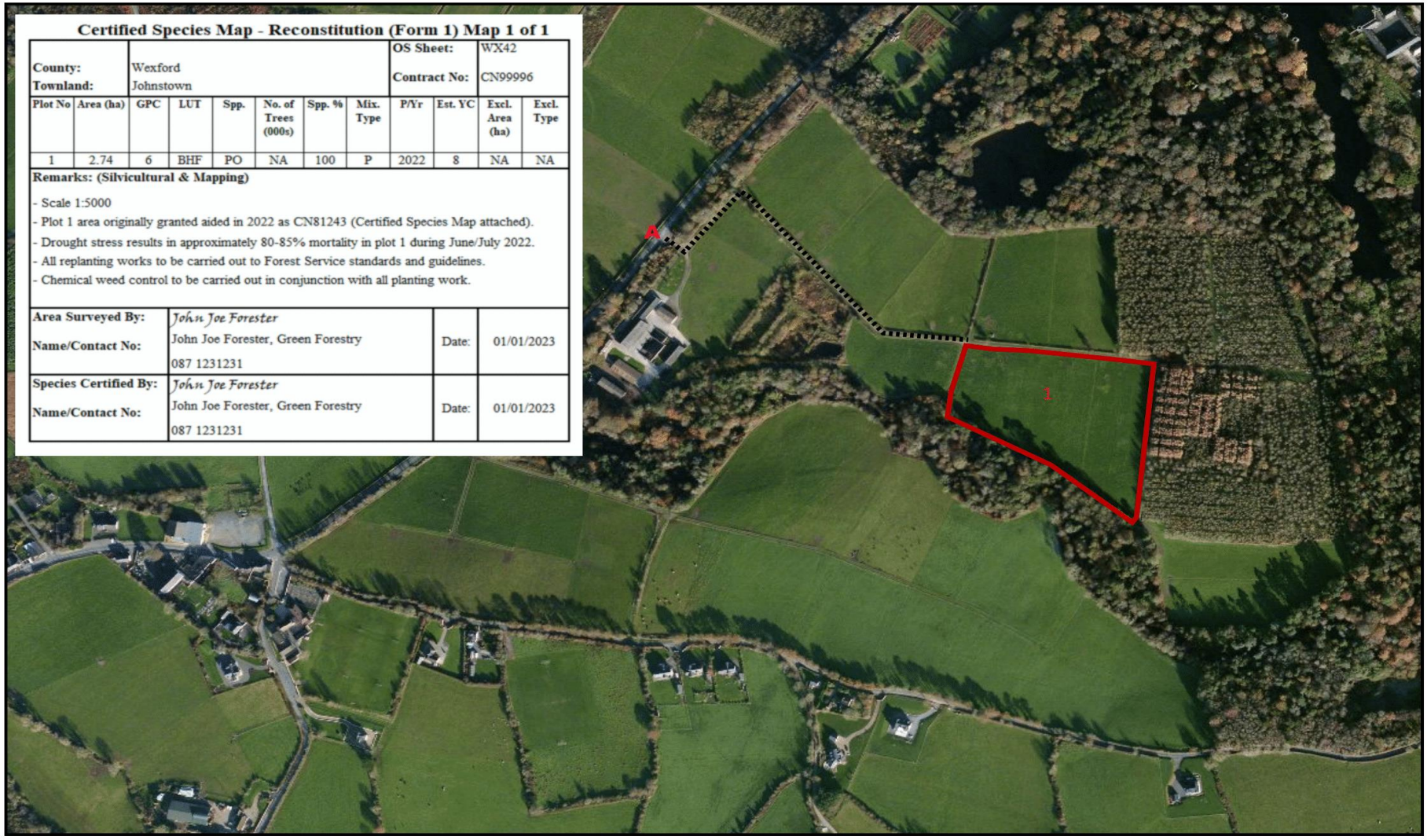
This grant scheme applies when damage to a plantation has occurred as a result of natural causes. The scheme supports the removal and or where appropriate the destruction of trees infected by contagious pathogens, or trees likely to be so infected. Support may also be considered for the restoration of forests damaged by other natural causes such as, catastrophic events and / or climate change related events, such as frost, wind, deer, grey squirrel and vole, where a specific threshold of the forest potential has been impacted by a damage causing agent.

This scheme will be aimed at forests where significant damage has occurred. Significant damage for the purposes of this intervention will mean death or irremediable damage of 20% or more of the trees in the relevant plantation covered by the one contract number or forest block. Calculation of the 20% damage threshold will be by area where significant damage has occurred. It will also include the removal of host species for diseases such as Rhododendron in the spread of *Phytophthora ramorum*. Reconstitution measures will include removal of infected material or host species where required and replanting where appropriate.

A Certified Species Map must be supplied along with all Reconstitution Scheme Form 1, Form 2 and Form 3 applications. The Certified Species Map should be prepared in accordance with the standards set out earlier in this section. A Fencing Map is also required for Form 1 and Form 2 applications, where there is a new fencing requirement. A Biodiversity Map is also required for Form 1 and Form 2 applications, in accordance with the standards set out in Section 17.7.

The Certified Species Map should clearly indicate the extent of all plots being applied for under the Reconstitution Scheme application. Where the application covers more than one area/ plot, plots should be numbered sequentially. The Certified Species Map will be used to digitise boundaries of the proposed reconstitution area into the Departments mapping system. Any relevant notes or remarks should be recorded in the map legend, to aid the assessment of the application and its suitability for grant aid.

In addition to the Certified Species Map for the Reconstitution Scheme application, the original Certified Species Map to which the Reconstitution Scheme application refers may also be required. Map 17.8 provides an illustrated example of a Reconstitution Scheme Certified Species Map prepared using an orthophoto basemap at a scale of 1:5,000 generated as a PDF the Department's iNET system. In the example, a total of 2.74 ha of the plot (Plot 1 in the Reconstitution Certified Species Map) has suffered severe drought damage and must be reconstituted i.e. replanted to achieve Forest Service stocking standards. Note that the map has been annotated with text and graphic symbols using Adobe Acrobat Reader.



Certified Species Map - Reconstitution (Form 1) Map 1 of 1

County:	Wexford							**OS Sheet:**	WX42		
Townland:	Johnstown							**Contract No:**	CN99996		
Plot No	**Area (ha)**	**GPC**	**LUT**	**Spp.**	**No. of Trees (000s)**	**Spp. %**	**Mix. Type**	**P/Yr**	**Est. YC**	**Excl. Area (ha)**	**Excl. Type**
1	2.74	6	BHF	PO	NA	100	P	2022	8	NA	NA

Remarks: (Silvicultural & Mapping)

- Scale 1:5000
- Plot 1 area originally granted aided in 2022 as CN81243 (Certified Species Map attached).
- Drought stress results in approximately 80-85% mortality in plot 1 during June/July 2022.
- All replanting works to be carried out to Forest Service standards and guidelines.
- Chemical weed control to be carried out in conjunction with all planting work.

Area Surveyed By:	*John Joe Forester*		
Name/Contact No:	John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023
Species Certified By:	*John Joe Forester*		
Name/Contact No:	John Joe Forester, Green Forestry 087 1231231	Date:	01/01/2023

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Scale 1:5000

Map 17.8 Example of a Reconstitution of Woodlands Scheme Form 1 Certified Species Map, based on a PDF generated from NET.

17.12 Summary of map requirements by scheme type

Table 17.8 summarises the mapping requirements for Form 1 (F1), Form 2 (F2) and Form 3 (F3) maps for the Afforestation Scheme (Affor), Forest Road Scheme (Road), Woodland Improvement Scheme (WIP) and Reconstitution Scheme (Recon) etc. funded under the Forestry Programme 2023-2027.

Table 17.8 Summary of map type requirements by scheme type.

	Scheme type									
	Affor.			Roads		WIS		Recon.		
Map type	F1	F2	F3	F1	F2	F1	F2	F1	F2	F3
Certified Species Map	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fencing Map	✓	✓						✓	✓	
BIO Map	✓	✓		✓	✓			✓	✓	
Current Environment & Habitats Map[1]	✓			✓						

[1]Mandatory for all afforestation applications or where an Appropriate Assessment (AA) Screening Report is submitted to DAFM in respect of a forestry licence or forestry scheme application.

APPENDICES

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Appendix 1: **Forest Types, Grant and Premium Rates**

General

The rates of Grant and Premium payable are determined by the Forest Type of the planted lands, and the area planted. FT's are defined below.

Land Types and Forest Types

Eligible land types for afforestation under the Scheme are described in the *Forestry Standards Manual* and the *Land Types for Afforestation* document published by DAFM.

Species Composition of new Forest Types

To be eligible for grant aid each plot within a forest must conform to one of the following Forest Types or FT's.

1.1 FT1 – Native forests

FT1 comprises the creation of new native forest, principally to promote native forest biodiversity, biodiversity within the wider landscape, and other ecosystem services such as soil and water protection and landscape enhancement. Areas planted under FT1 can be managed for wood production using continuous cover forestry practices, where compatible with onsite biodiversity.

Note, FT1 plots can be planted alongside other FT types within the same overall afforestation project.

Planting details are dictated by the Native Forest Framework (see Appendix 2), which identifies the most appropriate native forest scenario for each plot, based principally on soil and vegetation. The species planted are restricted to those that are native to Ireland and prescribed by the framework, i.e. Scenarios 1-6 therein. The use of native provenance tree stock during establishment is prioritised. Establishment must also be achieved with minimal inputs, with cultivation largely limited to scrap or inverted mounding or no soil cultivation.

The following native species may be planted within FT1 plots, depending on the prescribed native forest scenario identified for each plot using the Native Forest Framework:

- Common alder (*Alnus glutinosa*)
- Downy birch (*Betula pubescens*)
- Silver birch (*B. pendula*)
- Wild cherry (*Prunus avium*)
- Pedunculate oak (*Quercus robur*)
- Sessile oak (*Q. petraea*)
- Rowan (*Sorbus aucuparia*)
- Hazel (*Corylus avellana*)
- Hawthorn (*Crataegus monogyna*)
- Grey Willow (*Salix cinerea*)
- Scots pine (*Pinus sylvestris*)
- Holly (*Ilex aquifolium).*

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FT1 applies to any plot proposed for native forest establishment where one of the six scenarios under the Native Forest Framework is being proposed based on soil and vegetation. Each plot under FT1 is assigned to a particular scenario (1-6) from the Native Forest Framework that reflects the most appropriate native forest type for that plot. The framework specifies the species mix and planting design required by that forest type. The 6 scenarios specified in the Native Forest Framework which was, developed by DAFM in partnership with NPWS and Woodlands of Ireland, representing the main native forest types found in Ireland, that are found on their associated site types:

- Scenario 1: Podzols (Oak-Birch-Holly Woodland)
- Scenario 2: Brown Podzolics (Oak-Birch-Holly with Hazel Woodland)
- Scenario 3: Brown Earths (Oak-Ash-Hazel Woodland)
- Scenario 4: Gleys (Alder-Oak-Ash Woodland)
- Scenario 5: Highly Modified Peat & Peaty Podzols (Pioneer Birch Woodland)
- Scenario 6: Alluvial Floodplains (Alluvial Woodland)

The use of the Native Forest Framework to identify the most appropriate native forest scenario and associated species mixture and planting design is requirement under FT1. All species must be planted at a stocking rate of 2,500 stems / ha on all sites (i.e. a spacing of 2.0 x 2.0 metre).

1.2 FT2 – Forests for water

FT2 comprises the creation of new native forest in strategic locations where this land use change would deliver specific ecosystem services regarding the protection of water and aquatic ecosystems by way of expanding areas of alluvial forests.

FT2 is designed to address specific needs including [inter alia] to help Ireland achieve the water quality objectives as set out in the River Basin Management Plan for Ireland 2023 – 2027; to facilitate the expansion of Annex I Habitat 91E0 Alluvial Woodland, which has been classified at Bad Overall Status in Ireland by the NPWS and to help protect drinking water sources. Therefore, in order to be considered eligible, applications must meet one of the following targeted objectives:

1. Plant in areas identified as Rank 1-3 on the EPA Pollution Impact Potential (PIP) Maps for phosphorus to break the pathway and protect the delivery point to the receiving aquatic zone. PIP maps can be accessed in the iNET map.
2. Plant to facilitate the expansion of the Annex I Habitat: Alluvial Woodland 91E. A Forest and Woodland Annex Habitat spatial data layer can be accessed from iNET.

Planting details are prescribed in the Native Forest Framework (see Appendix 2) which prescribes scenarios and the mixture design for each FT2 plot in the proposal. Species planted are restricted to those that are native to Ireland and prescribed by the framework, i.e. Scenarios 1 and 2 therein. The use of native provenance tree stock during establishment is prioritised. Establishment must also be achieved with minimal inputs. Scenario 2 of the Native Forest Framework will have a particular relevance under FT2, as it deals with alluvial woodland creation soil conditions.

All species must be planted at a stocking rate of 2,500 stems / ha on all sites (i.e. a spacing of 2.0 metres x 2.0 metres).

Note, FT2 plots can be planted alongside other FT plots within the same overall afforestation project.
Note

The following native species may be planted in FT2, depending on the native forest type(s) identified for each plot using the Native Forest Framework:

- Common alder (*Alnus glutinosa*)
- Downy birch (*Betula pubescens*)
- Silver birch (*B. pendula*)
- Wild cherry (*Prunus avium*)
- Pedunculate oak (*Quercus robur*)
- Sessile oak (*Q. petraea*)
- Rowan (*Sorbus aucuparia*)
- Hazel (*Corylus avellana*)
- Hawthorn (*Crataegus monogyna*)
- Grey Willow (*Salix cinerea*)
- Scots pine (*Pinus sylvestris*)
- Holly (*Ilex aquifolium*)

See Annex 3 Afforestation Scheme Document for more details on Forests for Water.

1.3 FT3 – Forest Creation on Public Lands

The purpose of FT3 – Forest Creation on Public Lands is to encourage Public Bodies to establish new native forest on suitable land in their ownership and control. FT3 is specifically aimed at Public Bodies, including Government Departments and State Sponsored Organisations, Higher Education Authorities, and Local Authorities. FT3 provides funding for native forests which are capable of delivering the following ecosystem services:

- The recreation of lost local native woodland habitats, rich in biodiversity and cultural significance.
- The formation of 'bio-corridors' with and between other semi-natural habitats within the surrounding landscape.
- Carbon sequestration arising from woodlands that will exist in perpetuity.
- The protection and enhancement of water quality and associated aquatic ecosystems.
- The improvement of air quality in urban and peri-urban areas.
- Soil protection and the reclamation of former landfill and brownfield sites.

The Forest Creation on Public Lands FT provides a means for public bodies to implement commitments to meeting United Nations Sustainable Development Goals and targets set out under the Climate Action Plan and other national and international environmental priorities that are made to their customers, employees, partner, and to the public in genera to strengthens corporate social responsibility.

The scheme comprises three separate funding elements. Elements 1 and 2 (both optional) relate to recreation and facilities, while Element FT3 relates to the planting of native forests.

Forest Creation on Public Land, FT3s is primarily aimed at the creation of new native forests). Elements 1 and 2 are optional to facilitate situations where the applicant may not wish to engage in recreational development, or where the site does not lend itself to this use and they only wish to apply for Element 1.

Recreation Elements 1 and 2

Table below sets out the grant rates available under the optional Recreation Elements 1 and 2. Specific details regarding these Elements are as follows:

- Elements 1 and 2 are optional and do not have to be included in an application under Forest Creation on Public Lands.
- Any application under Elements 1 and/or 2 must be included in the corresponding Form 1 application for Planting Element FT3.
- Elements 1 and 2 are aimed at funding the installation of recreational facilities that enable access to, and enjoyment of, the woodland by the local and wider community.
- Facilities eligible under Element 1 include new walking trails, seating and signage, such as information boards, interpretive aids and way-markers. Facilities eligible under Element 2 include playground equipment and fitness training equipment appropriate to the forest setting.
- Grant payments for Elements 1 and 2 will be made on the basis of actual costs incurred, up to the maximum grant specified for each Element.
- In the case of Element 1 (Trails, Seating & Signage), the entire area planted under FT3 is eligible (e.g. a 6ha site planted under FT3 is eligible for €3,800 x 6 ha), up to a maximum of €45,600 per application.
- In the case of Element 2 (Forest Playground), the grant is capped at €10,000 per application.
- Facilities funded under Elements 1 and 2 must be located within the footprint of eligible areas planted under FT3.
- The degree to which the site can be developed for recreational use will be determined by its proximity to a user group and the willingness of the applicant to develop the site for recreation. The installation of recreational facilities io forests created under this Scheme is not compulsory i.e. Elements 1 and 2 are optional.
- Where amenity trails, signage and seating are planned, these facilities must allow for reasonable access-for-all users, i.e. to enable people of different ages and abilities to use and enjoy the forest. Organisations such as Enable Ireland (www.enableireland.ie) and the UK's Fieldfare Trust (www.fieldfare.org.uk) provide relevant information and guidance on how best to implement such measures . Also see the DAFM's *Forest Recreation in Ireland: A Guide for Forest Owners & Managers* (2006).
- DAFM recognises that many of the facilities envisaged under Elements 1 and 2 are highly specialised in nature and require the input of other specialised expertise and potentially, other funding streams. Applicants may pursue recreational development

within the forests through alternative means i.e. other than Elements 1 and 2 of this Scheme, but must ensure that such development does not conflict with the requirements of FT / Element 3.

Overview of Recreation Elements 1 & 2

Recreation Elements	Facilities funded	Grant rate
Element1	Trails, Seats & Signage	Up to €3,800 / ha, capped at €45,600 per application Payable from Year 4
Element2	Forest Playground Equipment	Up to €10,000 per application Payable from Year 4

- In all cases, any facility installed must be suitably located and designed for durability and be in keeping with the woodland setting. See DAFM's *Forest Recreation in Ireland: A Guide for Forest Owners & Managers* (2006) for relevant information and guidance.
- Any project seeking support under Recreation Elements 1 and 2 must also have a clearly identified and significant 'user group' regarding existing or future amenity use. Such user groups shall be identified at Form 1 stage where funding under these Elements is being sought. Where user groups are not present due to the site's isolation or for some other reason, the Recreation Elements of the scheme shall not be made available.
- Under Elements 1 and 2, the grant is paid in its entirety at Form 3 stage (alongside the 2nd Instalment for FT3), subject to the presentation of vouched eligible expenditure exclusive of VAT.
- Supporting documentation in the form of invoices or documents of equivalent probative value (exclusive of VAT) must be provided when claiming payment under Elements 1 and 2. All invoices must clearly state the supplier, date, main operations, quantities and costs incurred. Grant payments for Elements 1 and 2 will be made on the basis of actual costs incurred, up to the maximum grant specified for each Element.
- VAT for related costs is not eligible to be claimed under this scheme.

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Form 1d: Notice of Commencement of the Installation of Recreational Facilities

Form 1d only applies where project approval has issued at Form 1 stage for one or both of Elements 1 and 2. It must be submitted *no later than 6 weeks before* installation works begin.

Within the above context, the Form 1d can be submitted any time *after* the submission of the Form 1c (Notice of Completion of Planting under Element 3) application and *before* the 2nd Instalment Planting Grant (Form 3 under Element 3) is request). If there are any changes to what was approved at Form 1 stage, the Applicant must detail these in the Form 1d, to enable the Department to assess whether such changes are material in nature.

The installation of facilities under Element 1 and/or 2 can only take place if approved at Form 1 stage. No payment in relation to recreation facilities can be made without this prior approval.

Similarly, the Form 1d must be submitted to the Department (to be sent to Form 3 Section, *via* e-mail to forestry.2ndgrant@agriculture.gov.ie) *no later than 6 weeks before* installation works begin. No payment in relation to recreational facilities can be made without the submission of the Form 1d (plus details of any changes, as per above).

Upon completion of the installation works, a map showing the recreational facilities installed must be provided at Form 3 stage (see below).

As with FT1, the Native Forest Framework (see Appendix 2) is used to identify the most appropriate native forest type for the plot. Once the scenario is identified, the framework then specifics which native forest species to plant, and the details regarding the species mix and planting design. The use of native provenance tree stock during establishment is prioritised. Establishment must also be achieved with minimal inputs, with cultivation largely limited to scrap or inverted mounding or no soil cultivation. The following native species may be planted within of plots of FT3, depending on the native forest type(s) identified for each plot using the Native Forest Framework:

- Common alder (*Alnus glutinosa*)
- Downy birch (*Betula pubescens*)
- Silver birch (*B. pendula*)
- Wild cherry (*Prunus avium*)
- Pedunculate oak (*Quercus robur*)
- Sessile oak (*Q. petraea*)
- Rowan (*Sorbus aucuparia*)
- Hazel (*Corylus avellana*)
- Hawthorn (*Crataegus monogyna*)
- Grey Willow (*Salix cinerea*)
- Scots pine (*Pinus sylvestris*)
- Holly (*Ilex aquifolium*)

It may be the case that certain former landfill sites or 'brownfield' sites may be suitable for forest establishment. In these cases, a further 'Derelict Site Grant' of up to €500 / ha may be payable under FT3 to undertake specific remedial operations necessitated by the site's status as a former landfill or brownfield site, subject to the production of relevant invoices for the amounts sought, for expenses specific to the preparation of such sites. All species must be planted at a stocking rate of2,5000 stems / ha on all sites and at a spacing of 2.0 x 2.0 m.

Rules specific to FT3 Forest Creation on Public Lands

- More than 1 plots may be submitted into a single Form 1 application. Multiple plots should be grouped according to their proximity to each other, bearing in mind that small areas may prove uneconomical for contractors. Sites can only be grouped if they are located within the same geographical area, as defined by a circle with a 6 km diameter.
- Applicants can only apply for Recreation Elements 1 and/or 2 in parallel with an application under Planting Element FT3, and only for the same area (or less) proposed for planting under FT3.
- The Department can use all information related to any project under this Scheme, including information relating to carbon and other information included in the Ecosystem Services Report, where this option is adopted.
- At all times, the State maintains its primacy on reporting rights in relation to the carbon captured by native woodlands established under this Scheme, as part of its international reporting obligations[1].
- The Department can use the name of the Public Body in its promotional literature and other promotional events relating to the Forest Creation on Public Lands Scheme or the related Afforestation Scheme. This may include (*inter alia*) press releases, brochures, seminars and field days.
- Where the Public Body engages in promotion, reporting or events relating to a project funded under this Scheme, it must refer to the Department's contribution. Suitable text is as follows: "The creation of this new Native Woodland was funded by the Department of Agriculture, Food and the Marine through the Afforestation - Forest Creation on Public Lands Scheme". Where facilities are also involved under Elements 1 and 2, the Department's contribution must also be recognised. Where the logo of the Public Body appears in relation to the woodland, so too should the Department's logo, in equal size and prominence.
- Projects involving entrance fees or any other economic activity are excluded from this Scheme.
- There can be no barrier to general public access, unless required to protect the health and safety of the public in case of hazardous events of a temporary nature. Access may also be restricted for specified periods of time where it is necessary to protect sensitive habitats or species or for some other environmental reason, or where vandalism or dumping are an issue. Where measures have been taken to prevent animal trespass, pedestrian access must be provided by a gate or stile or some other means. Public access does not confer any permanent rights to individual members of the public. If it proves necessary to restrict access to any recreational facility funded under this scheme, the Public Body must notify the Department in writing, specifying the reason for the restriction and the required duration of the restriction.
- The owner of the forest created under this scheme is encouraged to submit a Forest Management Plan with their application in Year 12, in a format agreed by the Minister for Agriculture, Food and the Marine.

[1] The State's obligations to report greenhouse gas emissions and greenhouse gas removals in the land use, land use change and forestry (LULUCF) sectors are set out under Regulation (EU) No 525/2013, while its accounting obligations are set out in Decision No 529/2013/EU up to 2020 and Regulation (EU) No 2018/841 ("the LULUCF Regulation") for the period 2021-2030. These relate to the EU's international commitments and obligations under the UN Framework Convention on Climate Change (UNFCCC) and the associated Kyoto Protocol and Paris Agreement.

- For clarity in relation to communication and payments, each application under the Scheme must involve a single, clearly-identified Public Body.
- DAFM's Woodland Environment Fund does not apply to this Scheme.
- For Public Bodies who wish to engage a Natural Capital Facilitator to assess the ecosystem service potential of the project for promotional and other purposes, the Department has no role in this arrangement.
- The Forestry Act 2014 sets out the legal framework governing the felling of trees, situations where a tree felling licence is required, offences, and penalties for breaches of the legislation. Unless exempt, forests require a felling licence before felling can take place. Where clearfelling is undertaken, replanting is typically made a condition of any associated licence. In most cases, therefore, forest land will remain as such in perpetuity. The Department's document *Felling & Reforestation Policy* (2017) provides a consolidated source of information on the legal and regulatory framework relating to tree felling.
- All costs accounted for in respect of Recreation Elements 1 and 2 will exclude VAT.
- The owner is responsible for all issues surrounding safety and public liability in relation to projects receiving funding under this scheme. Applicants should ensure that their woodland has adequate public liability insurance. No liability shall be attached to the Minister for any injury, loss or damage to any person or property in respect of the forest.

1.4 FT4 – NeighbourWood (NBR)

FT4 incentivises the creation of new forest that are designed for forest recreation. The scheme is aimed at private landholders, working in partnership with local communities and local authorities where appropriate. FT4 forest type can adjoin an existing private forest that is also applying for the Open Forest Scheme.

The type of recreational forest created can vary depending on size, location and intended uses. For example, new forests created under FT4 can reflect one or more of the following themes: close-to-home 'neighbourwoods', forest classroom developed for use by local school, 'heartwood forests' with a focus on physical exercise, or heritage forests celebrating some aspect of the area's natural, historical or cultural heritage. Forests developed under FT4 can be stand-alone or alongside an existing recreational forest, thereby expanding its area. They can be located in and around villages, towns and cities, or in a more rural setting, and where possible, should link into wider amenity networks, such as walking trails and greenways.

Typically, projects involving FT4 should involve consultation with intended user groups (often the local community), to ensure proper layout and design, with future walking trails, viewing spots, picnic areas and car parking left unplanted from the outset. (For guidance on developing new amenity woodlands, refer to Chapter 11 of the publication Amenity Trees and Woodlands: A Guide to their Management in Ireland (Tree Council of Ireland, 2010).)

Suitable projects under FT4 must have a clear potential for the development of an attractive amenity forest in areas that are strategically located, easily accessible and can be or are being well used by local people. There are two Elements to FT4 i.e. Element 1: NeighbourWood

establishment and 2: NeighbourWood Recreation Facilities. Factors for eligibility will include the suitability of location, the level of existing use, attractive natural features, local interest, linkage with wider walking routes and other amenities, etc. Suitable projects for FT4 establishment will also place a particular focus on the provision of reasonable access-for-all, to enable people of different ages and abilities to use and enjoy the forest.

The species listed below are acceptable for establishment under Element 1 of FT4. All mixtures used must be silviculturally compatible, and full details are to be provided in the application. Other species may also be acceptable to the Department but must be approved in advance. The species included may be native, naturalized or non-native or any combination of same. In selecting species, applicants under FT4 can opt to use the Native Forest Framework (see Appendix 2) to identify the most appropriate native forest scenario for the site.

Broadleaf Species	**Conifer Species**
Common alder (*Alnus glutinosa*)	Western red cedar (*Thuja plicata*)
Beech (*Fagus sylvatica*)	Douglas fir (*Pseudotsuga menziesii*)
Downy birch (*Betula pubescens*)	Grand fir (*Abies grandis*)
Silver birch (*B. pendula*)	Western hemlock (*Tsuga heterophylla*)
Wild cherry (*Prunus avium*)	European larch (*Larix decidua*)
Spanish chestnut (*Castanea sativa*)	Corsican pine (*P. nigra* var. *laricio*)
Lime (*Tilia cordata*)	Lodgepole pine (*P. contorta*)
Norway maple (*Acer platanoides*)	Monterey pine (*P. radiata*)
Pedunculate oak (*Quercus robur*)	Scots pine (*P. sylvestris*)
Sessile oak (*Q. petraea*)	Coast redwood (*Sequoia sempervirens*)
Rowan (*Sorbus aucuparia*)	Norway spruce (*Picea abies*)
Sycamore (*Acer pseudoplatanus*)	Sitka spruce (*P. sitchensis*)
Hazel (*Corylus avellana*)	
Hawthorn (*Crataegus monogyna*)	

Certain former landfill sites or 'brownfield' sites may be suitable for forest establishment under FT4. In these cases, a further 'Derelict Site Grant' of up to €500 / ha may be payable under FT4 to undertake specific remedial operations necessitated by the site's status as a former landfill or brownfield site, subject to the production of relevant invoices for the amounts sought, for expenses specific to the preparation of such sites.

All species must be planted at a stocking rate of2,5000 stems / ha (i.e. at a spacing of 2.0 metres x 2.0 metres).

Application requirements for FT4 at Form 1 stage

To be considered complete, the following additional documentation is also required:

- **Certified Species Map**, signed by the Registered Forester. This map is used for area and grant calculation. The standard mapping conventions set out in this document apply. The areas relating to the different elements being applied for must be accurately mapped and labelled as follows: Element 1:

    - NBR Establishment Element 2:
- NBR Facilities Aerial photos must be scaled at 1:5000 for clarity, and must be appropriately titled and cross referenced with the relevant text elsewhere within the plan.
- Each map should accurately represent the information being illustrated and be legible.
    - In all maps, the perimeter of the overall
- NeighbourWood Scheme site should be outlined in red.
- Features and attributes must be clearly indicated using symbols, colours, letters, text and-arrows, etc. and a concise legend. Linear features (e.g. existing footpaths, streams, hedgerows) should be indicated using colour-coding, and individual features (e.g. viewpoints, proposed seating) by letters or symbols.
- Applicants should be aware of the value of aerial photographs for mapping, particularly in locating existing site features, habitats, boundaries and reference points. The NeighbourWood Plan can be accompanied by additional material such as site photos, supporting literature, letters of support and local newspaper articles.
- The **NeighbourWood Plan**, details various aspects of the project and how it mees key FT requirements. The plan also details the specific works proposed under each element being applied for. The NeighbourWood Plan will also serve as a basis for project partners to set out how the project will evolve over time as the forest develops. The NeighbourWood Plan must be signed by the Applicant and the Registered Forester.
- **Site location map**, which based on a Discovery Series 1:50,000maps, showing the main access approach onto the site. The standard mapping conventions set out in this document apply.
- Documentation clearly demonstrating partnerships on which the proposal is based. Such partnerships will typically involve the private the landowner (public or private) and the local community.

Element 2: NeighbourWood Recreation Facilities

Element 2 provides funding for the installation of suitable recreational facilities, including features such as trails, seats, signs (including directional and interpretative signage) and parking to cater for the general use, and specialised facilities for particular user groups.FT4 Projects have an upper limit of 12ha. Under Element 2, projects can receive up to €4,200 / ha, based on approved work.

Element 2 is aimed at funding facilities that enable access to and enjoyment of the forest by the community. Such facilities include footpaths, signage, way markers, car-parking, seating and picnic tables.

Eligible operations are as follows:

- Materials, items and works associated with the installation of appropriate recreational facilities within an existing Open Forest (including Open Forests established under FT4).
- Other appropriate operations, where pre-approved by the Forestry Division.

All facilities must satisfy the following criteria:

- All facilities (including footpaths) must be oriented to facilitating access for all.
- Facilities must be sensitively designed and appropriate to the forest setting.
- Facilities must be high quality, durable and resistant to damage.
- Primary footpaths should be looped in a circuit and should have a durable walking surface (hardcore and top-dressed) of at least 1. s in width.
- Facilities must be appropriately distributed and positioned e.g. seats throughout the entire site.
- Favour quality over quantity. Focus on positioning a carefully selected number of high quality facilities at key points within the woodland.
- Provide full details of the proposed facilities, in the Form 1 application). This includes proposed positions, dimensions and other specifications. Established design standards should be used where available, and cited in the application form. If possible, include photos of the proposed facilities (or similar) *in situ* elsewhere or technical drawings with dimensions.
- Unless otherwise agreed in advance with DAFM, the positioning and design specifications detailed in the application form must be adhered to. Applicants are encouraged to adhere to established standards and specifications regarding outdoor recreational facilities, while also sympathetic to the forest setting.

See the then Forest Service's *Forest Recreation in Ireland: A Guide for Forest Owners and Managers* for information on facilities for woodland recreation. Projects involving recreational trail development should adhere to the trail standards recommended by the National Trails Office (www.irishtrails.ie/national_trails_office). When preparing an application under Element 2, a preliminary trail development survey should be completed to assist project development groups in quantifying all necessary and appropriate works.

Facilities eligible under Element 2 can include specifically designed 'calorie-count' walks and fitness trails, in order to promote green exercise.

Other facilities targeting particular user groups can also be submitted, e.g. hides for birdwatching. However, in such cases, DAFM will require proof of consultation with the intended user group, and demonstration that the plans for the facilities in question adhere to recognised standards relating to the use / activity in question.

Other types of facilities deemed by the Forestry Division to be highly specialised in nature (such as fitness training equipment and children's' playground equipment) will not be eligible for funding under the FT4 and Applicants are encouraged to seek alternative sources of funding for these features. Contact DAFM for clarification, if uncertain as to whether or not a particular facility is eligible under Element 2.

- **Under Element 2: Facilities, projects are eligible for funding for approved works, up to a maximum of €4,200 / ha and an upper limit of 12 ha, as set out previously.** The application process under FT4 NeighbourWood involves the completion and submission of a NeighbourWood Plan. As well as addressing key aspects required in order to facilitate the Forest Service in its evaluation of the application, the NeighbourWood

Plan will also serve as a basis for project partners to set out how the project will evolve overtime.

- In order to ensure that key aspects are addressed, the NeighbourWood Plan must adhere to the following template, addressing each part in turn.
- The NeighbourWood Plan must be developed by the Applicant and a Forest Service Registered Forester, and with input from the various project partners.
- Maps are required to illustrate particular information within the NeighbourWood Plan. These maps, to be incorporated into the plan itself.

1.5 FT5 – Emergent Forest / Rewilding

Forest establishment under FT5 involves the protection and enhancement (primarily through enrichment planting, if needed) of young native forests already emerging on the site though natural regeneration. These early stage 'emergent' forests typically comprise pioneer species of trees and scrubs arising from local seed sources, and / or through the introduction of seed onto the site from further afield, by wind, birds, etc. Incorporating FT5 emergent forests into the Forestry Programme 2023-2027, protects these 'rewilding' habitats and ensures that they will continue to develop into native forests.

FT5 aims to protect emergent forests and to enable them to continue regeneration over time to develop into native high forest. Emergent forests represent an element within the wider landscape which have the potential to strengthen biodiversity and ecosystem resilience. With retention and appropriate intervention (e.g. fencing, respacing), they have the potential in their future to produce wood under a Continuous Cover Forestry (CCF) system. FT5 is designed to encourage landowners to consider the possibility of retaining existing emergent forest and to allow this habitat to grow on as native woodland, for both environmental and wood production purposes.

To be eligible under this category, the emergent forest must comprise early-stage forest dominated by non-commercial native pioneer species sometimes referred to as scrub(*). It must have an average canopy height of 1.5 metres or greater, with a clear potential for canopy closure within 6 years. Open gaps of up to one-third of the area of a plots in the emergent canopy can be accepted within the area submitted. Such gaps must be targeted with enrichment planting, selecting species from the appropriate Native Forest Framework (see Appendix 2) scenario identified for each plot and must be planted at a stocking rate of1,1000 stems / ha on all sites a spacing of 3.0 x 3.0 metres.

Furthermore, the plot must be situated on a mineral soil. (This requirement is designed to focus resources on the less frequent types of emergent forests, which are often at the greatest risk of being removed.)

(* The type of habitat eligible under FT5 generally equates to Scrub/Transitional Woodland (WS1) in Fossitt's *A Guide To Habitats in Ireland* (2000). Note, existing native forests that may be of lesser canopy height(e.g. hazelwood) are not eligible under FT5, as these generally have already undergone the early stages of succession and are already exhibiting the characteristics of a climax forest. Support will be available under FT5 for the following operations on eligible sites:

- Purchase of suitable native planting stock for enrichment planting
- Ground preparation, where appropriate (e.g. light scarification to facilitate natural regeneration)
- Enrichment planting in existing canopy gaps within the emergent woodland
- Forest protection (fencing and tree guards)
- Clearance of invasive species such as laurel, rhododendron and non-native tree species
- Maintenance (including vegetation management)
- Woodland edge management
- Maintenance of open spaces, rides and glades
- Re-spacing
- On application, other related operations, as deemed appropriate and as approved by the Forestry Division, DAFM.

Note, FT5 plots can be planted alongside other FT types within the same overall afforestation proposal.

The following native species may be planted within of plots of FT5, depending on the applicable scenario identified for each plot using the Native Forest Framework:

- Common alder (*Alnus glutinosa*)
- Downy birch (*Betula pubescens*)
- Silver birch (*B. pendula*)
- Wild cherry (*Prunus avium*)
- Pedunculate oak (*Quercus robur*)
- Sessile oak (*Q. petraea*)
- Rowan (*Sorbus aucuparia*)
- Hazel (*Corylus avellana*)
- Hawthorn (*Crataegus monogyna*)
- Grey Willow (*Salix cinerea*)
- Scots pine (*Pinus sylvestris*)
- Holly (*Ilex aquifolium*)

1.6 FT6 – Broadleaf (mainly oak and beech)

A FT6 plot is generally comprised of pure oak (pedunculate oak or sessile oak). This FT is aimed at the growing of high-quality broadleaves to produce quality hardwood timber. Beech may also be acceptable for planting in FT6 plots. Oak (or beech) must be planted pure at a stocking rate of 2,500 stems/ha on all sites i.e. a spacing of 2.0 metres x 2.0 metres.

On large sites where additional shelter is required, an appropriate nurse species may be introduced. The nurse species can make up 30% of the total stems per hectare. Alternate lines of broadleaf / conifer are not allowed. Line mixtures of 1 in 10 are allowed. Remove the nurse species if or when they begin to dominate or interfere with the height and crown development of the main species i.e. oak/ beech. A nurse species can be planted in group, and may consist of between 25 to 100 trees, nurse groups must be evenly distributed across the site. Refer to section 8 of this document for guidance on the optimal sites for this FT.

1.7 FT7 – Diverse Broadleaf

This forest type is comprised of an acceptable broadleaf species, other than oak/ beech. This FT is aimed at the growing of high-quality broadleaves to produce quality hardwood timber. The following species may be planted as part of FT7 plots:

- Common alder (Alnus glutinosa)
- Italian alder (Alnus cordata)
- Southern beech (Nothofagus procera/Nothofagus obliqua)
- Downy birch (Betula pubescens)
- Silver birch (Betula pendula*
- Wild cherry (Prunus avium)
- Spanish (Sweet) Chestnut (Castanea sativa)
- Common hornbeam (Carpinus betulus)
- Common lime (Tilia × europaea/Tilia cordata/Tilia platyphyllos)
- Norway maple (Acer platanoides)
- Red oak (Quercus rubra)
- Rowan* (Sorbus aucuparia)
- Sycamore (Acer pseudoplatanus)

*Tree species not currently on the list of approved species. These species may be considered in certain circumstances after consultation with the Forestry Division.

All species must be planted pure at a stocking rate of 2,500 stems per hectare on all sites (i.e. a spacing of 2.0 metres x 2.0 metres). On larger sites where additional shelter is required, an appropriate nurse species may be introduced. The nurse species can make up 30% of the total stems per hectare. Remove the nurse species if or when they begin to dominate or interfere with the height and crown development of the main tree species. Refer to section 8 of this document for guidance on the optimal sites for this FT.

1.8 FT8 – Agroforestry

The agroforestry initiatives incentivised by the 2023-2027 Forestry Programme include Silvopastoral and Silvoarable systems.

Silvopastoral

Forest establishment under FT8 has been designed to create Silvopastoral agroforestry systems i.e. a combination of forestry and pasture on the same area of land. The measure will improve the sustainability of conventional widespread agricultural systems. The trees will mitigate the negative effects of climate change, improve animal welfare, increase biodiversity, produce renewable energy, protect water, enhance the landscape and produce quality timber. This measure will also afford the land shelter and will contribute to soil amelioration.

Site types should typically contain free draining mineral soils and have no requirement for additional drainage. There should be no requirement for herbicides or fertilizers. Supplements for grass growth would need to be agreed with of organic farming certification body if the farm enterprise is classified as organic.

Ground preparation may include pit planting, ripping or the use of an auger or no soil cultivation. Headlands for machinery will be required to allow for machines to turn at the end of each row subject to environmental setbacks.

Vegetation control can be carried out by livestock or in the process of cutting hay or silage. If vegetation is growing within the tree shelter the shelter can be pushed up and grass pulled out at the bottom.

A minimum stocking rate of 400 trees per ha is required. A minimum eligible plot size is 0.25 hd. When trees are planted in rows the maximum distance between rows should be 10 m. Trees within the rows should be no closer than 2 metres apart. Where wide spacing between rows is prescribed it will be necessary to plant, the balance of the required 400 stems per hectare along field margins. Acceptable broadleaf species include oak, sycamore and cherry Italian alder, red alder, walnut and red oak. Plants should be at least 60 cm. Other species, including conifers, may be considered on a site-by-site basis. It is acceptable to have 15% fruit or/and nut species, it is recommended that these are planted in sunny unshaded areas in groups where they will not have to compete with timber producing species as with all proposals, species selection should be guided by Section 8 of this document.

Each tree planted is required have 2 stakes and a tree shelter to support and protect trees from browsing, rubbing or fraying.

The following agricultural activities will be permitted within the established FT8 plot where such activity is not contrary to the protection of the trees therein:

Pasture: Grazing by sheep, poultry or young calves is permitted during the spring, summer and autumn months for the first 6-8 years, depending on tree growth and soil conditions.
Each tree will be protected with a rigid tree shelter of 1.5 metre tall. The shelter will be supported

and protected by two posts. The first post will be (7 cm wide) or a half round post of between (13cm and -16 cm top diameter) and will provide a flat surface which will help prevent the shelter being turned around the post. The second post (7cm) will protect the shelter from being crushed. Both posts should be 1.5metres tall. The tree shelters should be checked regularly ensuring that the posts are not pushing in on the shelters. The shelter will be secured to the posts with wire. Thereafter, when tree shelters may be replaced with plastic mesh and the presence of larger animals in the plot may then be considered. Trees might need to be pruned, if growth is vigorous, to prevent the crown becoming top heavy.

Fodder: Silage and hay production is permitted. It is important that appropriate machinery is used when cutting silage and/or hay to ensure that the trees are not inadvertently damaged.

Areas established under FT8 are considered to meet the definition of forest as defined in the Forestry Act 2014 and are therefore subject to felling licence requirements and a replanting obligation post felling. Support for the establishment of demonstration plots for research purposes may also be considered under this scheme.

Silvopastoral premia will be paid for 10 years at a rate of €975 per annum.

Silvoarable Pilot

Silvoarable agroforestry is a system of growing crops of cereals, fruit and vegetables growing amongst trees. This measure will not require tree shelters as there will be no grazing. The crops will be grown amongst single trees, rows or groups of trees. This Pilot measure will allow farmers to farm in a more sustainable way. The trees will mitigate the negative effects of climate change, improve animal welfare, increase biodiversity, produce renewable energy, protect water, enhance the landscape, and produce quality timber. This measure will afford the land shelter and will contribute to soil amelioration.

This measure will need a clear strategic plan taking into consideration a long-term vision for the farming enterprise. As with growing mixtures of trees, growing trees with arable crops demands a greater level of attention to detail and knowledge as care must be taken to ensure the compatibility of the systems constituent components. Headlands for machinery will be required to allow for machines to turn at the end of each row subject to environmental setbacks. Horticultural input into training and design would be beneficial and could be incorporated into the Knowledge Transfer Groups training in Intervention 5 of the new Forestry Program.

Once land is converted to agroforestry, it will be classified as forest land and the provisions of the Forestry Act 2014 will appl which includes the provisions for the replanting of an area following felling apply. Eligible tree species include broadleaves and conifers and will be assessed on a site-by-site basis. Fruit and nut trees can account for 20% of species planted. The financial support through grant aid will be less than that for Silvopastoral Systems in that the plants will not require the same level of protection. In some cases, rabbit protection or deer fencing may be required.
A Grant of €6,000 will be paid in two instalments. The first instalment, representing

approximately 75% of the total grant due, will be payable immediately after planting. The second instalment (25%) will be payable not sooner than 4 years after planting. In situations where shelters are not required a 30% reduction will be imposed unless other costs can be demonstrated. Fencing Grant is also available.

Silvoarable premiums will be paid for 10 years at a rate of €829 per annum.

Annual Target. This measure should initially be set up on a pilot bases, with a maximum of 30ha per year for 4 projects for a maximum of 7.5ha per project.

Forest Gardening Pilot

To establish carefully planned and constructed forest gardens. The objective is to provide robust, small-scale forests that provide a source of organic forest food. The trees will mitigate the negative effects of climate change, improve animal welfare (most likely poultry), increase biodiversity, produce renewable energy, protect water enhance the landscape, and produce quality timber. The income from the forest produce will help diversify the farm income.

Starting with a 1 ha limit per landowner with a national ceiling of 6ha annually. A design plan would need to be submitted with each application. Up to 40% of the trees planted could be fruit and nut trees. Once land is converted to agroforestry, it will be classified as forest land and the provisions of forest legislation will apply.

Funding will cover the cost of design and establishment. A premium will be paid in recognition of the environmental benefits the trees are giving, in accordance with the grant premium payment structure. Trial plots should be considered in the short term as design and layout are critical for this measure to explore the best approach for Irish conditions.

A Grant of €6,000 will be paid in two instalments. The first instalment, representing approximately 75% of the total grant due, will be payable immediately after planting. The second instalment (25%) will be payable not sooner than 4 years after planting. Fencing Grant is also available.
Forest Gardening premium will be paid for 10 years at a rate of €829 per annum.

Note – Silvoarable and Forest Gardening Pilots will not open for application with the Afforestation Scheme. A circular will issue when they launch.

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1.9 FT9 – Seed Orchards

The aim of incentives made available under FT9: Seed Orchards is to increase the availability of quality of forest tree seed through support for the establishment of seed orchards.

A seed orchard is a forest stand of selected individual trees or families which is isolated or managed to avoid or reduce pollination from outside sources, and to produce frequent and abundant and easily harvested crops of seed of known provenance. Typically seed orchards represent populations in which superior individuals (known as 'plus trees') are planted together so that mutual mating can occur. Seed orchards may also be used to increase the production of reproductive material from indigenous, scattered, or endangered tree species, for example to increase the availability of reproductive material for native woodland establishment or conservation.

FT9 supports the establishment of outdoor seed orchards. Seed orchards will only be supported under this measure if they comply with Council Directive 1999/105/EC on the Marketing of Forest Reproductive Material as transposed into Irish law by SI No. 618/2002 - European Communities (Marketing of Forest Reproductive Material) Regulations 2002. It follows therefore that seed orchards must meet the minimum requirements for the approval of basic material intended for the production of reproductive material to be certified as either 'Qualified' or 'Tested'.

The maximum eligible area for outdoor seed orchards is 5 ha and while technical approval for a larger area may be issued by the Department, available funding will be capped to a maximum of 5 ha. Public and private forest-holders will be eligible for support. Not all seed orchard proposals will be funded. For example, where there is sufficient supply of seed of approved species and provenances already being produced, financial support will not be approved.

FT9 supports the establishment of seed orchards compliant with Council Directive 1999/105/EC for the following species:

- Pedunculate oak (Quercus robur)
- Sessile oak (Quercus petraea)
- Sycamore (Acer pseudoplatanus)
- Spanish chestnut (Castanea sativa)
- Sitka spruce (Picea sitchensis)
- Scots pine (Pinus sylvestris)
- Silver birch (Betula pendula)
- Downey birch (Betula pubescens)
- Common alder (Alnus glutinosa)

Seed orchards for native tree species, in addition to those listed above, may also be funded under the Scheme, on application. This may include, for example, ash (Fraxinus excelsior) with demonstrated putative tolerance to the ash dieback pathogen *Hymenoscyphus fraxineus*, or seed orchards of native broadleaf species of indigenous origin where the purpose of establishment is gene conservation.

FT 9 Seed orchards applicants must include:

- A Forest Management Plan (FMP) regardless of their area.
- An Orchard Description document to include:

- A description of the species and genetic material including supporting information that demonstrate that the basic material meets the minimum requirements to be certified as 'Qualified' or 'Tested'.
- A description of site location and orientation, including distance to potential contaminating pollen, soil description and suitability.
- The plot layout taking into account pollination requirements and outcrossing (where relevant), methodologies envisaged for encouraging seed production, rationale in support of establishing the seed orchard being proposed and any other information that describes the proposal.
- In the case of clonal seed orchards, the application must also include an indication of the number of genotypes, their origin and the number of ramets used per genotype.
- In the case of breeding seedling orchards, the application must also include an indication of the number of individual parent trees which contributed sets of progeny for the orchard and the number of trees per family in the orchard to be established.
- Details of crossing design and field layout.
- Qualifications and experience of the key personnel involved.

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1.10 FT10 – CCF - Continuous Cover Forestry

FT10 is designed to incentivise the establishment of a multifunctional forests which are designed to be managed using the continuous cover system forests. From establishment differential growth rates of the various species planted will result in a structurally diverse canopy. CCF can be managed to produce long lived timber product, minimise landscape and soil disturbances, while also maximising carbon storage. Structurally diverse forests managed under CCF also lend themselves to the utilisation of natural regeneration and the inclusion of a variety of tree species which both enhance long term resilience and adaptability to climate change. CCF also promotes the recreation and amenity functions of the forest. Continuous Cover Forestry combines conservation and wood production, they promote management strategies which optimises the utilisation of ecosystem services through sustainable forest management principles. Increasing forests resilience to climate change and storm damage while promoting the recreational, amenity and cultural values of forests through the establishment of diverse species composition and forest structure.

Scenario	**Planting mixture**
Scenario 1: Sitka Spruce/ other conifer, Oak plus other broadleaves.	Sitka Spruce (55%), other conifer (25%) (minimum of two other conifer species), Oak (10%) other broadleaves (10%). Changes + or – 20% for each species will be accepted. (Sitka Spruce to a max of 55% of total area). Species selection should reflect site type. Conifers can be planted intimately, in line mixtures or Group mixtures (25 to 100 trees per group). Broadleaves suited to the site should also be incorporated into small groups of 25 to 100 trees per group. Minor species to be planted along the edge of the emerging canopy and / or alongside hedgerows. Mandatory minimum 20% broadleaf requirement for this FT
Scenario 2: Norway Spruce or Western Red Cedar and other broadleaves.	Norway Spruce (55%), other conifer (25%) (minimum of two other conifer species), Oak (10%) Other broadleaves (10%). Changes + or – 20% for each species will be accepted. (Sitka Spruce to a max of 55% of total area). Species selection should reflect site type. Conifer can be planted in Intimate line mixtures or Group mixtures (25 to 100 trees per group). Broadleaves suited to the site also to be incorporated in small groups 25 to 100 trees per group. Minor species to be planted along the edge of the emerging canopy and / or alongside hedgerows. Mandatory minimum 20% broadleaf requirement for this FT

All species must be planted at a stocking rate of2,5000 stems / ha on all sites and at a spacing of 2.0 x 2.0 metres.

Eligible conifers are as follows:

- Norway spruce (Picea abies)
- Serbian spruce (Picea ormorika)
- Lodgepole pine (Pinus contorta)
- Scots pine (Pinus sylvestris)
- Monterey pine (Pinus radiata)
- European larch (Larix decidua)
- Douglas fir (Pseudotsuga menziesii)
- Grand fir (Abies grandis)
- Western hemlock (Tsuga heterophylla)
- Western red cedar (Thuja plicata)
- Monterey Cypress (Cupressus macrocarpa)
- Coast redwood (Sequoia sempervirens)
- Lawson cypress (Chamaecyparis lawsoniana)

Eligible broadleaves are as follows:

- Common alder (Alnus glutinosa)
- Italian alder (Alnus cordata)
- Beech (Fagus sylvatica)
- Southern beech (Nothofagus procera/Nothofagus obliqua)
- Downy birch (Betula pubescens)
- Silver birch (Betula pendula)
- Wild cherry (Prunus avium)
- Spanish (Sweet) Chestnut (Castanea sativa)
- Common hornbeam (Carpinus betulus)
- Common lime (Tilia × europaea/Tilia cordata/Tilia platyphyllos)
- Norway maple (Acer platanoides)
- Pedunculate oak (Quercus robur)
- Sessile oak (Quercus petraea)
- Red oak (Quercus rubra)
- Rowan (Sorbus aucuparia)
- Sycamore (Acer pseudoplatanus)

Please refer to Sections 8.6 and 8.7 for guidance on planting mixtures.

1.11 FT11 – Mixed high forests: Diverse Conifer, minimum 20% broadleaves

FT11 is comprised of a plot planted with eligible conifer species, excluding Sitka spruce, with a minimum of 20% broadleaves. Eligible conifers are as follows:

- Norway spruce (Picea abies)
- Serbian spruce (Picea ormorika)
- Lodgepole pine (Pinus contorta)
- Scots pine (Pinus sylvestris)
- Monterey pine (Pinus radiata)
- European larch (Larix decidua)
- Douglas fir (Pseudotsuga menziesii)
- Grand fir (Abies grandis)
- Western hemlock (Tsuga heterophylla)
- Western red cedar (Thuja plicata)
- Monterey Cypress (Cupressus macrocarpa)
- Coast redwood (Sequoia sempervirens)
- Lawson cypress (Chamaecyparis lawsoniana)

The conifer species can be planted pure or intimately mixed throughout an FT11 plot or planted in groups or a combination of both (where silviculturally compatible). The broadleaf content must be at least 20% of the total number of trees planted. All species must be planted at a stocking rate of 2,500 stems / ha on all sites at a spacing of 2.0 x 2.0 metres. Suitable broadleaf species

that can be planted intimately in FT11 plots are as per those species listed for FT10 above. Other broadleaf species may also be considered on request. Please refer to Sections 8.6 and 8.7 for guidance on planting mixtures.

1.12 FT12 – Mixed high forests with Sitka Spruce, minimum 20% broadleaves

This forest type is comprised of a plot Sitka spruce plus a minimum 20% broadleaves by area. A plot established under FT12 comprises an intimate mix of Sitka spruce and /or Lodgepole Pine together and can also include suitable diverse conifers (see FT11). The broadleaf content must be at least 20% by area. As per the diverse conifer component the broadleaf species can be intimately mixed throughout the forest or planted in groups through the forest, or a combination of both (where silviculturally compatible with the main species).

All species must be planted at a stocking rate of 2,500 stems / ha on all sites and at a spacing of 2.0 x 2.0 metres. Other broadleaf species may also be considered on request Please refer to Sections 8.6 and 8.7 for guidance on planting mixtures.

1.13 Grant and Premium Rates

The maximum grant and premium rates are detailed in Tables 1 and 2 below. The afforestation grant is a fixed grant to cover the costs incurred in the establishment of a forest and paid exclusive of VAT over two instalments immediately after planting (75% grant payment) and after successful establishment (25%) approximately 4-6 years after initial planting. An additional allowance for fencing (to the maximum rates detailed below) is payable with the 1st grant instalment in Table 2.

Table 1: Fixed Grant Rates

	Forest Type	Grant/ha	Annual Premium/ha	Duration of Premiums for farmers	Duration of Premiums for non-farmers
FT1	Native forests	€6,744	€1,103	20	15
FT2	Forests for water*	€6,744	€1,142	20	15
FT3	Forests on Public Lands**	€10,544	€1,103	n/a	15
FT4	NeighbourWoods***	€10,200	€1,142	20	15
FT5	Emergent Forest	€2,500	€350	20	15
FT6	Broadleaf, mainly oak and beech	€6,744	€1,037	20	15
FT7	Diverse Broadleaf	€4,314	€973	20	15
FT8	Agroforestry	€8,555	€975	10	10
FT9	Seed Orchards	€10,000	€1,142	20	15
FT10	Continuous Cover Forestry	€5,421	€912	20	15
FT11	Mixed high forests: Diverse Conifer, 20% broadleaves	€4,452	€863	20	15
FT12	Mixed high forests with mainly spruce 20% broadleaves	€3,858	€746	20	15

Native Tree Area Scheme will be paid at FT1 and FT2 rates. Premiums will be paid over 10 years rather than 20 at a rate of €2,206 per ha annually for NTA1 and €2,284 per ha annually for NTA2
* Additional payment of €1,000 per ha will be paid to landowner on completion of planting
** Grant includes Trails, Seats & Signage Facilities payment
*** Grant includes Facilities payment

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Table 2: Fencing Grant Rates

Fence Type	€ per metre (IS436 rates)	€ per metre (non IS436 Rates)	IS436 (160m/ ha cap)	Non IS436 (120m/ha cap)
Stock	5.50	4.50	Max €880/ha at forest level	Max €540/ha at forest level
Stock/ Sheep	7.00	5.00		
Stock/ Rabbit	7.00	6.50		
Upgrade to deer	9.00	8.00	€1,440/ha	€960/ha
Deer	18.00	14.00	All deer fencing must be approved in advance. Only sites where at least 70% of the area enclosed by the deer fence of FT1 - FT11 is eligible.	
Deer/ Rabbit	18.00	14.00	New Deer fencing capped at €2,880/ha	New Deer fencing capped at €2,100/ha

The maximum metres of fencing funded will be based on the total lengths of new fences erected to Forest Service specifications and based on the area of the forest multiplied by 160 metres, where IS436 is used exclusively, irrespective of fence type erected. Maximum fencing cap of €50,000 per forest. Where non IS436 deer fencing is used a cap of 150 metres per ha will apply to the deer fencing element and capped at €2,100 per/ha.

Forest Creation – Proposed Environment Report Grant (ERG)

All afforestation projects can now avail of the ERG to help offset the environmental reporting costs incurred in the application process.

Table 3: Environment Report Grant

Environment report and associated grant	The aims of the environment report and associated grant are: (i) to increase the quality of afforestation applications, particularly in relation to potential environmental sensitivities; (ii), to increase the throughput of applications by DAFM; and (iii) to ensure applicants and their agents are reasonably reimbursed for the additional costs associated with the required standard and scope of the environmental reports submitted. Payments for the environmental report will be paid at form 2 stage on completion of planting. Environmental reports that are eligible for this grant may include: • A Pre-Screening Report • A Habitat Description and Map • An Ecology Report covering non-Appropriate Assessment ecology requirements • A Natura Impact Statement. • Archaeology Impact Assessment • Archaeology Monitoring Report Other reports, such as bird surveys, botanical surveys water and landscape-related assessments and Environmental Impact Assessment Reports may also be required and are also eligible.	Grant €450 per ha for first ha €400 for second ha €350 for third ha €50 per ha for subsequent hectares to a maximum of 20 hectares

Appendix 2: Native Forest Framework

Overview

The following Native Forest (NF) Framework applies to the following elements of the Forestry Programme 2023-27, as detailed in the respective scheme documentation:

- The following Forest Types (FTs) under the Afforestation Scheme:
  - FT 1 – Native Forests
  - FT 2 – Forest for Water
  - FT 3 – Forest Creation on Public Lands
  - FT 5 – Emergent Forest / Rewilding (in relation to enrichment planting in gaps within the existing emergent forest)
- Native Forest Conservation Scheme; and
- Element 2: Native Forest of the Reforestation for Climate Resilience Scheme (onsite after the clearfelling of the existing conifer stand).

Its purpose is to identify, at pre-application stage, the most appropriate native forest type to promote onsite.

The Registered Forester and Ecologist (*) appraises the site in terms of its location, soil (see Section 1) and main habitats & vegetation, and matches it to one of six scenarios, named after the basic soil type:

- Scenario 1: Podzols *(Oak-Birch-Holly Forest)*
- Scenario 2: Brown Podzolic *(Oak-Birch-Holly with Hazel Forest)*
- Scenario 3: Brown Earths *(Oak-Ash-Hazel Forest)*
- Scenario 4: Gleys *(Alder-Oak-Ash Forest)*
- Scenario 5: Highly Modified Peat & Peaty Podzols *(Pioneer Birch Forest)*
- Scenario 6: Alluvial Floodplain *(Alluvial Forest)*

(If two or more scenarios are identified for different parts of the site, these are represented by separate plots.)

The framework then identifies the associated scenario (as set out above, in brackets) and the relevant species mix & planting pattern to promote it, either through afforestation (under FTs 1, 2, 3 and 5), restoration planting (under NWS Conservation).

(* Applications under FT 1, 2, 3 and 5, and Element 2 of the Reforestation for Climate Resilience Scheme, must involve a Native Forest Scheme Forester, i.e., a Registered Forester who has also completed the 2- or 3-day Native Forest Scheme Training Course (formerly Native Woodland Conservation Scheme Training Course) held by DAFM in conjunction with Woodlands of Ireland. Applications under Native Forest Conservation must involve a NWS Forester and a NWS Ecologist, that latter having satisfied various criteria including completion of the course.)

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Important notes:

- Any scenario selected must reflect the location and soil and the main habitats & vegetation (as described in the Native Forest Framework). Mismatch will result in the applications being returned for adjustment and resubmission.
- High biodiversity habitats that correspond to Annex I listed habitats (EU Habitats Directive (92/43/EEC) are not eligible under the Afforestation Scheme, regardless of the FT proposed.
- As per Forest Service Circular 01/2023, the planting mixtures prescribed under each scenario take account of current shortages of different minor species, to ensure that a suitable species mix is planted for all the scenarios. Further adjustments may be necessary in the future for the same reason and will be communicated *via* Circular and updates to this document.
- Downy birch forms part of several planting mixtures set out in the Framework. From 2019, the use of improved 'qualified' downy birch planting stock is required.
- Due to Ash Dieback Disease, ash is excluded from the NW Framework.
- This version of the Native Forest Framework introduces Scenario 6: Alluvial floodplains / Alluvial Forest, in support of Forest Type (FT) 2 under the Afforestation Scheme, which may in certain projects involve proposals for the creation of new alluvial forests.

The Native Forest Framework has been developed with input from Woodlands of Ireland and the National Parks & Wildlife Service and will be kept under review. (Images by J.Cross, D.Little and DAFM.)

Afforestation Scheme FT 1, 2, 3 and 5: Instructions for the NWS Forester

1. Using the Native Forest Framework, assess the site in terms of its topographical location, soil, main habitats and vegetation. Compare this information with the descriptions given in the Native Forest Framework, and select which one of the scenarios applies.
2. The framework gives a short description and image of the native forest type associated with that scenario. This forest type becomes the 'target' forest to promote onsite, through afforestation.
3. The species mixture and planting pattern required to promote this forest type are listed (other native species, including shrub species and ground flora, will colonise naturally over time). Note, the species mixture and planting pattern *must be adhered to* in order to be eligible for support under the FT being applied for. A tolerance of +/- 25% for each species percentage is acceptable. For example, under Scenario 1, 30% sessile oak is prescribed, with an acceptable tolerance of 22.5% to 37.5%. Any shortfall in stocking must be compensated by increasing the percentage of other species within that mixture. Any variation beyond these tolerances must be agreed to in advance with DAFM and must be consistent with promoting the relevant native forest type.)
4. Two or more scenarios may apply to different areas of the same afforestation site. Each must be represented by its own plot, within the Form 1 Plot Table and Certified Species Map.

5. Note, all sites presented for FT1, 2, 3 and 5 must satisfy the eligibility criteria set out in DAFM's document *Land Types for Afforestation*.
6. Incorporate the relevant plot details and the scenario identified for each plot, in the Afforestation Form 1.
7. Note, FT1, 2, 3 and 5 plots can be proposed alongside other FT types within the same overall afforestation application.

Reforestation for Climate Resilience. Element 2: Native Forest: Instructions for the NWS Forester

1. Using the Native Forest Framework, assess the site in terms of its topographical location, soil, main habitats and vegetation. Compare this information with the descriptions given in the Native Forest Framework, and select which one of the scenarios applies. (Under Element 2 of the Reforestation for Climate Resilience Scheme, this assessment is best undertaken after the previous stand of conifer trees have been felled and extracted. However, the assessment can still be made if the trees are still standing, e.g. by studying the vegetation in adjoining hedgerows.)
2. The framework gives a short description and image of the native forest type associated with that scenario. This forest type becomes the 'target' forest to promote onsite, *via* replanting.
3. The species mixture and planting pattern appropriate for this forest type are listed (other native species, including scrub species and ground flora, will colonise naturally over time).
4. The framework then sets out the prescribed species mixture and planting pattern. Note, the species mixture and planting pattern *must be adhered to* in order to be eligible for support under Element 2 of the Reforestation for Climate Resilience Scheme. A tolerance of +/- 25% for each species percentage is acceptable. For example, under Scenario 1, 30% sessile oak is prescribed, with an acceptable tolerance of 22.5% to 37.5%. Any shortfall in stocking must be compensated by increasing the percentage of other species within that mixture. Any variation beyond these tolerances must be agreed to in advance with DAFM, and must be consistent with promoting the relevant forest type.
5. In all cases where natural regeneration is being pursued, the focus must be on encouraging species listed under that scenario.
6. Two or more scenarios may apply to different areas of the same. This must be reflected in the Reforestation for Climate Resilience Scheme Form 1 and associated map.

NWS Conservation: Instructions for the NWS Ecologist & NWS Forester

1. Using the Native Forest Framework, assess the site in terms of its topographical location, soil, main habitats and vegetation. Compare this information with the descriptions given in the Native Forest Framework, and select which one of the scenarios applies.

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2. The framework gives a short description and image of the native forest type associated with that scenario. This forest type becomes the 'target' forest to promote onsite, *via* appropriate restoration works within the existing native forest, such as underplanting and coupe planting beneath gaps in the overhead canopy created by (e.g.) the removal of non-native trees.
3. The species mixture and planting pattern appropriate for this forest type are listed (other native species, including scrub species and ground flora, will colonise naturally over time).
4. The framework then sets out the prescribed species mixture and planting pattern. Under NWS Conservation, planting must adhere to the species listed. However, the species mixture and planting pattern can be adjusted, depending on what is most appropriate at each planting location.
5. In all cases where natural regeneration is being pursued, the focus must be on encouraging species listed under that scenario.
6. Two or more scenarios may apply to different areas of the same NWS Conservation site. This must be reflected in the NWS Conservation Form 1 and associated map.
7. Incorporate the identified scenario(s) into the corresponding sections of the NWS Conservation Form 1 and associated maps.

If…

Location: Upland valley sides & hillsides on free-draining slopes.

Soil: Podzols (acid, infertile soils), average pH *c.*4.5.

Main habitats & vegetation:

Greenfield containing bracken, bilberry, heathers & gorse, with *Molinia* grass on flushed sites.

Semi-natural forest dominated by / hedgerows containing: sessile oak, downy birch, rowan & holly, with bilberry, ling heather & woodrush.

⇩

Scenario 1: Podzols / Oak-Birch-Holly Forest

⇩

Most appropriate Major Native Forest Type: QL Sessile oak–woodrush.

Predominant trees & shrubs: Sessile oak, downy birch, rowan & holly.

Predominant ground flora: Bilberry, ling heather, woodrush, hard fern, broad buckler-fern & honeysuckle.

⇩

Planting mixture: Sessile oak (30%), Scots pine (30%), downy birch (15%), rowan (15%), holly (10%).

- Plant the sessile oak in groups, with one-quarter of the downy birch, holly & rowan scattered intimately throughout.
- Plant Scots pine in small pure groups, focusing on parts of the plot with free-draining soil (if present) & away from any watercourses adjoining or crossing the plot.

Plant the remaining rowan, downy birch & holly as an intimate mix in remaining areas of the plot.

A typical upland greenfield site (sandwiched between two sessile oak/downy birch-dominated native woods) where the soil type on the slope is predominantly podzols.

A podzol profile with a topsoil comprising an acid, peaty, fibrous upper layer that overlies a leached, grey/white, infertile mineral layer. The subsoil is dark brown & iron-rich, with organic matter derived from the leached topsoil. The subsoil overlies the parent material from which the soil is derived.

QL Sessile oak–woodrush forest, Derrycrag Nature Reserve, Co. Galway.

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If…

Location: Uplands (especially in the east), on shale & base-rich glacial till & at the base of free-draining valley & hillside slopes.

Soil: Brown podzolics (acid, moderately fertile soils), average pH *c.*4.9.

Main habitats & vegetation:

Greenfield containing gorse, bracken, bramble, coarse grasses (e.g. Yorkshire fog), or improved grassland.

Semi-natural forest dominated by / hedgerows containing: sessile oak, downy birch, ash, hazel, rowan & holly, with bramble, bluebell, violet, herb-Robert & wood avens.

⇩

Scenario 2: Brown podzolics / Oak-Birch-Holly with Hazel Forest

⇩

Most appropriate Major Native Forest Type: QL3 Bramble–hazel (subtype of QL Sessile oak–woodrush).

Predominant trees & shrubs: Sessile oak, downy birch, ash, hazel, rowan & holly.

Predominant ground flora: Bramble, ivy, broad buckler-fern, wood sorrel, bluebell, violet, woodrush & wood avens. Dwarf shrubs largely absent.

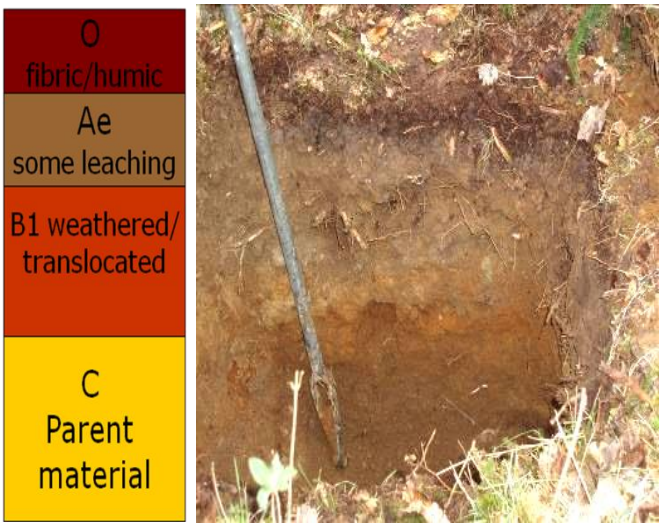
⇩

Planting mix: Sessile oak (50%), hazel (15%) (*), downy birch (10%), Scots pine (10%), wild cherry (5%) *plus* minor species (10%) comprising at least one of the following: hawthorn, holly, rowan, crab apple.

- Plant sessile oak with hazel & downy birch scattered intimately throughout.
- Plant wild cherry in groups of 5 to 10 trees amongst oak.
- Plant Scots pine in small pure groups on free-draining areas of the plot, particularly on slopes.
- Plant minor species alongside planned forest edges & glades.

* For the 2023 / 24 planting season only, if suitable hazel is limited or unavailable, replace shortfall with additional pedunculate oak & downy birch, with both to comprise no more that 75% of the initial planting. Filling-in to include hazel, where suitable native material is available.

Recently planted sessile oak/downy birch-dominated native woodland at the footslope of an upland landscape. Brown podzolic soils often occur at the foot slopes and/or where moderately base-rich till is a component of the soil parent material. Bluebell is present in the foreground.



A brown podzolic profile with a topsoil comprising a thin, acid, peaty, upper layer overlying a yellow-brown lower topsoil layer, which in turn overlies a red-brown, iron-rich subsoil. Beneath the subsoil is the parent material from which the soil is derived.

A good example of the QL3 Bramble–hazel forest type, Co. Cavan.

If…

Location: Lowlands on calcareous soils.
Soil: (Acid) Brown earths, fertile, heavy/moist to light/dry. Average pH *c.* 5.9.
Main habitats & vegetation:
Greenfield typically improved or semi-improved grassland seeded with perennial rye-grass, often mixed with red clover.
Semi-natural forest dominated by / hedgerows containing: ash, pedunculate oak, downy birch, rowan, hazel, hawthorn, holly, spindle & blackthorn. Field layer indicators include bramble, ivy, wood avens, wood sorrel, wood speedwell, wild arum, herb Robert & bluebell.

⇩

Scenario 3: Brown earths / Oak-Ash-Hazel Forest

⇩

Most appropriate Major Native Forest Type: FH Ash–ivy.
Predominant trees & shrubs: Ash, hazel, pedunculate oak, downy birch, elm, rowan, hawthorn, holly, spindle & blackthorn.
Predominant ground flora: Bramble, honeysuckle, ivy, wood avens, wood sorrel, wood speedwell, barren & true strawberry, wild arum, wood sanicle, bluebell, violet, wood brome & enchanter's nightshade.

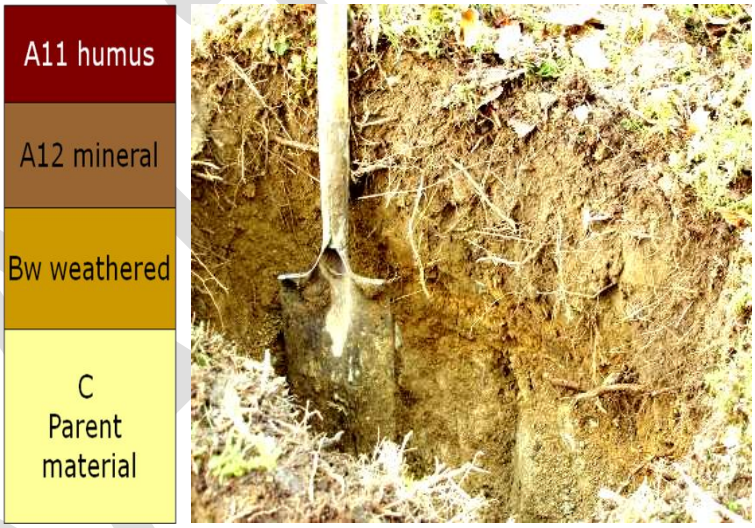
⇩

Planting mix: Pedunculate oak (40%), downy birch (20%), hazel (20%) (*), hawthorn (5%), wild cherry (5%) *plus* minor species (10%) comprising at least two of the following: holly, spindle, rowan, crab apple, alder.

- Plant pedunculate oak with downy birch, hazel & hawthorn scattered intimately throughout.
- Plant wild cherry in groups of 5 to 10 trees amongst oak.
- Plant minor species alongside planned forest edges & glades. If included plant alder in wetter areas of the plot.

* For the 2023 / 24 planting season only, if suitable hazel is limited or unavailable, replace shortfall with additional sessile oak & downy birch, with both to comprise no more that 80% of the initial planting. Filling-in to include hazel, where suitable native material is available.

A typical lowland, semi-improved grassland site on limestone with a base-rich till comprising the soil parent material. This site at Ballyvary, Co. Mayo, was planted, predominantly with hazel & ash, to develop a new native forest.



A brown earth profile with a well-structured & aerated brown, friable topsoil with well decomposed organic material. This fertile topsoil gradually diffuses into the yellow-brown subsoil (below the main rooting zone), which in turn overlies a light grey-brown calcareous parent material from which the soil is derived.

One of the finest examples of the FH Ash–ivy forest type in Ireland, Charleville, Co. Offaly.

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If…

Location: Drumlins, river valleys, lake shores & water-logged hollows.

Soil: Mineral & peaty gleys (very wet soils, generally fertile). Average pH *c.*5.9.

Main habitats & vegetation:

Wet, rushy grassland with yellow flag.

Semi-natural forest dominated by / hedgerows containing: alder, ash, grey willow, hazel, hawthorn, spindle & blackthorn. Field layer indicators include bramble, meadowsweet, creeping buttercup, remote sedge.

⇩

Scenario 4: Gleys / Alder-Oak-Ash Forest

⇩

Most appropriate Major Native Forest Type: AF Alder–meadowsweet.

Predominant trees & shrubs: Alder, grey willow & ash.

Predominant ground flora: Meadowsweet, remote sedge, creeping buttercup, yellow flag & water mint.

⇩

Planting mix: Alder (50%), grey willow (10%), downy birch (10%), pedunculate oak (10%), hawthorn (5%) *plus* minor species (15%) comprising at least one of the following: holly, hazel, guelder rose.

- Plant each of the following species in pure groups of 30-40 trees (*): alder, grey willow, downy birch.
- Plant pedunculate oak on drier areas of the plot.
- Plant hawthorn scattered throughout all of the above.
- Plant minor species between the above groups.

* Note: The above interspersed group planting of major species is carried out to improve stability & robustness, & to prevent the development of an alder monoculture.

A typical 'rushy' field with heavy, wet gley soils. These are sometimes semi-improved for pasture & are common in drumlin belts, low-lying, & poorly drained locations.

A very poorly drained 'dauby' gley soil profile with a clay-rich topsoil approx. 30 cm deep, which overlies a saturated & mottled, blue-grey & red-brown subsoil. The subsoil overlies a very compact parent material derived from glacial till.

A typical AF Alder–meadowsweet alluvial forest on gley soil. Hazelwood, Co. Sligo.

SCENARIO 5: Highly Modified peat & peaty podzol (Pioneer birch forest)

Note: As for Scenarios 1-4, Scenario 5 must satisfy the requirements for 'Suitable Land: GPC2-12', as set out in the document *Land Types for Afforestation* (Oct17). Also, designated & non-designated Annex I habitats are excluded from afforestation, as set out in the *Environmental Requirements for Afforestation*. Sites with species-rich plant communities may also be inappropriate for planting.

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IF…

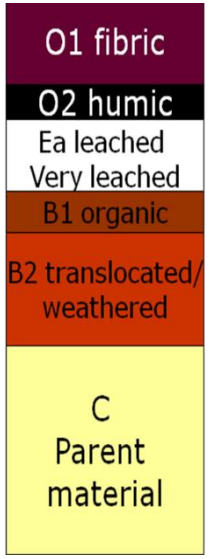
Location, soil, main habitats & vegetation:

A. Modified & improved, infertile upland acid brown earths & peaty podzols (often gleys) (average pH c.4.0-4.5)

Extensively grazed upland & lowland grassland on leached, acidic soils. Grassland with sweet vernal-grass (*Anthoxanthum odoratum*), mat grass (*Nardus stricta*), bracken & gorse. Adjacent semi-natural forest / hedgerows (if present) species-poor, dominated by downy birch & containing Scots pine, sessile oak (on dry sites), rowan, grey willow, silver birch, (hazel), holly & gorse, with bramble, honeysuckle, hard fern, bracken, mosses & liverworts.

These sites are generally above the upper reaches of Scenario 1.

Example of soil profile for Scenario 5A: A peaty podzol profile with a pronounced fibrous, peaty topsoil *c.*15 cm deep, underlain by a bleached, infertile & weathered mineral horizon, which in turn overlies a humic-iron deposition zone rich in humic-iron material derived from above.



Example of Scenario 5A: An upland, improved site that almost certainly produced potatoes during pre- & post-Famine times. Note the stone wall (mid-ground, right) & the ridge & furrows distinctive 'lazy bed' features.

Example of Scenario 5A: Grassland & bracken on peaty podzol, Co. Wicklow.

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OR…

B. Drained / improved peats / peaty gleys (moderately acid, average pH 5.0) in both upland (blanket bog) & lowland (raised bog) habitats

Extensively grazed upland & lowland grassland on acidic organic-rich soils, often fringing adjoining bog habitats. Grassland with sweet vernal-grass, mat grass, purple moor-grass, bracken & gorse. Adjacent semi-natural forest / hedgerows (if present) are species-poor, dominated by downy birch & containing Scots pine, sessile oak (on dry sites), rowan, grey willow, silver birch, (hazel), holly & gorse, with bramble, honeysuckle, hard fern, bracken, mosses & liverworts.

Example of Scenario 5B: Rushy grassland on drained peat adjacent to raised bog in distance. Co. Roscommon.

Example of 5B: Upland heathy grassland (mid-ground) with gorse and bracken. Note birch forest in background. Co. Kerry.

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OR…

C Highly modified and drained fen peats (pH>6)

Fen pastures with purple moor-grass, or improved grassland reseeded with perennial rye-grass & clover mixtures, including soft rush.

Example of Scenario 5C: Improved grassland on drained fen peat. A highly modified fen that has been drained, resulting in the loss of its associated plant community & peat decomposition, creating nutrient release & subsidence.

Example of Scenario 5C: Improved rushy grassland on drained fen, Co. Westmeath.

⇩

Scenario 5: Highly Modified Peat & Peaty Podzols / Pioneer Birch Forest

Most appropriate Major Native Forest Type: BM Birch – purple moor-grass

Main trees, shrubs & ground vegetation that would naturally occur within this forest type:

Downy birch, with some Scots pine, sessile oak, rowan, holly & occasional silver birch (with hazel & hawthorn on more fertile areas locally). Purple moor-grass, bramble, honeysuckle, hard fern, broad-buckler fern, bracken, mosses & liverworts.

On wetter parts: Grey willow & downy birch (& occasionally alder, in flushed areas). Purple moor-grass, rushes, sedges, meadowsweet, devil's-bit scabious & marsh thistle.

A typical upland 'pioneer' birch forest that developed through natural regeneration. Holly & mountain ash are often associated with these forests.

Planting mix: Downy birch (45%), rowan (10%), Scots pine (20%), sessile oak (15%) *plus* minor species (10%) to comprise at least one of the following: holly, hawthorn & hazel.

- Plant downy birch & rowan in pure groups.
- Plant Scots pine & sessile oak in pure groups, on free-draining areas of the plot (especially on slopes).
- Plant minor species between the above groups & at edges. If included, plant hawthorn & hazel on more fertile areas of the plot (e.g. foot-slopes).

If the site is wet, or on wetter parts of the site, apply the following:

Planting mix: Downy birch (50%), grey willow (30%), plus minor species (20%) to comprise of at least one of the following: rowan, hazel, alder & pedunculate oak, the latter on lowland sites *only*.

- Plant downy birch & grey willow in pure groups.

Plant minor species between the above groups & at edges. If considered, plant pedunculate oak on lowland sites *only*.

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Photos of established forest equating to Scenario 5: Pioneer birch forest, Co. Wicklow. On many sites, wood production may be a viable co-objective, under continuous cover forestry.

Section 1

Soil Surveying and Classification for the Native Forest Framework

1. Overview

Soil type provides the primary basis for differentiating between the scenarios presented in the Native Forest Framework. A simple walkover soil survey is therefore required when assessing a site. In many cases, NWS Foresters will be able to discern soil types onsite, based on experience and the use of a soil stick or soil auger.

The following notes on soil surveying and soil classification are presented as guidance and will assist in the identification of soil types when applying the Native Forest Framework, particularly on complex sites.

Soil surveying and classification are particularly relevant for projects under Forest Types (FTs) 1, 2, 3 and 5 (the latter in relation to planting in gaps within the emergent forest) and Element 2: Native Forest under the Reforestation for Climate Resilience Scheme (especially after clearfelling of the existing stand has taken place). It also has relevance under Native Forest Conservation Scheme, although the identification of the most appropriate forest type in related projects will be driven primarily by existing trees, scrub and ground flora on site.

2. Soil surveying

When assessing a site under the above schemes, a simple walkover soil survey is needed to identify the soil type(s) present. Firstly, note the 'lie of the land' in the greenfield to be surveyed, dividing the site into basic soil units. Variations in topography (such as wet hollows and rocky knolls) and areas where vegetation changes abruptly should all be treated as separate soil units, as different soil types may be present (Figure 1). After dividing the site into basic soil units, the walkover soil survey can be conducted. This is achieved by sampling along a transect within each soil unit, using a soil stick or (ideally) a soil auger[2] (Figure 2).

Figure 1 illustrates an example of a simple transect or 'free' soil survey, where transect points 1 to 7 occur in one soil unit across a free-draining slope (brown earth) and transect points 8 to 10 occur on a wet foot slope or low-lying area (gleyed brown earth).

As illustrated in Figure 3, the soil profile sequence can be replicated by simply augering to the depth of the auger chamber length, and by laying out each auger sample in sequence on the ground adjacent to the coring site. A white background (such as a sheet of paper or a plastic fertiliser bag) is useful to observe the contrast between soil horizon layers, particularly when the change in soil colour between layers is gradual. The white background is also useful if photographs are being taken. An approximate pH value can be obtained from the topsoil by using pH papers available from most garden centres, or alternatively, a soil pH metre

[2] Please contact Woodlands of Ireland (e-mail woodsofireland@iol.ie / web www.woodlandsofireland.com) for further information on potential suppliers.

designed for use in the field.

3. Soil classification

The Irish soil classification system presented in *Soil Associations of Ireland and their Land Use Potential* (Gardiner & Radford, 1980) is used to describe the soil type underpinning each scenario presented in the Native Forest Framework. The relevant soil types are podzols, brown podzolics, brown earths, gleys and alluvial soils.

As one becomes familiar with identifying soil layers or horizons, it becomes relatively easy to differentiate between the various soil types in the field. To help in soil identification, the basic components of a soil profile should be understood, i.e. topsoil (A horizon), subsoil (B horizon) and parent material (C horizon) (Figure 4). The lettering and numbering of soil horizons help to describe properties within each soil layer, e.g. A1, A2, Bw (weathered), Bg (gleyed), O (organic), Cx (extremely compacted).

Figure 1 An outline of a 'free' soil survey on a greenfield site adjoining semi-natural forest. Two basic soil units were identified – a free draining slope (Soil Unit 1) and a wet footslope (Soil Unit 2). Each unit was subsequently transected, with core samples 1-7 and 8-10, respectively.

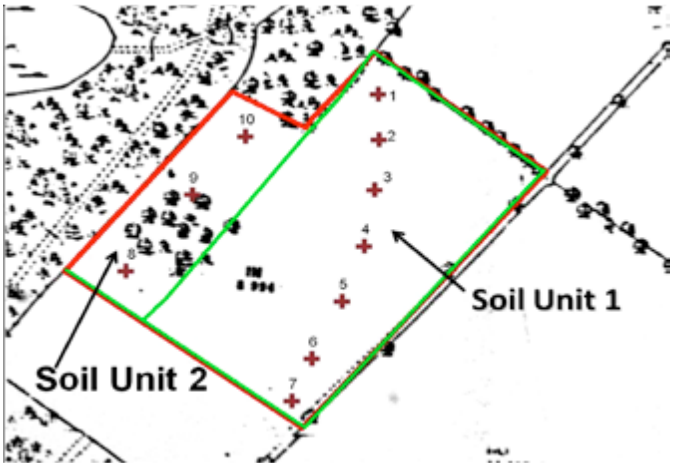
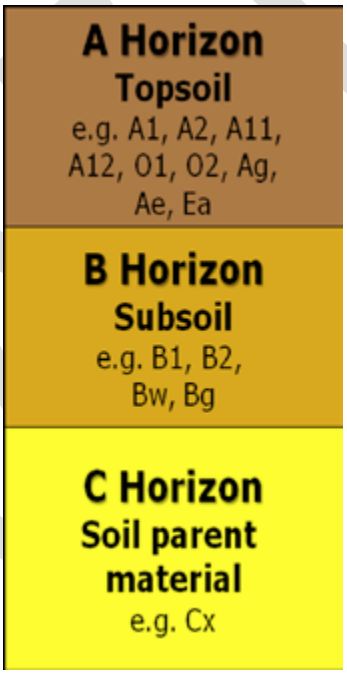


Figure 2 A topsoil core sample taken with a Dutch soil auger.

Figure 3 A soil profile derived with a Dutch soil auger. Samples are taken from the same core site and laid out in sequence (i.e. topsoil above subsoil above parent material) to ascertain the soil type.	

Figure 4 A typical mature soil profile showing A, B and C horizons, with designation letters which denote different soil properties present (Gardiner & Radford, 1980).	

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Appendix 3: **Certification of Land Transfer**

To: Minister for Agriculture, Food & the Marine
Forestry Division

Contract Ref

The transfer of lands in Folio(s) _____, County _____

from _____ to _____

was effected on _____ (see attached copy of Deed of Transfer and Map)

I hereby certify that:

The Deed of Transfer* / Assent & Application* has been submitted to the Revenue Commissioners for stamping and I undertake to submit it to the Property Registration Authority of Ireland for registration in the current owner's name as soon as it is returned by the Revenue Commissioners.

Or

The Deed of Transfer* / Assent & Application* has been submitted to the Property Registration Authority of Ireland for registration in the current owner's name.

**Please delete as appropriate* and *Please tick appropriate box above*

I undertake to forward certified copies of Folio(s) registered in the name of the new owner(s) to the Forestry Division as soon as they become available.

My/Our firm currently holds Professional Indemnity Insurance Cover with a qualified Insurer as defined under Statutory Instrument No. 312 of 1995.

Signed: _____
Solicitor for Purchaser

Name of Solicitor: _____

Name of Firm: _____

Date: _____

Solicitor's Stamp

Appendix 4: **Commonage Consent Form**

To: Minister for Agriculture, Food and the Marine

We, the undersigned, are the registered owners of the Commonage property described in the Schedule below.

Name	Address	Signature	Date

We hereby consent to the application made to the Forestry Division for an Afforestation Grant* in respect of the parcel of land(s) described in the schedule below on our behalf by -

Name:	
Address:	
County:	

**Note: Each of the owners of commonage may apply for payment of forest premium in his/her own behalf*

SCHEDULE

Area (ha)	
Townland(s)	
District Electoral Division	
County	
Folio Number(s)	
Registry of Deeds	

The commonage property is described in the schedule above and delineated on the map attached with the boundaries marked in red.

Signed and Sealed in my presence: _____Date:_____
(*Signature of Solicitor)*

Solicitor's stamp

Name of Solicitor: _____

Address: _____

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Appendix 5: **Joint Management Consent Form**

Department of Agriculture, Food and the Marine
Joint Management Consent Form

CONSENT by LAND OWNER/s for an immediate family member* to use the land for purposes of the forestry Schemes. The Applicant shall be the sole claimant for payments under the Schemes.

Contract Ref. [ ]

I / We (NAME/S IN CAPITALS) _____

as owner /s of the lands covered in Folio number/s _____

in the Townland of _____ , Co._____

including the _____ hectares planted or to be planted under the Afforestation / / NWS

Schemes, hereby consent to the acceptance by the Department of claims for payment of forestry

grants and premiums by the **applicant named overleaf**, who will jointly manage the Forest and

who is my/our *(state relationship to owner/s)* _____

DECLARATIONS AND UNDERTAKINGS BY THE OWNER/s of the LAND
I declare that -
I am over 18 years of age
I have read and understood the conditions of the scheme and the Notes overleaf
I hold a current tax clearance certificate, enclosed herewith, valid until [ ]
The details which appear on this form are correct to the best of my knowledge
I understand that all Forests in the State are protected under the Forestry Act 2014.
I undertake -
to notify the Department in advance of offering any part of the planted land for sale or if ownership is to be transferred for any reason

ultimate liability to repay the Department if grants or premiums have to be recovered from the Applicant for failing to meet the conditions of the Schemes, or if, on change of ownership during the term of the scheme, new owners do not commit to observe all of the same conditions.

Signed: _____ PPS No.: _____ Date: _____
Owner of the Lands *Owner's PPS No.*

Signed: _____ PPS No.: _____ Date: _____
Owner of the Lands *Owner's PPS No.*

Address: _____

Herd Number (if any): _____

** Under these Schemes **immediate family** means only: Husband / Wife / Father / Mother / Son / Daughter / Sister / Brother*

PLEASE COMPLETE OVERLEAF ***Page 1 of 2***

Applicant (the joint manager who will claim the grants & premiums in his / her own name)

Name: _____

Address: _____

_____

Herd No: _____

Notes

1. A separate JMC Form is to be completed by each owner named on the folio/s, except for joint full owners who should use a single JMC form.
2. JMC arrangements are allowed only between members of the immediate family of the landowner/s defined for these schemes as only: Husband / Wife / Father / Mother / Son / Daughter / Sister / Brother.
3. The person named as Joint Manager will be registered as Applicant under the Scheme(s). As such, all correspondence and claim forms will issue to him /her. The Department will not normally contact the land owner/s, except in the case of debt being declared against the Applicant for breach of the Scheme(s).
4. The land owners shall be ultimately liable for any debts incurred under the schemes by the Applicant if the Applicant fails to repay such debts. Debts due to the Department may be recovered by offsetting them against payments due to the customer under any other scheme administered by the Department.
5. Land owner/s who wish to end a Joint Management arrangement should give written notice to the Department. Such termination will be accepted only if the land owner/s sign the necessary commitment to take over the obligations of the scheme to maintain the Forest for the remainder of the term and to repay all grants and premiums already paid in the event of breach of the terms of the scheme.
6. No ineligible claim for payment on the afforested area may be made under other area-based schemes.

As this Consent to Payment involves matters of legal title it must be witnessed by your Solicitor.

Witness: _____ Date: _____

Solicitor's signature

Name: _____

Name of Firm: _____

Address: _____

_____

Solicitor's stamp

Page 2 of 2

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Appendix 6: **Release of Turbary Rights Consent Form**

To be completed by the holder/s of turbary rights to enable the registered owner/s to afforest the land under the Forestry Division Grants and Premiums Scheme

I, _____ (*Holder of the Turbary Rights*)

Address: _____

County: _____

being the successor in title of _____ to whom the turbary rights over the property described in the Schedule hereto were allocated by the Congested Districts Board for Ireland in or around the year 1817 hereby **TRANSFER, ASSIGN AND RELEASE** all my right title estate and interest in and to the said turbary rights to

Name: _____

Address: _____

County:_____

who is the registered owner of the property described in Folio No._____ of the Register of County_____.

SCHEDULE

ALL THAT part of the lands of _____(townland) more particularly described and delineated on the map thereof annexed hereto and thereon edged yellow and numbered _____

Signed and Sealed by the said: _____

(Holder/s of Turbary Rights)

Dated this _____ day of _____ , in the year _____ .

As this consent form concerns legal title to lands it must be witnessed by a Solicitor.

Witness: _____ Date: _____

Signature of Solicitor

Solicitor's Name:_____

Name of Firm: _____

Address: _____

County: _____

Solicitor's stamp

Appendix 7: **Release of Grazing Rights Consent Form**

To be completed by the holder/s of grazing rights to enable the registered owner/s to afforest the land under the Forestry Division Grants and Premiums Scheme

I, _____ (*Holder of the Grazing Rights*)

Address: _____

County: _____

being the successor in title of _____ to whom the grazing rights over the property described in the Schedule hereto were allocated by the Congested Districts Board for Ireland in or around the year 1817 hereby **TRANSFER, ASSIGN AND RELEASE** all my right title estate and interest in and to the said grazing rights to

Name: _____

Address: _____

County: _____

who is the registered owner of the property described in Folio No. _____ of the Register of County _____.

SCHEDULE

ALL THAT part of the lands of _____(townland) more particularly described and delineated on the map thereof annexed hereto and thereon edged yellow and numbered _____

Signed and Sealed by the said: _____

(Holder/s of Grazing Rights)

Dated this _____ day of _____ , in the year _____

As this consent form concerns legal title to lands it must be witnessed by a Solicitor.

Witness: _____ Date: _____

Signature of Solicitor

Solicitor's Name: _____

Name of Firm: _____

Address: _____

County _____

Solicitor's stamp

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Appendix 8: **Grant Mandate**

Mandates / assignments of grant payments to Registered Foresters / Forestry Companies must comply with the following:

1. All mandate / assignment forms (see following page) must be properly and fully completed, signed, and dated.
2. The file reference (Contract Number), location (townland and county) and the area (hectares) of the development must be stated.
3. The parties referred to in the mandate / assignment must be clearly identified.
4. The signature of the grant applicant should be independently witnessed on the form.
5. The mandate / assignment should also be signed by the party in whose favour it is made. In the case of a Forestry Company, the mandate / assignment must be signed by the Company Secretary and must bear the company seal.
6. The mandate / assignment must include the following sentence, with ‘ NAME ’ to be replaced by the name of the Registered Forester / Forestry Company: “*This mandate / assignment in favour of* NAME *applies only on the satisfactory completion of the work by* NAME.”
7. The mandate / assignment must state clearly whether one or both instalments of the grant is being referred to.
8. The grant applicant should be independently advised as to the nature and extent of the mandate / assignment, and the mandate / assignment must include one of the following sentences: “*I have been independently advised as to the nature and extent of this mandate / assignment and I am aware of its contents*” <u>or</u> “*I have been given an opportunity to seek independent advice*”.
9. The mandate / assignment should state when and how it expires, and if and how it can be terminated.
10. All mandates / assignments should include the following disclaimer signed by the grant applicant and the party in whose favour it is: “*I understand that should the Minister fail to make payments in accordance with this mandate / assignment (when they become certified as due) no liability whatsoever shall attach to the Minister and the applicant hereby indemnifies and keeps indemnified the Minister in respect of all claims, losses and damages howsoever arising there from.*”

Forestry Division Contract No. [ ]

Grant Mandate Form

WHEREAS I/We _____(*Name of Applicant)*

Of _____

Have applied to the Department of Agriculture, Food and the Marine (Forestry Division) for a Forestry Grant in respect of my / our Forestry Development more particularly described in Part 1 of the Schedule hereto.

NOW I / WE FURTHER AUTHORISE AND DIRECT the Department of Agriculture, Food and the Marine (Forestry Division) (or the Minister from time to time responsible for the administration of the scheme of Forestry Grants) to pay the Afforestation / 2nd Instalment Grant Moieties as specified in Part 2 of the Schedule hereto to

_____(*Name of Company)*

I/WE FURTHER AUTHORISE AND DIRECT the Department of Agriculture, Food and the Marine (Forestry Division) to accept and abide by any notice from this company calling for payment of such Grant monies.

This Authorization is irrevocable without the prior written consent of _____(*the Company*)

This Mandate / Assignment in favour of _____ (*the Company)* applies only on

satisfactory completion of the work by _____(*the Company aforementioned)*

I have been independently advised as to the nature and extent of this mandate / assignment and I am aware of its contents.

I understand that should the Minister fail to make payments in accordance with this mandate / assignment (when they become certified as due) no liability whatsoever shall attach to him and the applicant* hereby indemnifies and keeps indemnified the Minister in respect of all claims, losses and damages howsoever arising there from.
**alternatively the Company may indemnify the Minister in this regard.*

Signature of Applicant:_____

Signature on behalf of the Company: _____

SCHEDULE

Part 1: Description of Development: Approx _____ hectares at _____ County _____

Part 2: Afforestation Grant [ ] 2nd Instalment Grant [ ]

Signed (*Applicant)* _____Date_____

Address: _____

Independent Witness_____ Date _____

FOR COMPLETION BY COMPANY

We hereby authorise and direct the Department of Agriculture, Food and the Marine (Forestry Division) to pay the afforestation / 2nd Instalment (*delete as appropriate*) grant monies for the above development direct to:

BANK NAME: _____

BANK ACCOUNT NUMBER (IBAN):_____

BANK IDENTIFIER CODE (BIC):_____

Signed: _____ Date: _____
(*To be signed by the Company Secretary)*

Company Seal

Name (Block Capitals)_____

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Appendix 9: **Form 2 Management Plan**

Components of the Management Plan

The following provides explanatory notes on the different components of the Form 2 Management Plan. The fields below will be developed into an online Management Plan system following the recommendations from the COFORD Forest Management Plan Working Group. The explanatory notes below refer to drop down menus in the proposed computer system but can be used in the interim in the compilation of paper-based management plans at Form 2 stage.

See Form 2 extract on the following page.

'Forest Type'

The user is prompted by a drop-down menu and / or check box to select the most appropriate category to describe the plot. Only one forest type is allowed per plot / sub-compartment. The options are:

BHF	Broadleaf High Forest
CHF	Conifer High Forest
COP	Coppice Forest
MHF	Mixed High Forest
NON	Non-Forest Area

'Mgmt Obj'

This refers to the primary management objective for the plot. It can be different to the overall high-level objective for the forest. The user is prompted by a drop-down menu to select one objective. The options are:

Biodiversity Areas managed for biodiversity:

Hunting	Includes areas managed for hunting and sporting leases
Landscape	Areas managed primarily for landscape purposes
Protection	Includes buffer areas around features (excludes water)
Recreation	Areas managed primarily for the provision of recreation
Riparian	Protection of water quality including riparian buffer zones
Timber	Primary purpose is production of saleable timber
Other	None of the above and the user can specify

FOREST MANAGEMENT OBJECTIVE

Forest Management Objective
☐ 1 Commercial timber production while adhering to principles of SFM
☐ 2 Provide commercial non timber benefits
☐ 3 Provide environmental benefits and services
Other:

FOREST MANAGEMENT PLAN DETAIL

Plot No.	Forest Type	Mgmt Obj	1st Act	Plan Yr	2nd Act	Plan Yr	First Thin	Rot Type	Fell Year	Timing	Road Status	Harvest Area (%)

'Plan Yr'

The user provides the year when an activity is planned to take place.

'1st Act' and '2nd Act'

A list of activities with associated heading (in red) follows:

- Aerial Fert *
- Drain Repairs
- Fence Repairs
- Fertiliser
- Firelines
- Harvesting *
- Inventory
- None
- Other Paths
- Protection
- Pruning
- Road Constr *
- Road Upgrade
- Road Repairs
- Shaping

'First Thin'

This is the year when it is planned to undertake 1st thinning or, in the case of plots already thinned, the year in which the 1st thinning took place or is estimated to have taken place. The user is prompted to enter a year in the form of a 4-digit numeric value.

'Rot Type'

The user selects the rotation type from one of six options, as follows:

1. **'MMAI'** is the point in time during a rotation where the mean annual production of cubic metres of wood reaches its maximum amount. Rotations to MMAI maximum volume production.
2. '**Standard**' is the rotation length specified for different species by the Forestry Division in the late 1970s. It is the age of MMAI less 20% for Sitka spruce and Norway spruce. It is, the age of MMAI less .30% for Lodgepole pine, and the age of MMAI for all other conifer species
3. **'Reduced'** is a rotation length that is less than the Standard rotation length (by 2 years or more) and is usually prescribed due to concerns about crop stability.
4. **'Technical'** is a rotation length which is normally prescribed in order to produce a standard product or tree size at the age of clearfell, e.g. rotation to produce an average trees size of 0.7 m^3 at clearfell.
5. **'Extended'** indicates an extended rotation (+4 years or more) over a standard rotation. This could be for a variety of reasons, including landscape, biodiversity or in order to wait for the felling of an adjoining or nearby area, to achieve economies-of-scale.
6. '**CCF'** indicates continuous forest cover and as such, it is not a rotation type but could be referred to as a continuous rotation as the trees within the forest are still planted and felled over time.

'Fell Year'

Once the user has selected the rotation type, they are prompted to enter a fell year.

'Timing'

This indicates at what time during the year the planned harvesting can take place. Due to a variety of site factors (such as soil type), some sites can only be thinned during summer months, while others can only be harvested at specific times during the year (summer or winter), due to restrictions regarding designated areas and protected species / habitats. The user should select the relevant timing of the harvesting from a drop-down menu. There are three options: 'Summer', 'Winter' and 'All Year'.

'Road Status'

This indicates whether there is adequate roading to allow the harvesting to take place. There are two options on the drop-down menu:

1. 'Adequate' means that there is adequate roading infrastructure for the planned harvesting to take place.
2. 'Inadequate' means that harvesting cannot proceed until: (i) the roading infrastructure has been upgraded to sufficient standard (e.g., an existing track is upgraded to a road or a right-of-way); or (ii) a new road is constructed.

'Harvest Area (%)'

This is an estimate of the percentage of the plot area that will be subjected to harvesting. This can vary from 100% to as low as 50% for a number of reasons. The user is prompted to select a value from a drop-down menu within the range 50 to 100 in 5-point intervals.

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Appendix 10: **Scheduled Venues to View the 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 11: **Acid Sensitivity Protocol**

Overview

Applications for afforestation approval (with or without grant aid) on sites located within certain 6 inch Ordnance Survey sheets which are designated as acid sensitive areas (see following pages for list) require a site-specific assessment of watercourse acid sensitivity. This sensitivity of the water to acidic inputs is determined by alkalinity it as measured using the Gran Titration Method. **All sites that are to be sampled, must have a valid contract number of a formally submitted application. If no contract number and formal afforestation application exists, then water samples will not be vali**d.

Sampling and analysis shall be carried out on at least four separate occasions within the period 1st February to the 31st May inclusive. One sample must be collected and analysed in each month of February, March, April and May with the intervening period between two consecutive samples taken of no more than 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 a watercourse 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 solely of Native Forest FT 1, FT2, FT4 and FT5 – see note below.)

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 Forestry Division, the Environmental Protection Agency, and Inland Fisheries Ireland (formerly the Regional Fisheries Board).
>15 mg $CaCO_3$ l^{-1}	Afforestation may be approved.

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

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, the Forestry Division of the Department of Agriculture, Food & the Marine, 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 10 working days prior to sampling, stating the proposed location, date and time of sampling.
The Forestry Division 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.

NWS Est. FT's and the Acid Sensitivity Protocol for Afforestation

Water sampling under the Acid Sensitivity Protocol for Afforestation is not required for afforestation applications within acid sensitive areas that comprise solely of Native Forest FT1.

This amendment to the protocol, agreed with the Environmental Protection Agency (EPA) (see Forestry Division Circular 4 of 2013), is limited to applications that comprise solely of Native Forest FT1 (plus ABEs, as required) on enclosed / improved land only. Strict adherence to minimum site disturbance will apply during planting and establishment (as standard under FT1), with the additional requirement that no fertiliser application takes place.

Sites proposed for Native Forest FT1 must be capable of strong establishment and initial growth of to support the sustainable long-term development of the most appropriate native woodland type(s) identified for that site. *Sites that do not meet this and other site requirements for* Native Forest FT1 *should not be submitted under these Forest* Types

Sampling procedure for rivers and streams

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

- A contract number and a formally submitted afforestation application.
- 6 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.
- 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 site 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 2 working days prior to sampling, to give him / her the opportunity to undertake parallel water sampling; and
- be familiar with all health & 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;
- 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 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.

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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 the sampling bucket and the sample bottle.*
- *No smoking is allowed on site.*
- *At all times, avoid bodily contact with water intended for analysis.*

The following laboratories offer an alkalinity analysis service:

- BHP Laboratories Ltd., New Road, Thomond Gate, Co. Limerick. Tel. 061-455399
- TMS Environment Ltd., 53 Broomhill Drive, Tallaght, Dublin 24. Tel. 01-4626710
- Southern Scientific Services Ltd., Dunrine, Killarney, Co. Kerry. Tel. 064-6633922
- Fitz Scientific, Unit 35, Boyne Business Park, Drogheda, Co. Louth. Tel. 041-9845440

In addition to the laboratories listed above, samples can also be submitted to any laboratory currently participating in relevant national or international inter-comparison exercise, 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 ISO / IEC 17025:2005.
Any laboratory used must be independent of the applicant.

Water Sampling Field Sheet

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

Sample No.	Date collected	Time of collection	Water temperature C°	Remarks

Weather conditions on date of collection
General weather, recent conditions

Comments

Samples collected by: _____
Signature

State Name: _____
BLOCK CAPITALS

Date: _____

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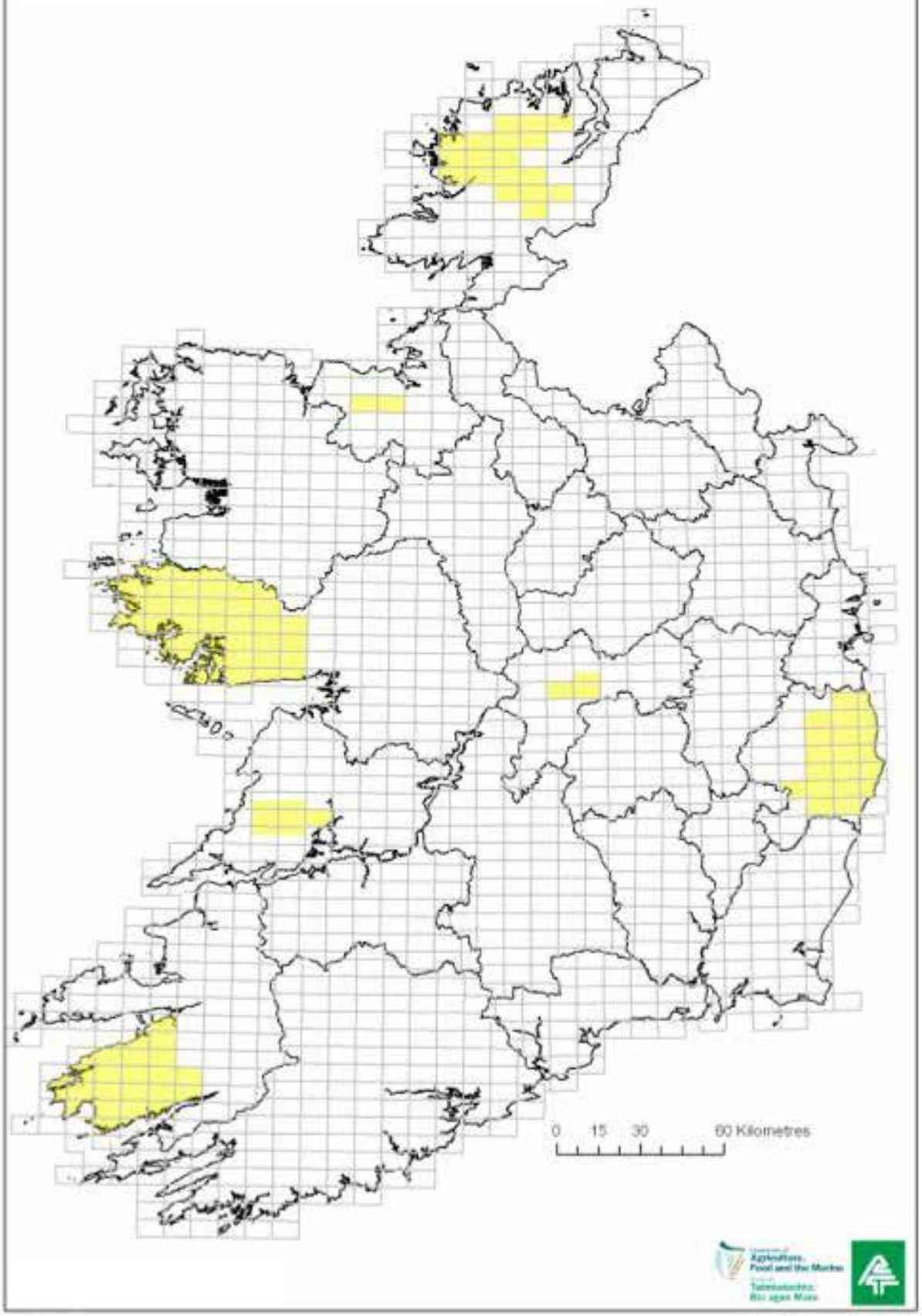
Six inch Ordnance Survey sheets designated as being acid sensitive areas

All ranges listed are inclusive.

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

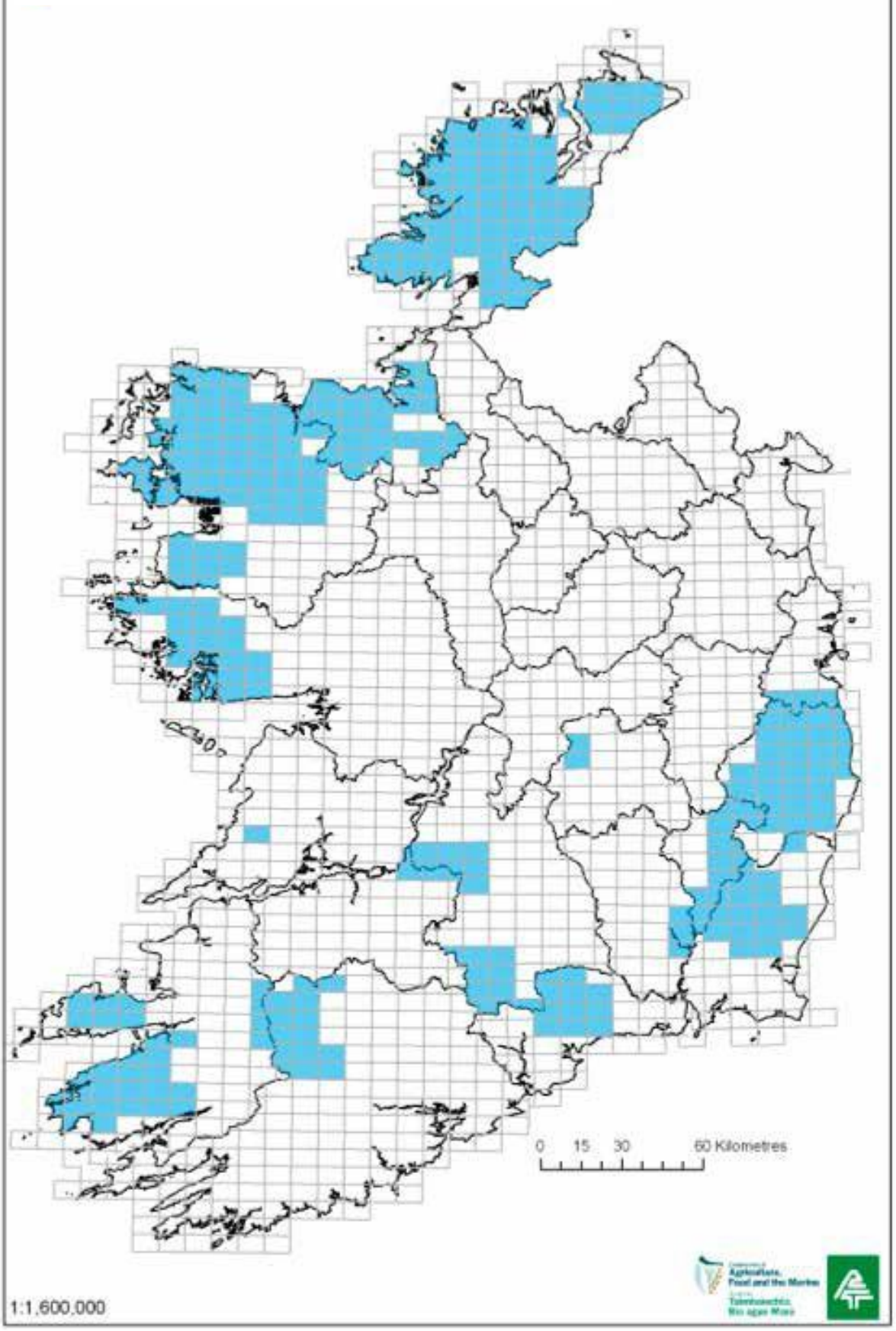


Appendix 12: **Areas of Potential Fisheries Sensitivity**

The following list of 6 inch Ordnance Survey sheets are designated as areas of potential fisheries sensitivity, as agreed in 1992 between the DAFM and the then-Regional Fisheries Boards. All ranges listed are inclusive.

County			OS Sheet Numbers	
Carlow	3 to 5 8 to 10	13 to 14 17 to 18	20 to 26	
Clare			39	
Cork	5 to 6 12 to 14	21 to 22 29 to 30	38 to 40 47 to 49	
Dublin			24 to 28	
Donegal	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	22 to 25 37 to 39	51 to 53 64 to 67	78 to 80 90 to 92	
Kerry	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	29		33	37
Laois	6		11	
Limerick	1		6 to 8	
Mayo	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	8 to 25		28 to 38	40 to 42
Tipperary	31 to 33 37 to 39 44 to 45		73 to 75 80 to 81	86 to 87 89 to 91
Waterford	1 to 2 5 to 7		13 to 15	22 to 24
Wexford	1 to 2 4 8 to 10		13 to 15 18 to 21	24 to 27 31 to 32
Wicklow	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.



Appendix 13: **Shell Marl and Calcareous Soils**

Shell marl

Deposits of marl and calcareous mud in flat areas surrounded by limestone are often found beneath Midland peats. Trees planted where the rooting zone is influenced by marl rarely thrive, and there is no technique known by which this condition can be overcome.

When moist, marl is recognised by its softness to-the-touch and by its colour range which varies from olive /to pale olive through to light grey to/ white. When it is dry, it is whitish in colour, of friable consistency and powdery. It effervesces strongly and audibly when treated with dilute (10%) hydrochloric acid (HCl) (see Photo 1). Marl varies in depth from 1 cm to 2 metres, and generally (but not always) contains quantities of small shells. Marls have pH values in the region of 8.0. Marl occurs as deposits over calcareous silty clays or boulder till. It also occurs as layers or lenses (discontinuous layers) of varying thickness within peat horizons. Calcareous muds contain variable quantities of organic matter and because of this, are usually darker in colour than the whitish-coloured marls. The presence of hard rush (*Juncus inflexus*), meadow-sweet (*Filipendula ulmaria*) and silverweed (*Potentilla anserina*) may also indicate the presence of marl.

Marls and calcareous muds were formed in lime-rich post-glacial freshwater lakes through the precipitation of calcium carbonate by stoneworts (*Characeae* species) and pondweed (*Potamogeton*). The plants became coated with calcium carbonate and, with their death and decay, the calcareous material accumulated on the lake bottom.

Photo 1 Soil core displaying vigorous effervescence with dilute (10%) hydrochloric acid.

Where marl occurs within 70 cm of the soil surface, the site is classed as unplantable. Marl may not always be detectable by means of the standard peat sampler, particularly where it occurs in the form of intra-peat layers or lenses. However, it is easily seen and identified in stream banks, drains and other excavations.

Calcareous soils

Other mineral horizons other than marl or calcareous mud, but which are to a greater or lesser extent calcareous in nature, may be found under peat or under various mineral soils. If such material occurs within the rooting zone (50 cm approximately) and displays vigorous effervescence when treated with 10% HCl, the surface and sub-surface horizons should be assessed for pH and $CaCO_3$. Soil samples should be collected by a Registered Forester and assessed by an accredited forest soil laboratory - see Appendix 14 for details on soil sampling procedure. Sampling should distinguish between visibly different soil horizons, and each sample for the laboratory should comprise at least 12-15 sub-samples and should be fully representative of the site and the horizon being sampled. Consult the forest soil laboratory before collecting the samples. Subsequent species selection should reflect the laboratory results.

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Appendix 14: **Soil Sampling Procedures**

Sampling procedure

- The area to be sampled should be divided into homogeneous soil sampling units (SSUs) based on soil type, distinct differences in vegetation, and / or obvious site boundaries. Note that each SSU should be sampled separately.
- The total area under the proposal should be marked on a 6 inch Ordnance Survey map or a 1:5,000 scale map, clearly indicating the pattern of sampling, the SSUs and which of the samples taken are representative of which of the SSU(s) present.
- For each SSU, if there are clearly defined soil horizons evident, sample each horizon separately. Otherwise, take separate samples from the 0 cm – 20 cm surface layer and the 20 cm – 40 cm sub-surface layer.
- From each horizon or layer, collect samples from at least 12–15 locations within the SSU. Each of these is treated as a sub-sample.
- Record the depth of any apparent calcareous layer in the soil profile.
- Collect the sub-samples by travelling across the area to be sampled using a zig-zag or S-shaped route. All sampling locations should be identified on a ½ inch OS map that is submitted.
- Making sure to keep the samples from the different horizon or layers separate, combine the 12–15 sub-samples from the same horizon or layer in a large clean bag and mix thoroughly. Clearly label the sample bag with an indelible black marker. Repeat this process for each horizon or layer sampled.
- For each horizon or layer, take a portion (at least 100 grammes) of the mixed sub-samples, and submit to the laboratory with the completed 2-page Soil Sampling Form (see following pages).
- *Each SSU must be represented by two mixed sub-samples from the corresponding surface layer and sub-surface layer, and a completed Soil Sampling Form describing the SSU.*
- As a minimum, the samples should be assessed in the laboratory for pH (in water), calcium (after extraction with 2.5% acetic acid and reported on a dry weight basis at 105°C) and free $CaCO_3$.
- Sampling should be done preferably by a Registered Forester who is fully acquainted with the recognised and accepted forest soil sampling techniques.
- A brief interpretative / advisory report is required, based on the laboratory test report received on the submitted samples. This report should provide an assessment of site suitability for commercial forest planting, species recommendations and site cultivation / drainage requirements. This report must be signed by a professional forest soils and nutrition expert.

- *The following information must be forwarded to Forestry Division, Department of Agriculture, Food & the Marine, Johnstown Castle, Co. Wexford:*

1. The soil sampling map showing the soil sampling units (SSUs).
2. A copy of the fully completed 2-page Soil Sampling Form for each SSU.
3. Each sample must be related to a plot number and each zone of sampling clearly identified.
4. A copy of the laboratory soil analysis report.
5. The interpretative / advisory report.

The procedures, as outlined above, do not cover highly disturbed soil types or where there has been extensive reclamation, levelling, drainage or disturbance of some kind. In such cases, the person undertaking the sampling will need to consult with a professional forest soils and nutrition expert on the best soil sampling procedures to be adopted. Contact details for specialist consultancy services on forest soils and soils are provided below.

Notes

If the crop fails or does not perform satisfactorily and this performance is shown to be related to soil conditions, then the soil sampling procedures and analysis will be questioned. The responsibility rests with the landowner, the site developer, soil sampler, the forest soil laboratory and the forest soils and nutrition expert. Due to the possibility of crop failure, it is recommended that an independent 3rd party undertakes the initial soil sampling.

Where considered necessary, the Forestry Division may conduct its own independent site investigation, including soil sampling. Should the review findings be at variance with the initial assessment conducted by the landowner or his / her agents, s/he will be advised by the Forestry Division.

The terms and conditions underpinning the Registration of Foresters and Forestry Companies (available from the Forestry Division) detail various sanctions that may be applied if an application and accompanying information is not in accordance with scheme requirements, guidelines and procedures.

- Furthermore, if the Forestry Division is of the opinion that the land is not capable of growing to full rotation, a commercial timber crop of Sitka spruce (Picea sitchensis) of Yield Class 14 or greater, based on one standard application of phosphorus at establishment (see Section 5: General Site Requirements), grant aid and premiums will have to be refunded to the Department.

The Forestry Division will accept accredited laboratories which carry out analysis of soils using the preferred Macaulay extraction method, i.e. extraction with 2.5% acetic acid and reported on a dry weight basis at 105°C.

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SOIL SAMPLING FORM

CLIENT DETAILS

Name & Address (client receiving report/Invoice)		
Telephone No.	Email:	Mobile No.
Your Reference	Contract No.	
Sampled by		Date Sampled
Townland		OS Grid Ref.
Name of Registered Forester	Name & Address of Land Owner (if different):	

SITE DETAILS

Is it currently planted?	Year planted?	What species?
Area: (Ha)		
Dominant Ground Vegetation	Grass [ ] Grass/Rush [ ] Sedge rush [ ] Bracken/Briar [ ] Molinia/Calluna [ ] Eriophorum/Heather [ ] Other [ ]	
Aspect: (facing N,S,E,W, or flat)		Elevation: (1) ft or (2) m

PREVIOUS LAND USE

Farming Practices before		
Previous Crop		
Fertilised /limed Yes/No	Year	Type/Rate
Reclaimed Yes/No	Year	Type

SOIL SAMPLING DEPTHS

Topsoil depth: (cm)		SUBSOIL DEPTH: (CM)
Situation 1. Depth to *Calcareous* material in mineral (i.e. absence of peat) soils (cm)) 1_ 2_ 3_ 4_ 5_ 6_ 7__8__9__10 11 12 13 14 15 16__.		
Situation 2. Depth of Peat over *Calcareous* material Depth to *Calcareous* material (cm) 1_ 2_ 3_ 4_ 5_ 6_ 7__8__9__10 11 12 13 14 15 16__.		

ANY OTHER COMMENTS

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SITE DETAILS: (TICK AS APPROPRIATE)

TOPOGRAPHY		SOIL TYPE		CALCAREOUS MATERIAL		EXPOSURE	
Flat		Brown Earth		Shell Marl		Very exposed	
Concave		Brown Podzolic		Marl (shells)		Mod. exposed	
Convex		Podzoil		Till		Mod. sheltered	
Bottom-slope		Podzol + pan		Course (+boulders)		Sheltered	
Mid-slope		Lithosol		Fine (-boulders)			
Top-slope		Peaty Gley		Esker			
		Gley					
		Blanket Bog					
		Raised Bog					
		Fen peat over calcareous					

SITE FERTILITY*	SOIL DRAINAGE	SITE SUBJECT TO
	Present Potential	
Class A [ ]	[ ] Poor [ ]	Flooding [ ]
Class B [ ]	[ ] Mod. [ ]	
Class C [ ]	[ ] Good [ ]	Frost [ ]
Class X [ ]		
	Out fall? Yes [ ] No [ ]	

***EXPLANATION OF SITE FERTILITY**

Class A: *Fields and ornamental ground*. These are areas, which have been in intensive agricultural use up to relatively recent times, so that they carry characteristic agricultural vegetation (pasture grasses and herbaceous plants, often with high proportion of rushes. They are among the most fertile site types.

Class B:*Furze or whin*. These are sites that were once enclosed by banks, walls or ditches. This indicates that at one time they were considered sufficiently fertile to justify bringing them under agricultural use, and were probably cultivated. The class would include all long-abandoned agricultural land (indicated by the presence of Ulex or bracken). It might also be extended, on the basis of local knowledge, and experience, to include unenclosed areas on mineral soils derived from parent materials of shale, mica-schist or granitic origin.

Class C:*Rough pasture, with or without cropping rock*. These are areas of unenclosed ground, which have never been cultivated or brought under any form of intensive agricultural use. Sites to include are those on unenclosed land, usually upland or bogland, carrying typical unimproved heath land or peat land vegetation.

Class X:*Woodland*. Sites to be included are coniferous, broadleaved and mixed woodland.

LABORATORY TESTS: TICK THE TEST THAT YOU REQUIRE ON YOUR SOIL SAMPLE

pH, Calcium, Free Lime test: For the purpose of determining site suitability and species selection for forestry	☐
pH, Calcium, Magnesium, Potassium, Phosphorus, Free Lime test: For the purpose of determining growth problems and preparing fertiliser prescriptions	☐
pH, Calcium, Magnesium, Potassium, Phosphorus, Free Lime Test, % Organic Matter: For the purpose of screening nursery soils.	☐
Do you require a consultation report?	☐

*Please note that a "topsoil" and a "subsoil" constitutes two samples.

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Appendix 15: **Provenance Declaration Form**

PROVENANCE DECLARATION FORM (For use with Forest Service Grant Schemes)

PART A **Supplier's Document (To be completed by the Nursery/Supplier - Issued in accordance with Council Directive 1999/105/EC)**

Supplier's Official Registration Number: ☐ **Supplier's Document Number:** ☐

Species: Common Name: _____ Botanical Name: _____

Master Certificate of Provenance Number: _____ **Country of Issue:** _____

Note: The Master Certificate of Provenance Number refers to the number of the original seed Certificate of Provenance issued by a designated National Regulatory Authority.

Provenance Details: Country: _____ Provenance: _____

Origin: Indigenous ☐ Unknown ☐ If Non-Indigenous: Country: _____ Region: _____

Category: Source Identified ☐ Selected ☐ Qualified/ Untested Seed Orchard ☐ Tested ☐ Less stringent requirements/Derogation ☐

Type of Basic Material: Seed source ☐ Stand ☐ Seed Orchard ☐ Parents of families ☐ Clone ☐ Clonal mixture ☐

National Register Reference or identity code for region of provenance: _____

Purpose: Multifunctional forestry ☐ Other specific purposes: (please indicate) ☐ _____

Length of time in nursery and production type: _____

Unique identity/batch no. assigned by the Supplier: _____ Quantity dispatched: _____ Date of Dispatch: _____

Name and Address of Purchaser: _____

_____

Delivery Address (if different): _____

Plant Passport Details (where applicable): EU Plant Passport IRL/DAF /Registration Number: _____ PZ Code: _____
Replacement Passport Details: Country: _____ Reg. No: _____ Batch No: _____

It is hereby declared that all of the above details are correct, that the origin/provenance complies with the accepted origin/provenance list in the Forest Service *Forestry Schemes Manual* ☐ and/or the *Native Woodland Scheme Manual* ☐, and that where applicable the original Supplier's document is available for inspection.

Name and address of Nursery/Supplier: _____

_____

Authorised Person: _____

Authorised Person's signature: _____

Date: _____

Nursery/Supplier Stamp

****

PART B **To be completed by the Contractor/Applicant**

Contract No:

Applicant's Name: _____

PART A is an Original: ☐ PART A is a Photocopy: ☐

This Provenance Declaration Form accounts for:

All of the trees planted of the above species on this contract: ☐ **Part** of the quantity planted of the above species on this contract: ☐

If **Part** indicate the number planted and complete a separate Provenance Declaration Form for the remainder: ☐

If **Part** state the Plot Number(s) applicable to this Provenance Declaration Form: ☐

It is hereby declared that all of the above provenance details for the above contract are correct and that where the Nursery/Supplier Declaration (Part A) is a copy the original is available for inspection.

Applicant's signature: _____

or

Name of Contractor: _____

Contractor's Authorised Person: _____

Authorised Person's signature: _____

Date: _____

Contractor Stamp (where applicable)

Version: 21/2/03

Appendix 16: **Foliar Sampling Procedures**

Foliar nutrient levels vary with the seasons of the year and the position of the foliage in the crown. Therefore, sampling to determine fertiliser requirements should follow rigid guidelines, as set out below.

- Conifer foliage samples should be collected during the dormant season, ideally in the period from mid-November to the end of December. However, collection can be extended to the end of February at the very latest.
- Broadleaf species and deciduous conifers should be sampled in August after shoot growth has terminated and before the onset of colour change.
- Foliage samples should be collected from the current season's growth on secondary branches *and* from the upper one-third of the tree.
- Collect sub-samples from at least 20 trees that are representative of the area proposed to be fertilised.
- Combine the sub-samples in a clean, labelled plastic bag, to form a single sample for analysis. Send this sample to a professional laboratory specialising in foliar analysis, together with a completed 2-page Foliage Sampling Site / Crop Form (see following pages).
- As a minimum, the foliage should be tested for nitrogen, phosphorus and potassium content.
- Growers should use the same laboratory throughout the rotation of the forest stand, as laboratories use different analytical tests and report results in different ways.
- A fertiliser prescription, based on the laboratory foliar analysis report, must be prepared by an experienced forestry consultant advising on the most suitable fertiliser and application rate required.
- *The following information must be forwarded to Forestry Division, Department of Agriculture, Food & the Marine, Johnstown Castle, Co. Wexford:*

1. A copy of the fully completed 2-page Foliage Sampling Site / Crop Form.
2. A copy of the laboratory foliar analysis report, showing the foliar analysis results for nitrogen, phosphorus and potassium.
3. A recommendation whether or not fertilisation is required, and if so, the type of fertiliser(s), concentration of fertiliser(s), and rate(s) of application per hectare required.

- Foliar analysis in support of an application for an aerial fertilisation licence must also include supporting documentation as outlined in the Forestry Division *Aerial Fertilisation Requirements*, issued with Forestry Division Circular 11 of 2015.

The following laboratories offer a foliar analysis service:

- Southern Scientific Services Ltd., Dunrine, Killarney, Co. Kerry. Tel. (064) 6633922
- Forest Research, Alice Holt Lodge, Farnham, Surrey GU10 4LH, England.

Tel. 01420 22255 / Fax 01420 23653

Other accredited laboratories may also be acceptable to the Forestry Division.

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FOLIAGE SAMPLING SITE/CROP FORM

ONE FORM TO BE COMPLETED PER SAMPLE

CLIENT DETAILS (client receiving report/Invoice)

Surname					
First Name (s)	Mr [ ] Ms [ ]				
Address *(postal)*					
Telephone No.		Mobile No.		E-mail Address	
Contract No.		Area (ha)			
Name of Registered Forester			Name/Address of Landowner (if different):		

SAMPLE/SITE DETAILS

County		Townland(s)		O.S. 6" Map No.	
Species for analysis		Year planted		Forest type	Mixed [ ] Pure [ ]
Mixtures (if applicable)	1st Species		2nd species	Intimate [ ] Non Intimate [ ]	
Dominant Ground Vegetation		Grass [ ] Grass/Rush [ ] Sedge rush [ ] Bracken/Briar [ ] Molinia/Calluna [ ] Eriophorum/Heather [ ] Other [ ]			
Aspect	N [ ] S [ ] E [ ] W [ ] Neutral [ ]			Elevation (m)	

CROP HISTORY

Herbicide/fertiliser	Yes [ ] No [ ] N/A [ ]	YEAR(S)		TYPE	
				RATE	
Suspected cause(s) Herbicide [ ] Frost [ ] Nutrient [ ] Aphid [ ] Other (specify) [ ] _____					

ANY COMMENTS

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FILL IN AS APPROPRIATE, TICK AS APPROPRIATE

% of Crop Type	Thriftiness (%)	*Site Fertility	Soil Type	Soil Drainage	Exposure
Pre-thicket [ ]	Healthy [ ]	A [ ]	Brown Earth [ ]	Poor [ ]	V. exposed [ ]
Thicket [ ]	Mod. Unthrifty [ ]	B [ ]	Podzol [ ]	Moderate [ ]	Mod. Exposed [ ]
Irregular [ ]	Very unthrifty [ ]	C [ ]	Gley [ ]	Good [ ]	Mod. Sheltered [ ]
	Yellow [ ]	X [ ]	Alluvium [ ]		Sheltered [ ]
	Dead tops [ ]		Lithosol [ ]		
	In check [ ]		Coastal sand [ ]		
			Blanket peat [ ]		
			Raised peat [ ]		
			Fen peat [ ]		
			Fen/Marl [ ]		

EXPLANATION OF SITE FERTILITY

Class A: *Fields and ornamental ground*. These are areas which have been in intensive agricultural use up to relatively recent times so that they carry characteristic agricultural vegetation (pasture grasses and herbaceous plants), often with high proportion of rushes. They are among the most fertile site types.
Class B:*Furze or whin*. These are sites that were once enclosed by banks, walls or ditches. This indicates that at one time they were considered sufficiently fertile to justify bringing them under agricultural use, and were probably cultivated. The class would include all long-abandoned agricultural land (indicated by the presence of Ulex or bracken). It might also be extended, on the basis of local knowledge and experience, to include unenclosed areas on mineral soils derived from parent materials of shale, mica-schist or granitic origin.
Class C:*Rough pasture, with or without cropping rock*. These are areas of unenclosed ground, which have never been cultivated or brought under any form of intensive agricultural use. Sites to include are those on unenclosed land, usually upland or bogland, carrying typical unimproved heath land or peat land vegetation.
Class X:*Woodland*. Sites to be included are coniferous, broadleaved and mixed woodland.

LABORATORY TESTS: TICK THE TEST THAT YOU REQUIRE ON YOUR FOLIAGE SAMPLE

1. Nitrogen, Phosphorus & Potassium, e.g. for the purpose of determining growth problems and preparing fertiliser prescriptions. [ ]
2. Nitrogen, Phosphorus, Potassium, Calcium & Magnesium, e.g. for nutrient assessment of Christmas Trees. [ ]
3. Nitrogen, Phosphorus, Potassium, Calcium, Magnesium & Trace elements, e.g. for nursery plant production. [ ]

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Appendix 17: **Statement of Total Costs**

There is no requirement to submit a statement of costs under the fixed grant scheme for the Afforestation Scheme. The fixed grant scheme also applies to the Tending & Thinning element of the Woodland Improvement Scheme.

For all cost-based schemes, the 'Costs of Works Carried Out' table must be completed in the Form 2 grant application. Please refer to the relevant Scheme Documents for details.

The following schemes are cost-based:

- Woodland Improvement Scheme (excluding the Tending & Thinning element)
- Reconstitution Scheme
- Forest Road Scheme
- Native Forest Conservation Scheme
- NeighbourWood Scheme

Appendix 18: **Statement of Applicant Costs**

Statement of Costs (Applicants)

(All applicants who have completed work themselves must complete this statement of costs.)

Contract Number:	
Townland:	
County:	
Name:	
Address:	
Scheme name:	
Detailed Description of Works Carried out:	

Please complete the boxes below:

Hourly rate for labour:	€
Total number of hours worked:	
Total labour costs:	€

Please sign and date this form:

Applicant's signature: _____ Date: _____

Please note that materials supplied and work carried out by Contractors must be invoiced separately.

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Appendix 19: **Standard Annuity Table**

FACTORS FOR CALCULATING PRESENT VALUE OF AN ANNUITY

	Net Interest Rate Assumed %												
Years	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0.	9.5	10.0
1	0.96	0.96	0.95	0.95	0.94	0.94	0.93	0.93	0.93	0.92	0.92	0.91	0.91
2	1.89	1.87	1.86	1.85	1.83	1.82	1.81	1.80	1.78	1.77	1.76	1.75	1.74
3	2.78	2.75	2.72	2.70	2.67	2.65	2.62	2.60	2.58	2.55	2.53	2.51	2.49
4	3.63	3.59	3.55	3.51	3.47	3.43	3.39	3.35	3.31	3.28	3.24	3.20	3.17
5	4.45	4.39	4.33	4.27	4.21	4.16	4.10	4.05	3.99	3.94	3.89	3.84	3.79
6	5.24	5.16	5.08	5.00	4.92	4.84	4.77	4.69	4.62	4.55	4.49	4.42	4.36
7	6.00	5.89	5.79	5.68	5.58	5.48	5.39	5.30	5.21	5.12	5.03	4.95	4.87
8	6.73	6.60	6.46	6.33	6.21	6.09	5.97	5.86	5.75	5.64	5.53	4.95	4.87
9	7.44	7.27	7.11	6.95	6.80	6.66	6.52	6.38	6.25	6.12	6.00	5.88	5.76
10	8.11	7.91	7.72	7.54	7.36	7.19	7.02	6.86	6.71	6.56	6.42	6.28	6.14
11	8.76	8.53	8.31	8.09	7.89	7.69	7.50	7.32	7.14	6.97	6.81	6.65	6.50
12	9.39	9.12	8.86	8.62	8.38	8.16	7.94	7.74	7.54	7.34	7.16	6.98	6.81
13	9.99	9.68	9.39	9.12	8.85	8.60	8.36	8.13	7.90	7.69	7.49	7.29	7.10
14	10.56	10.22	9.90	9.59	9.29	9.01	8.75	8.49	8.24	8.01	7.79	7.57	7.37
15	11.12	10.74	10.38	10.04	9.71	9.40	9.11	8.83	8.56	8.30	8.06	7.83	7.61
16	11.65	11.23	10.84	10.46	10.11	9.77	9.45	9.14	8.85	8.58	8.31	8.06	7.82
17	12.17	11.71	11.27	10.86	10.48	10.11	9.76	9.43	9.12	8.83	8.54	8.28	8.02
18	12.66	12.16	11.69	11.25	10.83	10.43	10.06	9.71	9.37	9.06	8.76	8.47	8.20
19	13.13	12.59	12.09	11.61	11.16	10.73	10.34	9.96	9.60	9.27	8.95	8.65	8.36
20	13.59	13.01	12.46	11.95	11.47	11.02	10.59	10.19	9.82	9.46	9.13	8.81	8.51

Use of Ready Reckoner for making lump sum payments (example):

Annual Payment (€)	120.00
Number of Years	20.00
Discount Rate	7%
Total Lump Sum (Capitalised) : €120 X 10.59	1,270.80

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