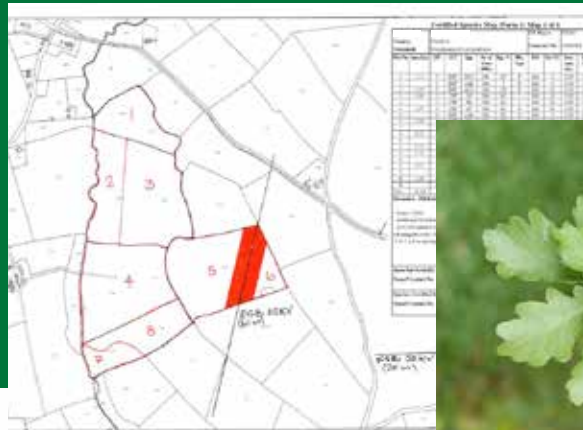


Forestry Standards Manual



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Department of
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An Roinn
**Talmhaíochta,
Bia agus Mara**

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Section 1

Introduction

1.1 Overview of the *Forestry Standards Manual*

The Forest Service 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 consent 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 Forest Service 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 2014 – 2020. The standards and procedures outlined are consistent with the recently published *Forests, Products and People: Ireland's Forest Policy – A Renewed Vision*.

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 2014-2020. 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 consent under the European Communities (Forest Consent and Assessment) Regulations 2010 (S.I. 558 of 2010) (as amended by S.I. 442 of 2012) *and* for grant support under the Afforestation Grant & Premium Scheme. However,

⁽¹⁾ Note that the *Forestry Standards Manual* is also referred to as the *Forestry Standards & Procedures Manual* in various scheme documentation.

the Forest Service may also apply it to applications for consent only (i.e. non-grant aid applications), particularly where the proposed afforestation is associated with a replanting obligation arising from the felling of productive forest elsewhere.

Section 2

Application Process for the Afforestation Scheme

2.1 Introduction

All proposed afforestation developments must receive the prior written approval of the Forest Service.

It is an offence to undertake afforestation without the prior written approval of the Minister. Any afforestation development which proceeds without such approval will not be eligible for grant payment and premium under the Afforestation Scheme. Under the European Communities (Forest Consent and Assessment) Regulations 2010 (S.I. 558 of 2010) (as amended by S.I. 442 of 2012), the Minister may also require the removal of the forest and may seek to prosecute the applicant through the Courts.

No differentiation is made between farmers and non-farmers in relation to the rate of premium payable under the Afforestation Scheme 2014-2020.

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 Grant & Premium Categories (i.e. GPCs 1 to 12b) 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 Forest Service. 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
- 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

The application is processed by the Forest Service and assigned a unique Forest Service 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 www.agriculture.gov.ie

Form 1 applications go through 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 Forest Service. This might range from revised maps to the submission of a NATURA Impact Statement, based on concerns regarding a possible impact on a NATURA 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 and An Taisce), as detailed in Section 19.
- 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, as detailed in Section 19. Sites may also be referred on a case-by-case basis where other potential issues are identified, e.g. proximity to a water abstraction point.
- Environmental Impact Assessment (EIA) screening and / or screening for Appropriate Assessment.
- If the site is greater than 50 hectares, or a proposed forest road is greater than 2,000 metres, an Environmental Impact Statement (EIS) must accompany the Form 1, to enable an EIA to be undertaken.
- In addition, if the Forest Service considers, following its sub-threshold EIA screening, that the proposed development is likely to have significant environmental impact, an EIS will be requested from the applicant, to enable an EIA to be undertaken.
- Following issue of technical approval under S.I.558 of 2010 (as amended), 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: A 'technical approval' confirms that: (i). the prior written approval for afforestation required under the European Communities (Forest Consent & Assessment) Regulations 2010 (S.I.558 of 2010) (as amended) 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 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 prior technical approval may be required, within

a specified time frame, to remove the trees planted and to restore the land to its condition prior to the commencement of the development, and / or 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 described above are initiated simultaneously. The general time frame for these consultations is set out in Section 19.

If the Forest Service 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 his/her report, resulting in delays in the processing of the application. Also note the DAFM *Forestry Scheme Penalty Schedules* (January 2015).

2.3 Changes to specifications

Any proposed changes to species and / or plot boundaries must be submitted to the Approvals Section of the Forest Service, in the form of a revised Certified Species Map and a revised Form 1 Plot Table (i.e. page 5 of the Form 1). 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. 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. Where there are no adverse environmental or social impacts associated with planting less than the area approved, there is no requirement to contact the Forest Service. However, the revised application must still conform to the scheme requirements regarding, for example, ABE allowance and broadleaf content, on its own merits. If Registered Foresters are in any doubt as to whether or not a proposed change amounts to a significant material change in the approved project, s/he should contact the Forest Service 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.558 of 2010 (as amended) 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 8 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 Forest Service 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 Forest Service.

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 7
- 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 Forest Service to assess whether the plantation has been created to the required standards as 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 Grant & Premium Categories (GPCs) for Native Woodland Establishment, Agro-Forestry, etc.) and the Thinning & Tending Scheme are administered under the fixed-rate grant system, and statements of costs are not required. Applicants must detail the area claimed per GPC (as described in Section 4) and if claiming a fencing grant, the fence length, type, and whether or not it is IS 436 standard.

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 plantation, subject to the plantation 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 plantation 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 Forest Service at the appropriate time.

If the entire plantation is up to the required standard, 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 Forest Service 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 Forest Service), *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

At the time of application for payment, the plantation must be to the standard required under the Afforestation Scheme.

2.7 Forest Management Plans

After payment of the 11th premium, all applicants under 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 plantation which is 5 ha or greater. A Forest Management Plan must be submitted before payment of the 12th and subsequent annual premiums can be made. Any application for the 12th premium which is not accompanied by a Forest Management Plan will be returned to the applicant.

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.

The Department has developed a management plan template which must be completed for all grant-aided forests 5 ha or greater. This template will be available for online submission and can be used for all forests where a management plan is required. A Forest Management Plan must be prepared by a Registered Forester and signed by the applicant. See Appendix 8 for details.

2.8 Rules for reduction / withholding of payments

2.8.1 First Instalment Grant and 1st Premium

If part of the planted area fails Forest Service inspection, the applicant must carry out the identified remedial works within the time frame prescribed by the Forest Service. 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.

2.8.2 Second Instalment Grant

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

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

2.8.3 Premiums

The Forest Service carries out random forest inspections for the purpose of premium payments. Where the Forest Service is of the opinion that a plantation 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 plantation. The 5th and subsequent premiums can be claimed when due each year, following payment of the 2nd instalment grant. At the discretion of the Department, where the 2nd instalment has not been applied for, the 5th and 6th premiums may be paid. However, the 7th and subsequent premiums will not be paid until the 2nd instalment application has been submitted and the 2nd instalment grant has been paid.

2.9 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, having regard to a number of criteria 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 Forest Service. 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 Woodland Establishment GPC 9 and GPC 10 require the input of a NWS Forester, who is a Registered Forester who has also completed a Native Woodland Scheme Training Course held by the Forest Service in partnership with Woodlands of Ireland. See Section 15 for further information.

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, s/he must provide a copy of the Folio documents and Filed Plan (Folio Map) identifying the applicant as the owner. 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 Forest Service 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 2) 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 plantation. The owner's solicitor must also provide a letter confirming that the area of the plantation is included in the Deeds, and that ownership is unchanged since the last entry.

3.3 Commonage

A Commonage Consent Form (see Appendix 3) 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.

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 plantation will be subject to the Forestry Act 1946 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.

3.6 Constraints on ownership

The Forest Service 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 plantations.

3.7 Change of ownership

The Forest Service must be notified if there is a change of ownership of a grant-aided plantation 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 Forest Service 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 Forest Service should be notified as soon as possible if the death occurs of the owner or joint owner of a grant-aided plantation, 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 plantation to Forest Service 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 only) in relation to a plantation 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 Grant & Premium Schemes: Guide on Change of Ownership / Change of Applicant* (available on the Department's website www.agriculture.gov.ie/forests-service).

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

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

After the term of the contract ends, the Forestry Act 1946 (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 1946 or any relevant provisions of the Forestry Act 2014 (where commenced) 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 plantation. At the appropriate stage, thinnings from the plantation may provide a cash crop for stake wood or wood-energy. In the longer term, thinning a plantation 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.

Section 4

Plantation Rules and Grant Premium Categories (GPCs)

4.1 Plantation rules

For the purposes of the Afforestation Scheme, a proposed *plantation* 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 plantation rules apply:

- **Rule 1:** The plantation must contain a minimum of 10% broadleaves. This can comprise broadleaves planted in plots of minimum width and / or as additional broadleaves planted for landscape and environmental reasons. (Also, see Note below regarding specific water sensitive areas.)
- **Rule 2:** Each plot within the plantation must comply with one of the Grant & Premium Categories (GPCs) listed in Table 4.1, and its corresponding requirements. Specific requirements apply to each GPC, as indicated in Table 4.1, if it is to receive support. Different grant and premium rates also apply to each - see Appendix 1 for details. Note, plots cannot be combined for premium purposes. Mapping conventions for each GPC are described in Section 18.

(**Note**, where site permitting, the required 10% broadleaf component within any afforestation project located within, or partially within, specified water sensitive areas may include Native Woodland Establishment GPC 9 and / or GPC 10 plot (or plots) along sensitive sections of any watercourse adjoining or crossing the site, to enhance water protection. Specific details are set out in the Forest Service document *Native Woodland Establishment GPC9 & GPC10: Silvicultural Standards (September 2015)*.)

The Forest Service *Forest Biodiversity Guidelines* require that in plantations greater than 10 hectares, Areas for Biodiversity Enhancement (ABEs) should comprise up to 15% of the area. Where plantations 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 GPCs incorporate groups of broadleaf species along any edge that is 'public-facing' (e.g. along roads, facing dwellings), site permitting. These broadleaves should be managed on a continuous cover basis to create a positive landscape impact over multiple rotations.

Please note, an afforestation project comprising *just* GPC 3 will satisfy Plantation Rule 1 where 10% additional broadleaves are planted for environmental and landscape purposes.

Table 4.1 Grant & Premium Categories and corresponding requirements. (Also see Appendix 1 for the current grant and premium rates for each GPC, under the Afforestation Scheme.)

GPC no.	Definition
GPC 1	Land Type 'Suitable Land (GPC 1)' : See Forest Service document <i>Land Types for Afforestation</i> .
GPC 2	Sitka spruce / Lodgepole pine : This plot comprises Sitka spruce and / or Lodgepole pine only. For landscape purposes, a small number of other species should be incorporated into this plot. A GPC 2 plot on its own is not eligible for grant or premium payment as it does not comply with Plantation Rule 1. It must therefore be a component of a larger afforestation project comprising other GPCs.
GPC 3	10% Diverse Mix : This plot comprises an intimate mix of Sitka spruce and / or Lodgepole Pine together with a suitable diverse conifer. The diverse conifer content must be at least 10% of the total number of trees planted. This diverse 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). The requirement for 10% diverse conifers can be waived where the percentage of broadleaves planted along roadsides, external edges, aquatic buffer zones, etc. totals 10% of the total number of trees planted.
GPC 4	This plot comprises an acceptable conifer species other than Sitka spruce and Lodgepole pine.
GPC 5	Broadleaf (Non Oak / Beech) : This plot comprises acceptable broadleaves other than oak and beech. May also include ADBs.
GPC 6	Oak : This plot comprises pure oak. Oak must be planted pure at a stocking rate of 3,300 stems / ha on all sites and at a spacing of 2.0 x 1.5 metres. On large sites where additional shelter is required, an appropriate nurse species may be introduced, but there must be at least 10 lines of oak between each nurse species. All nurse species must be planted at a spacing of 2.0 x 1.5 metres.
GPC 7	Beech : This plot comprises pure beech. Beech must be planted pure at a stocking rate of 3,300 stems / ha on all sites and at a spacing of 2.0 x 1.5 metres. On large sites where additional shelter is required, an appropriate nurse species may be introduced, but there must be at least 10 lines of beech between each nurse species. All nurse species must be planted at a spacing of 2.0 x 1.5 metres.
GPC 8	Alder : This plot comprises pure alder at 2,500 stems / ha. For species diversity, up to 10% of the trees planted may include other species intimately mixed or planted in groups.
GPC 9	Native Woodland Establishment (Scenarios 1-3) : Applicants can apply to establish native woodland over the entire site (i.e. all GPC 9 and / or GPC 10 (see below)) or as a plot(s) within a larger afforestation project alongside other GPCs. See Section 15 for details.
GPC 10	Native Woodland Establishment (Scenarios 4) : Applicants can apply to establish native woodland over the entire site (i.e. all GPC 9 (see above) and / or GPC 10) or as a plot(s) within a larger afforestation project alongside other GPCs. See Section 15 for details.
GPC 11	Agro-forestry : This plot is comprised of silvopastoral agro-forestry systems which combine forestry and pasture. A stocking rate of 400 – 1,000 trees / ha (equal spacing) is required, with a minimum eligible plot size of 0.5 ha and plot width of 20 metres. Acceptable broadleaf species include oak, sycamore and cherry. Other species, including conifers, will be considered on a site-by-site basis. See Section 16 for details.
GPC 12a	Forestry-for-Fibre : This plot comprises eucalyptus and poplar established at specific stocking densities, for the production of fibre for energy and other wood product applications. Other species may also be considered. See Section 17 for details.
GPC 12b	Forestry-for-Fibre (Aspen) : This plot comprises aspen, for the production of fibre for energy and other wood product applications. As the required stocking density is less than that under GPC 12a, a lower grant rate applies. See Section 17 for details.

4.2 Planting of alder in GPCs 5, 6 and 7

Under the Afforestation Scheme, the use of alder in small groups planted in localised areas within sycamore, oak and beech plots claimed as GPC 5, 6 and 7 is permitted where it is:

- planted in small groups in localised moist wet areas or adjoining aquatic zones,
- does not comprise more than 10% of the plot area,
- planted in groups that are less than 0.1 ha in size,
- intimately mixed and less than 10% of the plot area on sites requiring a nurse species, and
- planted at spacings applicable for the claimed GPC, i.e. 3,300 trees / ha for GPCs 5, 6 and 7 (and at 2,500 trees / ha for GPCs 1, 2, 3 and 4).

Furthermore, alder must not be planted in soils where water is stagnant, and groups of alder equal to or greater than 0.1 ha must be plotted and claimed as GPC 8.

In addition to the above rules, GPC 6 and GPC 7 plots must contain oak or beech with the capacity to form at least 70% of the canopy at maturity, when combined with other additional broadleaves and / or appropriate nurse species. However, the alder component, if applicable, cannot exceed 10% of the plot area.

These species percentages will apply to all applications approved after 1st September 2011 and all sites not yet planted.

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 2014-2020 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.

As a basic productivity requirement under the Afforestation Scheme, land must be 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⁽¹⁾. Sitka spruce is used as an indicator species, and it is recognised that other species, if proposed and approved for planting, may not achieve the same level of production on the same site.

Note, the environmental suitability of a proposed afforestation project is also considered by the Forest Service as part of the overall assessment process, and sites considered to be productive in nature may not be approved, due to other constraints.

The following lands are excluded from the Afforestation Scheme:

- Private gardens.
- Golf courses. However areas which are not an integral part of the playing course can be considered for afforestation, on application, e.g. lands along the boundary of public roads, areas adjoining riparian zones, etc.
- Unmodified raised bogs.
- Infertile blanket and Midland raised bogs, e.g. vegetation predominately consisting of heather (*Calluna vulgaris*), hare's-tail cottongrass (*Eriophorum vaginatum*), deergrass (*Trichophorum germanicum*) and sphagnum, and often pool studded. Also containing sundews (*Drosera rotundifolia*) and bog asphodel (*Narthecium ossifragum*).
- Designated blanket and raised bogs.
- Plots with rock outcrop and associated shallow soils in excess of 25% of the plot area.
- Severely exposed sites and some sea-facing locations.
- All areas outlined in the *Forestry Standards Manual* as being ineligible for grant aid, e.g. sites with shell marl within 70 cm of the soil surface, sites which cannot be adequately drained.
- Sites not capable of growing to full rotation, a commercial timber crop of Sitka spruce of Yield Class 14 or greater, based on one standard application of phosphorus at establishment (see above for details).

⁽¹⁾ A standard application of phosphorus fertiliser is defined as 350 kg Granulated Rock Phosphate (GRP) / ha at the time of planting. (In limited circumstances where 350 kg GRP / ha may not be appropriate for environmental reasons, a split application not exceeding a total of 400 kg GRP / ha may be acceptable.)

- Former and existing industrial cutaway peatlands.

The Department may amend the above list from time-to-time, following the operation of the Afforestation Scheme and in accordance with good forest practice.

5.2 Commercial crop

Both conifer and broadleaf sites that are proposed for planting must be capable of producing a commercial sawlog crop of wood. 'Commercial wood' is defined as timber suitable for industrial end use.

5.3 Access

5.3.1 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 plantation. 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 to the Forest Service. Access and legal rights-of-way should be shown on the Biodiversity Map at Form 1 stage.

5.3.2 Adequate access

It is essential that a landowner is aware that s/he will require adequate access from a public road to the proposed plantation 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 Service 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.

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.

5.4 Minimum area

5.4.1 Conifer plantations

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

5.4.2 Broadleaf plantations

- A broadleaf plantation must not be less than 0.1 hectare in area.
- A broadleaf plot must not be less than 0.1 hectare.
- An agro-forestry plot must be not less than 0.5 hectare.

5.5 Minimum width

All GPC 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 the proposed area can be less than 20 metres in width.

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 *Forest Biodiversity Guidelines*, Areas for Biodiversity Enhancement (ABEs) comprise open spaces and retained habitat. Their function is to conserve and encourage the development of diverse habitats, native flora and fauna, and biodiversity.

The *Forest Biodiversity Guidelines* require that up to 15% of the forest area must 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.

6.2 Eligibility as ABEs

A range of features can occur on an afforestation site, from existing habitats and small biodiversity features, to required setbacks and open spaces for future access, to areas subject to legal burden. Tables 6.1 and 6.2 list the various features that can occur, and indicate which 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.

$$\text{Payment area} = \text{Actual planted area} \times (100 / 85)$$

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

$$\text{Payment area} = \text{Actual planted area of 6 ha} \times (100 / 85) = 7.06 \text{ ha}$$

In this case, the eligible claimed area is 7.06 ha (and not 10 ha). 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 proposed sites 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, as set out in the DAFM *Forestry Scheme Penalty Schedules* (January, 2015).

6.3 Criteria for ABE eligibility

The mapping and recording of ABEs is described in Section 18.

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 and 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.
- The area occupied by linear features (e.g. hedgerows, public road setbacks) or point features (e.g. large open-growth trees) must be accurately assessed and noted on the Biodiversity Map. This area must be added to any plot-sized ABE area, to give a total ABE area.

Table 6.1 Site features and eligibility as ABEs.
(Also see Table 6.2 regarding woody habitats.)

Site features	Eligible as ABE?
Open spaces for landscape and biodiversity	Yes
Hedgerows	Yes
Woody habitats	See Table 6.2
Aquatic buffer zones along aquatic zones	Yes
Archaeological site and associated exclusion zone	Yes
Created lakes / reservoirs	Yes
Public road setbacks	Yes
Railway setbacks	Yes
Ridelines and drains	Yes
Internal roads and turning-bay setbacks	Yes
Unplantable areas	No
Areas of shallow, rocky soil	No
Rock and scree	No
Aquatic zones (areas occupied by river or lake)	No
Setbacks around dwelling house & associated buildings	Yes
Rights-of-way held by 3rd parties	No
Areas with turbary or grazing rights held by 3rd parties	No
Major water mains	No
Power line corridors	No
Gas pipeline corridors	No
Public roads	No
Other features, if deemed appropriate by the Forest Service	As applicable

Table 6.2 Eligibility as ABE, of different types of woody habitats.

Woody habitat	Eligibility as Retained Habitat component of ABE (i.e. 5-10% of site)	Options (Options below may be selected alone or in combination)	Comment
Area of scrub (e.g. elder) and non high forest species (e.g. blackthorn, hawthorn, willow)	Yes	<ul style="list-style-type: none"> ➤ ABE (Retained Habitat) ➤ Clear* and plant ➤ Exclude from project 	Non high forest species often have a high biodiversity value
Individual high forest trees (e.g. oak, ash, beech, hazel**, birch, conifer) and areas of high forest trees < 0.1 ha in size	Yes	<ul style="list-style-type: none"> ➤ ABE (Retained Habitat) ➤ Exclude from project 	Individual trees can have a high biodiversity value
Area of high forest trees (e.g. oak, ash, beech, hazel, birch, conifer) 0.1 ha or greater in size	No	<ul style="list-style-type: none"> ➤ Exclude from project 	Such areas meet the definition of a forest, and existing forests cannot receive afforestation payments
Hedgerows	Yes	<ul style="list-style-type: none"> ➤ ABE (Retained Habitat + Setback Area) ➤ ABE (Retained Habitat) 	Apply unplanted setback where required to achieve 15% ABE for the site. Otherwise, no setback required.
Rhododendron / laurel	No	<ul style="list-style-type: none"> ➤ Clear and plant ➤ Exclude from project 	These are non-native invasive species and must not be retained as ABE
<p>* Under licence, if required. Note, the retention of alluvial woodland comprising willow may require prioritisation within the wider landscape, due to ecological and water protection considerations.</p> <p>** Hazel may be classed as 'scrub' where it has encroached in the last 5 years.</p> <p>If 'Yes' is indicated in the second column, the standard ABE requirements apply, i.e.</p> <ul style="list-style-type: none"> ➤ Retained habitat must be an integral part of the site. ➤ Select retained habitats that give the greatest biodiversity benefit. ➤ Retained habitat and open space should each represent 5-10% of the overall site. The combination of open space and retained habitat should be 15% of the total claim area (for areas 10 ha or greater). Where the total ABE adds up to more than 15%, the claim area must be reduced. ➤ In sites less than 10 ha in area, the ABE elements should be designed in conjunction with neighbouring land use and the % ABE may be less than 15%. 			

- 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 plantation).
- Select features that will deliver the 'best quality' ABEs within the new forest, while also protecting watercourses and archaeological sites through the use of aquatic buffer zones and exclusion zones.
- Table 6.2 details the eligibility as ABEs, of different types of woody habitat.

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, with effect 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 of all ABEs across the site does not exceed 15% of the claimed area. The GPC of the ABE should be that of the largest planted GPC area (i.e. the GPC that makes up the majority of the plantation) comprising the application, with the following exception: biodiversity plots which are located on sites of Land Type 'Suitable Land (GPC 1)' (as per the Forest Service document *Land Types for Afforestation*) or which are located adjacent to a GPC 1 plot, will be paid at the GPC 1 rate, irrespective of the largest GPC in the plantation.

6.5 Setback / Corridor width requirements

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

- **Existing trees:** If existing individual trees did not breach the setback distances applicable at the time they were planted, the setback distances set out in this manual in most cases do not apply to them. For environmental and landscape reasons, the Forest Service may decide that any existing trees within a setback area that breach current setback conventions may not be applicable for inclusion in a planting proposal eligible area. This does not preclude a special condition being made in relation to individual projects.
- **Planted trees:** Planting in this case refers to the planting of trees for all schemes, including the Afforestation Scheme (GPCs 1-12b), the Native Woodland Conservation Scheme, the Woodland Improvement Scheme and the Reconstitution Scheme. In these cases, all of the setback distances apply.

Failure to adhere to the required setback distances set out below may result in 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 plantations, the strip 10 metres to 20 metres from the road should be planted with broadleaves or groups of broadleaves, and not left unplanted. 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 60 metre, or 30 metre with the written consent of the owner. Setback distance is most critical when a building is

surrounded by forest on two or more sides. Where adjoining dwelling houses, including the curtilage, are 0.2 hectares or less, planting should be kept back 30 metres from the property boundary.

As per the *Forestry & Landscape Guidelines*, “Forest developers should liaise with the owners of neighbouring properties, to resolve in advance any potential concerns.” In particular situations where the Forest Service 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, it may specify local consultation and proof of same, as a specific requirement at pre-approval stage. While the prescribed 60 metre ‘without permission’ setback will suffice in most cases, the Forest Service may require greater setbacks or indeed, the exclusion of sections of a proposed site, if deemed necessary on landscape grounds.

Applicants and Registered Foresters should also take into account 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.

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 or as set out in the folio document.

6.5.4 Major water mains (Local Authority or Group Scheme)

A corridor of 15 metres applies.

6.5.5 Gas pipelines

A corridor of 15 metres applies where the gas pipeline has been installed prior to planting. A corridor of up to 30 metres 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 30 metre 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 plantation pre-dates the installation of the wind turbines,

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

The *Forest Service Policy on the Granting of Felling Licences for Wind Farm Developments* may also affect decisions in relation to afforestation. This policy is available at www.agriculture.gov.ie/forests-service/tree-felling/tree-felling/

6.5.8 Setbacks for railway lines

20 metres.

6.5.9 Streams, rivers, lakes, reservoirs

Setback (i.e. aquatic buffer zone) as per the *Forestry & Water Quality Guidelines*.

6.5.10 Points of water abstraction

The setback distance in relation to pump houses and substantial tank-type reservoirs is 30 metres (i.e. as for dwelling houses and associated buildings, without the need to obtain the owner's consent). A 30 metre 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.

6.5.11 Setback from swallow holes and turloughs

Apply the aquatic buffer zone widths set out for aquatic zones in the *Forestry & Water Quality Guidelines*, unless otherwise specified.

6.5.12 Hedgerows

See Table 6.2.

6.5.13 Ridelines and firebreaks

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

6.5.14 Internal roads, turning bays, etc.

These planned features normally require a 15 metre wide corridor.

6.5.15 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.

Section 7

Overhead Power Lines

7.1 Overview

The contents 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. Corridor areas do not qualify for Forest Service grant aid (i.e. they do not attract payment).

The area suitable for afforestation which is left unplanted due to the overhead power lines should be indicated on the Certified Species Map but not included in the claimed area for grant and premium (see Section 18 for mapping conventions). Areas not falling under the corridor but which, because of the corridor, cannot satisfy the minimum area or width requirements under the Afforestation Scheme, should also be recorded.

In the corridors mentioned above, trees may be grown to a height of no more than 3 metres above the ground. Trees exceeding 3 metres within this corridor must be cut or lopped by the landowner. However, a corridor of 4 metres 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 18 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 (centred)
Low voltage (230 V / 400 V)	None (clearance from branches and tree tops 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 Forest Service. Compensation may be claimed from the ESB in respect of the amounts repaid to the Forest Service.

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 Forest Service), and
- agreement to grant an easement on the lands in question.

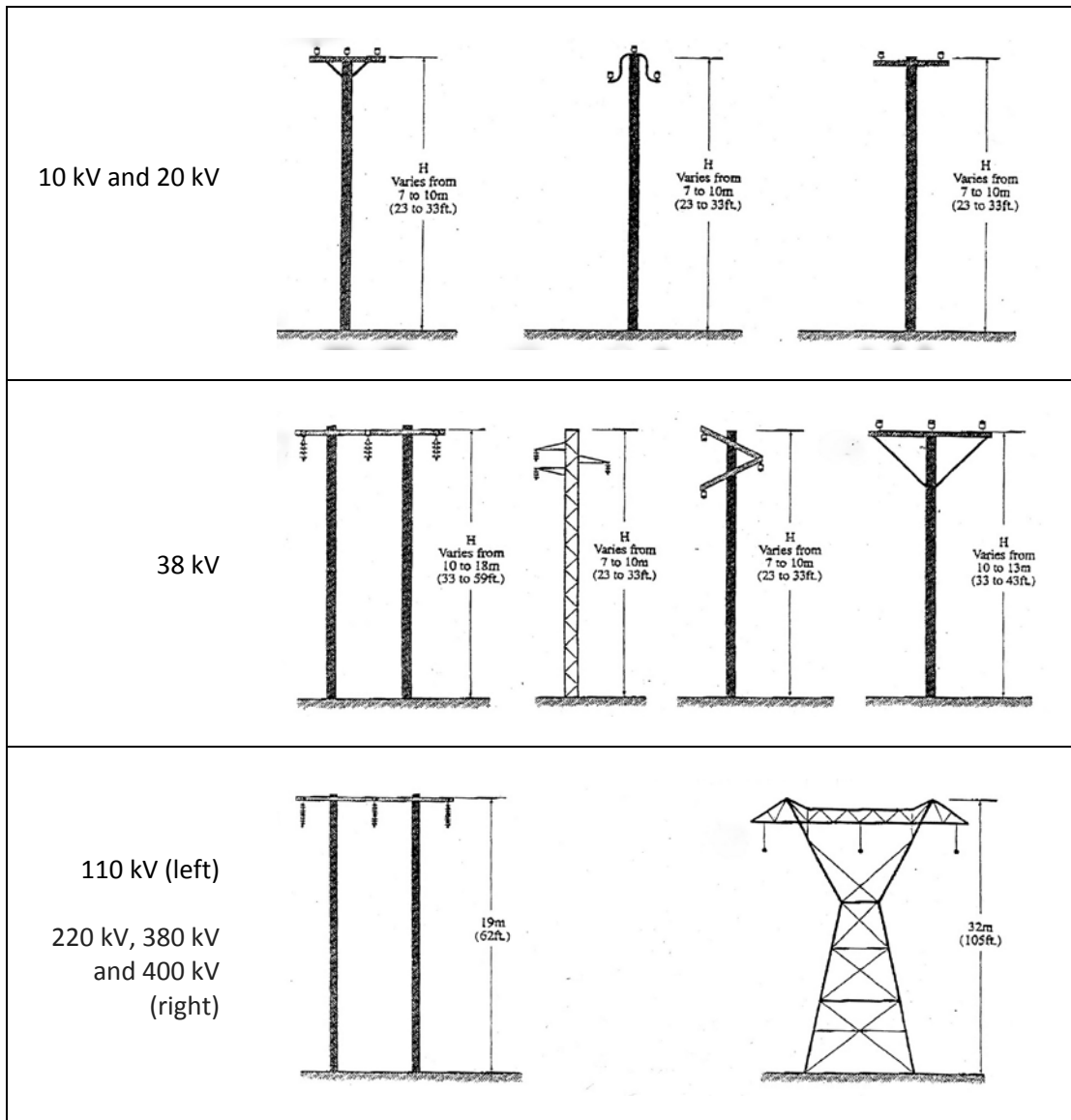
All claims for compensation should be processed initially through the ESB local or regional office. No compensation will be paid until after the site has been planted.

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.

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.



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.

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 Forest Service 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 Forest Service 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.

Section 8

Species, Provenance and Plant Health Requirements

8.1 Species selection

A prerequisite for grant aid is that the site is capable of producing a commercial crop of wood and it is necessary to carry out a proper assessment of site, soil and species suitability in order to establish this. Yield class is a measure of the average rate of growth of forests measured in cubic metres of commercial timber per hectare per year ($\text{m}^3 / \text{ha} / \text{yr}$), assuming the crop will be grown on to the age of maximum mean annual increment. In certain areas the presence of high populations of deer and grey squirrel may also 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⁾. The guide is available from the Forest Service and is recommended reading (while not necessarily Forest Service policy) 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 colour codes the suitability of a species or mixture from 'optimal' to 'unsuitable'. Using this colour code, certain species can be disregarded immediately as not being suitable for a particular site. The species which are deemed more suitable can then be evaluated, based on additional information (susceptibility to frost, exposure, etc.) from Table 8.2.

For reforestation sites on many podsols and peaty podsolised gleys, the potentially suitable species range may be expanded due to the ameliorative effect of 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 'X'.

Where free calcium carbonate is present in the topsoil, most species will suffer from lime induced chlorosis. Soils most at risk are 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.

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

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

On reforestation sites, particularly in the case of soils D, E, F, G and H, the ameliorative effect of the previous/pioneer crop will result in the upgrading of many species to a higher level than that shown in the table above. This also applies where these soils have been reclaimed or modified in some way for agricultural purposes.

Any intended development outside these specifications should be referred to the Forest Service.

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

Characteristic A (ease of establishment) includes a number of factors in the first five years following out-planting. These include survival, 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 watertables, 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 185 metres elevation in the east and 120 metres in the west of Ireland, depending upon soil, aspect, topography and drainage.

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

Species	Characteristics								
	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	

Characteristics rated on a scale of 1 to 5			
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 Forest Service.

All sites must have at least 10% broadleaves, as per Plantation 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 environment enhancing reasons. Where possible, home collected seed or plants from an Irish seed source should be used. These can be established either within the plantation or, where appropriate, at edges of woodland.

Table 8.3 Acceptable conifer species (with abbreviations).

Conifer species	Botanic name	Abbreviation
Lawson cypress	<i>Chamaecyparis lawsoniana</i>	LC
Leyland cypress	<i>Cupressocyparis leylandii</i>	LEC
Monterey cypress	<i>Cupressus macrocarpa</i>	MC
Western hemlock	<i>Tsuga heterophylla</i>	WH
European larch	<i>Larix decidua</i>	EL
Hybrid larch	<i>Larix eurolepis</i>	HL
Douglas fir	<i>Pseudotsuga menziesii</i>	DF
Grand fir	<i>Abies grandis</i>	GF
Austrian pine	<i>Pinus nigra</i> (var. <i>nigra</i>)	AP
Corsican pine	<i>Pinus nigra</i> (var. <i>maritima</i>)	CP
Lodgepole pine	<i>Pinus contorta</i> (North Coastal)	LPNC
Lodgepole pine	<i>Pinus contorta</i> (South Coastal)	LPSC
Monterey pine	<i>Pinus radiata</i>	MP
Scots pine	<i>Pinus sylvestris</i>	SP
Norway spruce	<i>Picea abies</i>	NS
Serbian spruce	<i>Picea omorika</i>	SES
Sitka spruce	<i>Picea sitchensis</i>	SS
Western red cedar	<i>Thuja plicata</i>	WRC
Coast redwood	<i>Sequoia sempervirens</i>	CR

Table 8.4 Acceptable broadleaf species (with abbreviations).

Broadleaf species	Botanic name	Abbreviation
Common alder	<i>Alnus glutinosa</i>	ALD
Italian alder	<i>Alnus cordata</i>	ALDC
Ash (<i>Note, currently not approved for new afforestation sites until further notice</i>)	<i>Fraxinus excelsior</i>	ASH
Beech	<i>Fagus sylvatica</i>	BE
Southern beech	<i>Nothofagus procera / N. obliqua</i>	SBE
Cherry	<i>Prunus avium</i>	CH
Spanish (Sweet) Chestnut	<i>Castanea sativa</i>	SC
Lime	<i>Tilia cordata / T. platyphyllos</i>	LIM
Norway maple	<i>Acer platanoides</i>	NM
Sycamore	<i>Acer pseudoplatanus</i>	SYC
Pedunculate oak	<i>Quercus robur</i>	PO
Sessile oak	<i>Quercus petraea</i>	SO
Red oak	<i>Quercus rubra</i>	RO
* Downy Birch Silver Birch (Registered as 'Qualified' only) on application	<i>Betula pubescens</i> <i>Betula pendula</i>	BI
Hybrid aspen	<i>Populus tremula x tremuloides</i>	HA
Eucalyptus (species)	<i>E. glaucescens</i>	EUC1
	<i>E. gunnii</i>	EUC2
	<i>E. nitens</i> (within 50 km of coast, frost prone, low-lying areas to be avoided)	EUC3
	<i>E. rodwayi</i>	EUC4
	<i>E. subcrenulata</i>	EUC5
Poplar (clones)	18 71058/2	POP1
	Fritzi Pauley	POP2
	Trichobel	POP3
	V.471xV.24(65)/34	POP4
	72030/7	POP5
	76004/10	POP6
	Raspalje 19	POP7
	Unal	POP8
* Teagasc, in association with university partners UCD and UCC and supported through funding by the Department of Agriculture, Food and the Marine, have reached a stage in the birch improvement programme, where 'qualified' material is available, although limited in quantity at present. Birch 'qualified' is now eligible for planting as a commercial timber crop species and can be claimed as GPC 8 for grant and premium purposes. Does not preclude the use of unqualified material as AdB.		

8.2 Soil and water analysis

8.2.1 Soil

Each site being assessed for suitability must, amongst other things, undergo a preliminary soil investigation by a Registered Forester. There must be sufficient depth of topsoil on sites to facilitate vigorous tree growth which must be maintained throughout the rotation. 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 clear 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.

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

8.2.2 Water

For assessing the sensitivity of surface water to acidification, refer to Appendix 11.

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 seed from registered Irish seed stands should be used and applicants are encouraged to ask first for plants from Irish seed. Only the origins/provenances in Tables 8.5 and 8.6 will be approved for grant aid. **Note this does not include species or clones listed as eligible for grant aid in the Forestry-for-Fibre Scheme.** Applicants must check with, and seek written approval from the Forest Service before purchasing plants with origins / provenances other than those listed and registered material in a category 'Source Identified'.

Section 15 details further requirements under Native Woodland Establishment GPC 9 and GPC 10.

8.4 EU Forest Reproductive Material Regulations

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 Forest Service, 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.

Table 8.5 Accepted seed origins / provenances for conifer species.

Conifers	
Sitka spruce (<i>Picea sitchensis</i>)	Registered Irish and British seed stands and material from Danish and British seed orchards. Seed imports under EU derogation from the Queen Charlotte Islands, Coastal Washington and Oregon. Rooted cuttings derived from genetically improved Washington or Queen Charlotte Island material. <ul style="list-style-type: none"> ➤ On most sites (low to mid-elevation sites of less than 300 m, except low lying areas in the Midlands) plant: <u>South Washington and North Oregon origins</u> ➤ On cold frost prone sites (above 300 m elevation and low-lying areas in the Midlands) plant: <u>Queen Charlotte Islands (QCI) origins</u>
Norway spruce (<i>Picea abies</i>)	Registered Irish and British seed stands and registered seed stands in the low elevations of Denmark and Germany (north of Frankfurt). Seed imports under EU derogation from Sudetan and Beskid regions of the Czech Republic, Tatra Mountains of Slovakia, and the northeast and lowlands of south Poland.
Serbian spruce (<i>Picea omorika</i>)	Irish and British stands and seed imports from Serbia.
Lodgepole pine (<i>Pinus contorta</i>)	Irish and British seed orchards and stands. <ul style="list-style-type: none"> ➤ In mixture with Sitka spruce: <u>Alaskan and North Coastal (including QCI and Vancouver Island origins)</u> ➤ Exposed, infertile sites: <u>QCI, Vancouver Island and inter-provenance hybrids</u> ➤ Less exposed, mineral soils: <u>Inter-provenance hybrids, Lower Skeena River (Terrace, Kalun Lake and Hazelton) and South Coastal seed orchard material</u>
Scots pine (<i>Pinus sylvestris</i>)	Irish and Scottish seed orchards and registered seed stands.
Austrian pine (<i>Pinus nigra</i> (var. <i>nigra</i>))	Registered Irish and British seed stands.
Corsican pine (<i>Pinus nigra</i> (var. <i>maritima</i>))	Registered Irish, British and Corsican seed stands.
Monterey pine (<i>Pinus radiata</i>)	Guadalupe Island (Mexico) or stands derived from this origin, and home-grown Irish healthy, non-yellowing trees.
Douglas fir (<i>Pseudotsuga menziesii</i>)	Registered Irish and British seed stands and seed imports under EU derogation from Coastal Washington and northern Oregon.
Grand fir (<i>Abies grandis</i>)	Irish and British stands and imports from the Olympic Peninsula, Puget Sound (Washington), Washington and Oregon Coast Range Mountains, and Vancouver Island.
Western hemlock (<i>Tsuga heterophylla</i>)	Irish and British stands and seed imports from Puget Sound region of Washington State and the Coast Range and Cascade Mountains of Washington and Oregon.
Western red cedar (<i>Thuja plicata</i>)	Irish and British stands and seed imports of seed from Vancouver Island (British Columbia) and Coastal Washington and Oregon.
European larch (<i>Larix decidua</i>)	Registered Irish, British, German (Schlitz) and low elevation Austrian (Wienerwald) seed stands. Seed imports under EU derogation from Southern Poland, Czech Republic (Sudetan Mountains) and Slovakia (Tatra Mountains).
Monterey cypress (<i>Cupressus macrocarpa</i>)	Irish and British stands and seed imports from coastal southern Oregon and northern California.
Coast redwood (<i>Sequoia sempervirens</i>)	Irish and British stands and seed imports from coastal southern Oregon and northern California.
Lawson cypress (<i>Chamaecyparis lawsoniana</i>)	Irish and British stands and imports from coastal southern Oregon and northern California.

Table 8.6 Accepted seed origins / provenances for broadleaf species.

Broadleaves	
Pedunculate oak (<i>Quercus robur</i>)	First Choice: <u>Registered</u> Irish material. Otherwise, <u>registered</u> British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt) seed stands.
Sessile oak (<i>Quercus petraea</i>)	First Choice: <u>Registered</u> Irish material. Otherwise, <u>registered</u> British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt) seed stands.
Red oak (<i>Quercus rubra</i>)	<u>Registered</u> Irish, British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt) seed stands.
Beech (<i>Fagus sylvatica</i>)	<u>Registered</u> Irish, British, French (north of Paris), Belgian, Dutch, German (north of Frankfurt) seed stands.
Ash (<i>Fraxinus excelsior</i>) <i>(NOTE Currently not approved for new afforestation sites until further notice)</i>	First Choice: Irish native material. Otherwise, <u>registered</u> British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish German (north of Frankfurt) seed stands.
Sycamore (<i>Acer pseudoplatanus</i>)	Irish, British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt) stands.
Norway maple (<i>Acer platanoides</i>)	Irish, British (English and Welsh), French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt) stands.
Common alder (<i>Alnus glutinosa</i>)	First Choice: Irish native material. Otherwise, British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt) stands.
Cherry (<i>Prunus avium</i>)	First Choice: Irish native material. Otherwise, British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt) stands. <u>Not</u> seeds resulting from fruit processing.
Southern beech (<i>Nothofagus procera</i> / <i>N. obliqua</i>)	Irish and British stands and <i>N. procera</i> imported from Chile (Malleco and Llanquihue). <i>N. obliqua</i> from Chile (Frutillar).
Lime (<i>Tilia cordata</i> / <i>T. platyphyllos</i>)	Irish, British, French (north of Paris), Belgian, Dutch, Danish, German (north of Frankfurt) stands.
Spanish chestnut (<i>Castanea sativa</i>)	French seed orchard material. <u>Not</u> nuts collected for consumption.
Birch (<i>Betula pubescens</i> / <i>B. pendula</i>)	First choice: Irish native material 'Qualified'. Otherwise, British material.
Rowan (<i>Sorbus aucuparia</i>)	First choice: Irish native material. Otherwise, British material.

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, 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 Forest Service. 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.

For the purpose of the Forest Service 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 this 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 Forest Service under the EU Forest Reproductive Material Regulations and for regulated species under the EU Plant Health Regulations. In these cases 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 the plants covered by Part A have been planted in more than one grant application/contract. 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, no deliveries of plants of that species have been planted 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.

8.5 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 Forest Service 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 Forest Service carries out an ongoing survey of the national forest estate for quarantine forest pests and diseases. 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.*

8.5.1 Plants originating in Ireland and other EU Countries

In the context of the Internal Market, Ireland has been granted a special Protected Zone status with regard to 13 harmful forest pests and diseases. A Protected Zone is essentially an area in the EU where a pest of quarantine significance, established in other parts of the EU, is not present despite favourable conditions for it to establish.

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 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

Table 8.7 Forest plants requiring EU plant passports.

Conifers	Protected Zone Code	Broadleaves	Protected Zone Code
<i>Abies</i>	ZP Conf.	<i>Quercus</i>	ZP A16
<i>Larix</i>	ZP Conf.	<i>Castanea</i>	ZP A4.1 C02
<i>Picea</i>	ZP Conf.	<i>Sorbus</i>	ZP B2
<i>Pinus</i>	ZP Conf.	<i>Populus</i>	ZP C3
<i>Pseudotsuga</i>	ZP Conf.	<i>Crataegus</i>	ZP B2
		<i>Malus</i>	ZP B2

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 coding to indicate that the plants are free of Oak Processionary Moth and are free to move into or within Ireland. The quantity and a unique batch number must also be supplied.

EU Plant Passport IRL/DAFM/1234.

Quercus petraea ZP A16

8.5.2 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.

8.6 Conifer mixtures

All crops to be 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 and productivity of a new plantation.

Table 8.8 shows the species which can be considered in mixture. Where alternative mixtures are proposed the Forest Service 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							
<p>'Y' indicates compatibility on certain sites. Otherwise not compatible. * JL is not currently on the approved list of species.</p>										

8.7 Broadleaf and conifer mixtures

COFORD's *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 on suitable sites. Mixtures require careful site selection and management to ensure that the desired final crop establishes successfully. The Forest Service 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 the rotation and beyond. A site which cannot be adequately drained should not be submitted for pre-planting approval or payment.

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 watertable or subsoil. This height is not measured from the top of the mound. Broadleaf species generally require greater depths.

Root structure should radiate in all directions on the horizontal plane. Drainage should not impair site access and should be designed in conjunction with the road network. Similarly, it is important not to impair future harvesting efficiency by creating obstacles. Traditional drainage routes must be respected and maintained. Drainage should not be installed so as to cause or threaten environmental damage.

The Ordnance 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.floodmaps.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 erodable soils, 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 stage. If deemed necessary, the Forest Service will seek the input of an engineer at pre-approval stage, to design drainage.

Afforestation will not be approved on steep sites, where drainage is required but where the slope, soil erodability and the lack of level ground negate the possibility of achieving an appropriate drainage system and an effective aquatic buffer zone.

9.1.1 Buffer zones and exclusion zones

Buffer and exclusion zones must be considered when designing a forest. An effective buffer zone is an area where forest operations are curtailed and which is managed for environmental protection and enhancement. Regarding watercourses, within the required aquatic buffer zone (see the *Forestry & Water Quality Guidelines*), natural ground vegetation is allowed to

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

Soil type	Slope categories					
	< 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 erodable, e.g. gleys	L	L	L	L	M	H
Erodable, e.g. brown earths	L	L	M	H	H	H
Very erodable, e.g. podsols, some peats	M	H	H	H	H	H

develop, with the additional planting of suitable riparian tree species (pit-planted), where appropriate. An exclusion zone under the *Forestry & Archaeology Guidelines* excludes all operations.

In most cases, slope will allow for drainage channels to taper out or be connected to an interceptor drain rather than enter a buffer zone. The buffer zone / interceptor drain will slow down the water and capture sediment.

9.1.2 'Flat' difficult-to-drain areas

All drainage channels, slope allowing, should taper out before entering the aquatic buffer zone. The objective is to ensure that sediment and soluble pollutants do not enter the aquatic zone. The aquatic buffer zone filters the water of sediment and decreases nutrient exports, if any, from the site.

However, on flat sites this is not feasible, as the site would not be drained. In these cases, it may be necessary to connect drains directly into the aquatic zone, provided it can be assured that sediment and soluble pollutants will not enter the aquatic zone at establishment and throughout the rotation to clearfell stage. There should be no erosion risk on these flat sites or, if there is, sediment control measures must negate the risk.

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 development 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. Therefore, no connection to aquatic zones is permitted, and this may render some flat sites non-viable, unplantable and not eligible for grant aid.

9.1.3 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 watertables. 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 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 watertable 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 watertable 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 200 metres 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, main drains and existing drains.

See Section 18 for details on the preparation of the Biodiversity Map.

9.1.4 Drain types (also see Figure 9.1)

- **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 have to be extended into erodable material, 'mini' silt traps should be placed appropriately by deepening the drains in places. Collector drains should discharge *via* sediment traps and / or an interceptor drain (see below) into the aquatic buffer zone. On flat sites, collector drains may have to discharge directly into the aquatic zone, *via* appropriate sediment traps.

- **Interceptor drains:** These are constructed along the outer edges of aquatic buffer zones. They collect the discharge from the drained area and allow it to overflow into the aquatic buffer zone.
- **Cut-off drains:** These are constructed immediately upslope of a site, and are designed to direct water away from the site.

9.1.5 Sediment control and management

Sediment control can be achieved by minimising flow rate and flow volume. 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.

A large number of small sediment traps located throughout the site is usually more efficient than a small number of large traps located close to the watercourse. Sediment traps should be of such number, design and size that they are sufficient for the full rotation. If they prove inadequate and fill with sediment, additional traps should be created or the existing ones

Figure 9.1 Diagram illustrating the use of different drain types and associated sediment traps. Note: Diagram for illustrative purposes only – each site will have to be assessed individually to determine the appropriate drainage design. Designs similar to the one shown may be suitable for steeper erodable sites.

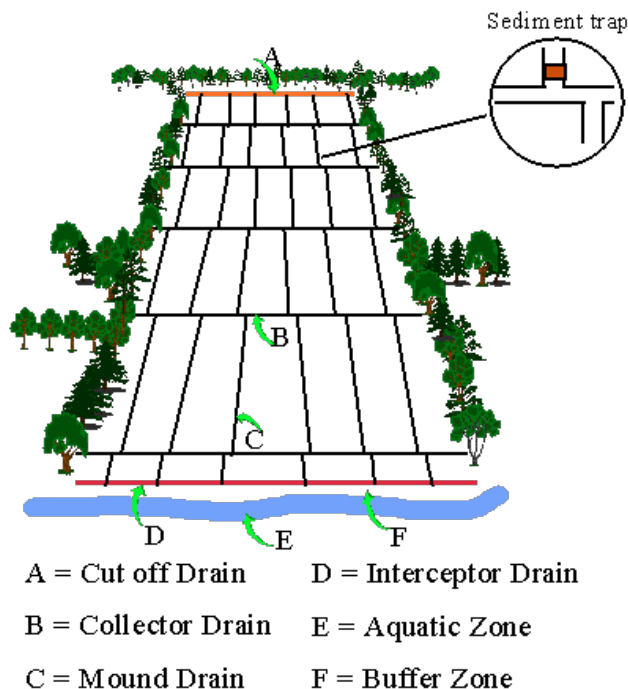
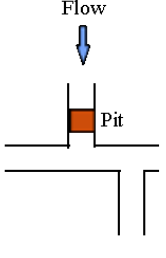


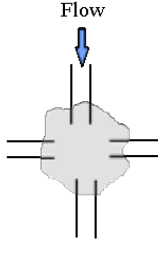


Figure 9.2 Sediment trap types (often referred to as 'Silt Traps').

No. 1 (Pit)	No. 2 (Staggered Type)	No. 3 (Run Off Type)	No 4 (Swamp Type)
			
<p>The end of the mound drain is slightly deepened for c. 0.3 metres before it enters the collector drain.</p>	<p>Forces water to slow down within the trap - more efficient than if the water ran straight through the trap. Minimum 1 metre long.</p>	<p>Caters for runoff events that exceed the design capacity. Useful on slopes. Overflows floods onto vegetation. Do not plant within 4 metres of the lower side in order to conserve dense vegetation.</p>	<p>Many drains may enter a natural depression to create a mini "swamp". Dimensions of the "swamp" depend on the needs of the site. May be c. 20 sq. metres. Do not plant within 4 metres of the "swamp".</p>

maintained so that there is no risk of sediment reaching the aquatic zone. They should be located on level ground and should be maintained - sediment traps can fill within days on highly erodible sites. 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.

Small dams, e.g. timber or stone, geotextiles, terram, have been used with success 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.

Use existing agricultural drains wherever practical. Clear them of vegetation and change their shape only if essential to their function. In this event, prior installation of sediment traps will be required.

Existing drains should be excavated, but only if required, prior to mounding drains being installed. The construction of new drains, or changing the shape of drains, should not take place in exclusion zones and should only enter aquatic buffer zones where the site is flat (or almost so) and will not result in sediment entering the aquatic zone.

Sediment control and management measures must take account of rainfall levels and the possible likelihood of rainfall deluge and flash-flood events. Aquatic buffer zones 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.

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 the potential to retain and actively manage areas of emergent native woodland, under the 'Private Emergent Woodland' category of the Native Woodland Conservation Scheme.

If clearance with machine is required, 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 www.agriculture.gov.ie/media/migration/forestry/landandforestfires/CofPPrescribedBurningFinal90212.pdf

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 may easily give rise to wildfire conditions and damage to land, habitats and other resources. Ideally, gorse should be treated by flailing.

Where trees are required to be removed (e.g. to facilitate the erection of a fence), a felling licence is necessary. For details, contact the Felling Section, Forest Service, 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. The cultivation techniques listed in Table 9.2 are typically used in the afforestation of different soil types in Ireland.

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 entering the aquatic buffer zone.
- Depth of mound drains is dependent on soil quality for mounding, but should not be

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 podsolised 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, podsolised gleys and peaty podsols with more than 20 cm peat, and blanket peat	Mound
Peaty podsols, 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 permits
Suitable soil types and site conditions	Mechanical planting can be considered

more than 45 cm deep in mineral soils or more than 60 cm deep in peat 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.
- Collector drains should be excavated to a depth and size capable of collecting water from mound drains (normally 40-60 cm deep).
- 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, where possible.
- Ensure that mound drains taper out in sediment traps before entering an aquatic buffer zone.

Mounds

- Mound rows at 2 m spacing, except where otherwise stated by the Forest Service. 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.
- 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).

- Collector drains should be 55-60 cm.

9.3.3 Moling

- Install mole drains at a depth of 45 cm, at 2 m spacing.
- Use collector drain with sloped side-walls spaced 50-80 metres apart and to a depth of 55-60 cm.
- Mole ploughs should be mounted directly onto low ground pressure machines.
- Where a ball-and-chain is used for mole drains, the size of the ball should be approximately 10 cm in diameter.

9.3.4 Scarifying

- Scarifying should not be considered in shallow soils.
- Scarify to a depth of 10-20 cm.
- Collector drains to be installed as required. On sites with slopes greater than 4° (1-in-15) (particularly Old Red Sandstone sites), space collector drains 50 metres apart and align at a slope of 2° (1-in-30).
- The intended planting area should be cleared of vegetation for an average width of 60 cm.

9.3.5 Agricultural ploughing (double furrow)

- Agricultural ploughing should only be carried out on free-draining agricultural soils with no compaction layer.
- Plough using a double furrow plough to depth of 20 cm, at 2 metres apart.
- The use of a double furrow plough with a rip attachment has been shown to be effective.
- The planting area (double furrow) to be vegetation-free for a width of 80 cm.
- Plant on the sod furthest from the furrow or between the two sods, to avoid air pockets.
- Install collector drains if required. On slopes greater than 4° (1-in-15), space 80 metres apart, particularly on easily erodable soils.

9.3.6 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.

9.3.7 Pit-planting

Pit planting may be suitable for mineral or old woodland sites. It may also be appropriate on steep slopes where other types of preparation may lead to sediment runoff. Pit-planting is also suitable where planting single or small groups on native riparian trees within the aquatic buffer zone, as long as those trees can be established and grown successfully.

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 circular by the Forest Service.

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.
- 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

Bagged 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.

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
European larch / Hybrid larch	3	5	35 - 60
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 Forest Service circular. They are suitable for sites without the potential for the vigorous 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

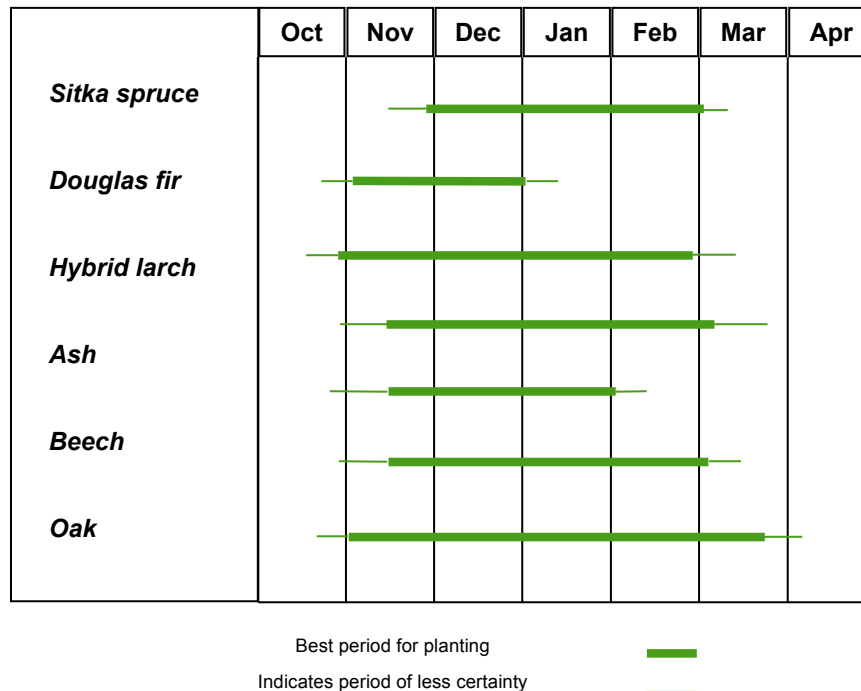
Leave bags slightly open to allow cooling without excessive drying. Bags showing evidence of damage should be repaired with heavy duty tape or placed inside another new bag.

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 of plastic containers and bags is not acceptable. Note the Forest Service penalty for dumping, as set out in the DAFM *Forestry Scheme Penalty Schedules* (January, 2015).

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 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

Table 10.2 Optimal dates for planting freshly-lifted stock.



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.

10.3.1 Cold store plants

Plants from cold storage can be used to extend the planting season to late April / early May. Planting cold stored plants late in the planting season can be risky as the risk of drought increases. Results have shown that where cold stored plants have been planted late in the planting season, the height increment is reduced, particularly for larch.

10.4 Planting methods

Trees 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. 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 over, 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 ground. The spade is used to lift the slit and the trees 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 and the trees 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 sensitive sites where no ground preparation has taken place.

Trees must be planted and positioned on top of mounds or ribbons and beside rips. It is important to ensure that trees are planted *vertical 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 badly-formed roots and stems, e.g. J-shaped roots, basal sweep.

10.5 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)
LP pure	1.8 m x 1.8 m	3,100
All other conifer species	2.0 m x 2.0 m	2,500
Oak pure	2.0 m x 1.5 m	3,300
Oak & nurse mix	10 lines of oak and one line of nurse species Within lines: Oak 2.0 m x 1.5 m Nurse spp. 2.0 m x 1.5 m	3,300
Beech pure	2.0 m x 1.5 m	3,300
Beech & nurse mix	10 lines of beech and one line of nurse species Within lines: Beech 2.0 m x 1.5 m Nurse spp. 2.0 m x 1.5 m	3,300
Sycamore and other broadleaves (except ash for new afforestation sites)	2.0 m x 1.5 m	3,300
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 later on after planting) foliar samples - see Appendices 14 and 16 for procedures. Adhere to the *Forestry & Water Quality Guidelines*, in particular the section entitled 'Fertiliser Application and Storage' (Page 7).
- 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.

Table 11.1 Phosphate requirements.

Site Type	Rate of application of: <ul style="list-style-type: none"> ➤ 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
Unenclosed land	350 kg / ha Granulated Rock Phosphate (GRP) at the time of planting. (In limited circumstances where 350 kg GRP / ha may not be appropriate for environmental reasons, a split application not exceeding a total of 400 kg GRP / ha may be acceptable.)

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 western counties. Potassium is applied as muriate of potash (50% K) at 250 kg per ha.

11.2.3 Nitrogen

Sitka spruce is moderately nutrient demanding and on many sites within the Land Type 'Suitable Land (GPC 1)' (see Forest Service document *Land Types for Afforestation*), an application of nitrogen fertiliser is needed. Nitrogen deficient trees display reduced needle and leader growth and a yellow / green or light green foliage colour, depending upon the degree of deficiency. Nitrogen deficient sites often require 150 kg / ha of urea to correct deficiencies and to enable the trees to achieve canopy closure.

11.3 Fertiliser requirements within broadleaf plantations

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. There may be situations where phosphate and / or potassium are required, but it is very questionable whether broadleaves are suited to a site where nitrogen is deficient. 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.



Photos 11.1 & 11.2 Phosphorus and nitrogen deficiency in Sitka spruce on a peat site. (Red-and-white graduations on the survey pole are 20 cm in length.)



Photo 11.3 Phosphorus and nitrogen deficiency in Sitka spruce on peat.



Photo 11.4 Potassium deficiency in Norway Spruce on reclaimed fen-type peat, Midlands.



Photo 11.5 & 11.6 Potassium deficiency in Sitka spruce / Lodgepole pine on reclaimed fen-type peat, Midlands.

11.4 Sites 'in check'

Often on infertile sites, even those that are correctly fertilised at planting, trees begin to lose vigour. This may happen a number of years after planting. To remedy the situation, it is necessary to determine the nutrient status of the crop 'in check'. Foliar analysis will be required to establish their nutrient status and to determine the type and rate of fertiliser required.

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.

Podsols and some peats are very erodible, more so than brown earths which are, in turn, more erodable 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 *Forestry & Water Quality Guidelines* and the *Forest Harvesting & the Environment Guidelines*, 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.

Section 12

Fencing and Fire

12.1 Fencing

Plantations 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 plantations for management purposes can be provided using styles and / or secured temporary openings in fence lines. 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 crop. 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).

Stiles must be erected at access points to all plantations, and designed and maintained to allow safe access. Their positions must be indicated on the Biodiversity Map.

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 plantation. 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.

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. IS 436 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 120 metre / hectare allowance must be certified to this standard. Where part of the 120 m / ha allowance claim contains non-IS 436 material, the entire allowance will be assessed at the non-IS 436 grant rate and at a density of 100 m / ha for the entire plantation. All fencing claims will be capped at €40,000 per plantation. The total fencing allowance available will depend on the area of the plantation multiplied by 120 metres. All claims for grant aid will be based on the measured fence length of new fences erected. For example, in the case of a 15 ha plantation with only 1.0 ha fenced (100 m x 100 m square plot of oak), the eligible fencing metres for grant aid for that 1 hectare will be 400 metres and not 120 metres. The fencing allowance (with the exception of deer fencing) is capped at plantation level and allows fences to be placed only where they are needed. Deer fencing allowances are explained below. An IS 436 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 IS 436 standard, grant aid will be limited to 100 m / hectare and based on the Grant & Premium Categories.

Regarding the supply of fencing posts, only companies that are certified by the NSAI or equivalent, can supply IS 436 fencing stakes suitable for use in the Afforestation Scheme.

IS 436 certificates are produced in duplicate. The stake IS 436 registration holder retains the original copy and gives the second copy to the person / company purchasing the posts. Manufacturers 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

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	<u>Barbed wire</u> (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	<u>Round stake:</u> 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 <u>Strut:</u> Length: 1.8 m Diameter: 10 cm
Cattle / Sheep	<u>Ordinary sheep netting or rectangular mesh sheep netting</u> <u>One strand of barbed wire</u> 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)	<u>Split stakes:</u> Length: 1.5 m (+/- 30 mm) Diameter: 12.5 cm (+/- 25 mm) <u>Machined squared:</u> Length: 1.5 m (+/- 30 mm) Top dimension: 10 cm x 10 cm (+/- 3 mm) <u>Distance apart</u> Mild steel: 4 m High tensile: 5 m		
Cattle / Rabbit	<u>Rabbit netting</u> <u>Three strands of barbed wire</u> 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	<u>Rabbit netting</u> <u>Two strands of barbed wire</u> 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). <u>Rectangular wire mesh</u> , 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 Forest Service. (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

Fencing Scheme. All NSAI registered suppliers of timber certified to IS 436 will contact DAFM directly for certificate numbers.

Registered suppliers of IS 436 timber fencing are available on the NSAI website www.n sai.ie/Our-Services/Certification/Company-Registration-Search.aspx

12.1.3 Non-IS 436 fencing

The DAFM encourages the use of the IS 436 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 and at the same rates paid in 2014. A decision to continue funding non-IS 436 fencing will be kept under review.

12.1.4 Deer fencing allocation

The maximum allowance for deer fencing is calculated as follows:

- The fencing allowance for IS 436 deer fencing will be based on 120 metres / hectare and will be calculated based on the area *enclosed and protected* by the fence. For example, in the case of a 15 ha plantation with 1.0 ha of oak enclosed by a new IS 436 deer fence, the allowance will be capped at 120 m, i.e. 120 m / ha.
- 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-IS 436 deer fence, the allowance will be capped at 150 m, i.e. 150 m / ha.
- Only sheltered, fertile sites and where at least 70% of the area enclosed by the deer fence comprises broadleaves and species in the categories GPCs 4-11, will be considered eligible for the deer fencing allocation.

12.2 Fire

The potential fire risk to proposed plantations in high fire risk areas should be assessed and methods to reduce risks devised, described and implemented. This is a requirement for grant approval. The presence of any flammable vegetation, such as purple moor-grass, furze and heather, is a strong indication that a firebreak is required. Firebreaks need regular maintenance where a fire risk exists.

Firebreaks should constitute a fuel-free zone of 6 metres in width and should normally be placed along the external boundaries of plantations. However, in blocks of 60 ha 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. 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 fire risk, should be served by reservoirs 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.

The Forest Service does not provide funding for reconstitution following damage to forests by fire. Forest owners who fail to reconstitute a damaged plantation 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 plantation.

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

12.2.1 Fire and the obligations of forest owners

Beneficiaries of 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. 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 recoupage of all grant and premium monies received, unless remedial work is satisfactorily carried out.

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 Forest Service 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 Forest Service, 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 Forest Service 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, 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.

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 www.agriculture.gov.ie/forestservice/landandforestfires

12.2.2 Fire plan and preparedness

The Forest Service *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 plantation. 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 plantation 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).

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. *By controlling vegetation in a 1.0 metre diameter spot (or 1.0 metre wide band) around the base of the trees in the initial 4 years, successful establishment to Forest Service standards should be achieved.*

Vegetation management should be undertaken in accordance with the booklet *Guidelines for the Use of Herbicides in Forestry*, published by Coillte Teoranta (Ward, 1998) on behalf of the Forest Service.

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.

13.2 Formative shaping

Formative shaping of broadleaves is an ongoing integral part of plantation maintenance. For ash and sycamore, it is necessary to have this operation completed by the 2nd instalment.

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 plantations have been successfully established by a Forestry Company which is mandated the 2nd instalment grant and are deemed not ready yet for shaping, a Form 3 may be submitted by that company with a joint declaration with the owner that formative shaping to Forest Service 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.

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 plantation (see Table 13.1 for grade descriptions).

Conifers that suffering a late spring frost attack 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 effected, it may not be necessary to carry out this operation.

Shaping involves the encouragement of apical dominance on a plant by the removal of multiple leaders with a secateurs, pruning saw or loppers. The shaping technique involves the retention of the 'branch bark ridge', an external ridge which is readily visible at the trunk / branch junction of most trees. 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.

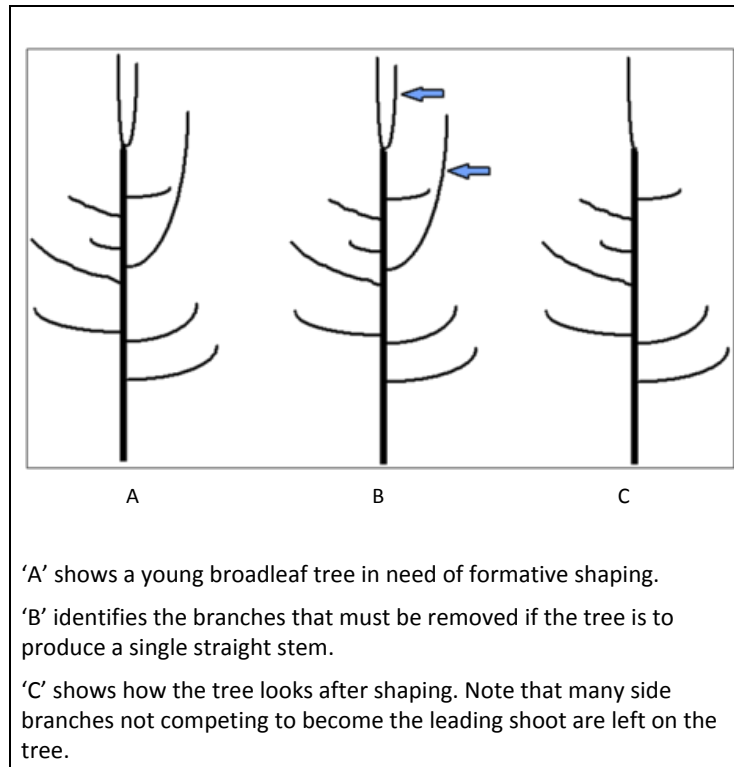
Table 13.1 Standard quality grades for broadleaf trees.

	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.



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

Section 14

Required Plantation 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*
- The relevant and current Scheme Document
- *Forestry & Water Quality Guidelines*
- *Forestry & the Landscape Guidelines*
- *Forestry & Archaeology Guidelines*
- *Forest Biodiversity Guidelines*
- *Forest Harvesting & the Environment Guidelines*
- *Forest Protection Guidelines*
- *Forestry & Kerry Slug Guidelines*
- *Forestry & Otter Guidelines*
- *Forestry & Freshwater Pearl Mussel Requirements: Site Assessment and Mitigation Measures*
- *Code of Best Forest Practice - Ireland*
- *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 site inspection 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 18.
- Biodiversity Map (as per mapping standards in Section 18).
- Fencing Map (as per mapping standards in Section 18).
- If applying under the Forest Road Scheme, a Forest Road Map (as per mapping standards in Section 18), 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.
- Grant & Premium Category(-ies) (e.g. GPC 1) correctly identified and mapped.
- Calcium carbonate test results submitted as per the Acid Sensitivity Protocol, if applicable (see Appendix 11).
- Drainage survey report attached, if applicable (see Section 9).
- Soil analysis report attached, if applicable (see Section 11).
- Environmental Impact Statement attached, if applicable (see Section 19).
- 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.
- Certified Species Map and species plot table completed in accordance with mapping standards set out in Section 18.
- Biodiversity Map (as per mapping standards in Section 18).
- Fencing Map and claimed length(s) (as per mapping standards in Section 18).
- 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 18).
- 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 plantation.
- Mapped boundaries and species plot table completed in accordance with mapping standards set out in Section 18.
- All areas ineligible for aid (e.g. areas of shell marl, buildings) excluded from the claimed area.
- All plots and plantation boundaries have been verified on-the-ground and mapped accurately.
- GPC(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 18.
- Fire Plan Map for plantations 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 18.
- All areas ineligible for aid (e.g. areas of shell marl, buildings) excluded from the claimed area.
- All plots and plantation boundaries have been verified on-the-ground and mapped accurately.
- GPC(s) correctly identified and mapped.



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.

- 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 plantation is established satisfactorily. Where part of the plantation 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 plantation is up to the required standard.

14.5 Fertility

Plantations 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 fertiliser type and rate to be applied. The site should then be fertilised accordingly and only submitted for 2nd instalment payment, following a successful response to the fertiliser application.

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.

14.7 Forest protection

Forest plantations should be adequately fenced to ensure that trespass does not occur from livestock. For information on various aspects of forest protection, see the Forest Service *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.***

Section 15

Native Woodland Establishment (GPCs 9 & 10)

15.1 Overview

The aim of Native Woodland Establishment, as represented by GPC 9 and GPC 10 of the overall Afforestation Grant & Premium Scheme, is to support the creation of new native woodland on open 'greenfield' sites by farmers and other landowners, in order to promote the expansion of Ireland's native woodland resource and associated biodiversity. Each new woodland must reflect the appropriate native woodland type (or types) identified during the application process as being the most ecologically appropriate for the site.

Native Woodland Establishment GPC 9 and GPC 10 has an overriding ecological focus, demonstrated by, for example, its emphasis on minimal site disturbance, species selection based on the most appropriate native woodland type, the use of native planting stock, and long-term 'close-to-nature' management. With this focus, this measure creates opportunities for landowners within environmentally-sensitive areas to create woodlands which have the potential for wood production and income generation, and which also contribute towards addressing the various environmental sensitivities involved (e.g. NATURA sites, acid sensitive areas, high status waterbodies, fisheries sensitive areas and Freshwater Pearl Mussel catchments). This is achieved through cooperation between the owners, foresters, the Forest Service and other statutory bodies and scheme partners, and the application of the Forest Service Appropriate Assessment Procedure and other safeguards.

Applicants may wish to establish native woodland over the entire site. In such cases, the application will comprise GPC 9 and / or GPC 10 only. Alternatively, applicants can apply to establish a native woodland plot(s) as part of a larger plantation that also comprises other GPCs, e.g. GPC 3. This allows for the integration of native woodland into standard forest design, specifically for the purpose of realising associated ecosystem services, e.g. water protection, habitat connectivity, landscape enhancement.

(Native Woodland Establishment GPC 9 and GPC 10 run alongside the Native Woodland Conservation Scheme, which is aimed at restoring *existing* native woodlands (including the conversion from non-native conifer forest to native woodland). Both measures form an overall support package for native woodland, implemented by the Forest Service under the 2014-2020 Forestry Programme in partnership with Woodlands of Ireland, National Parks & Wildlife Service, the Heritage Council, Inland Fisheries Ireland and other native woodland stakeholders.)

For full details on GPC 9 and GPC 10, see the separate Forest Service document *Native Woodland Establishment GPC9 & GPC10: Silvicultural Standards (September 2015)*.

Section 16

Agro-Forestry (GPC 11)

16.1 General

The Agro-Forestry measure – captured under Grant & Premium Category (GPC) 11 – is aimed at encouraging the application of silvo-pastoral agro-forestry systems that combine forestry and pasture. Plots created under GPC 11 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 1946 Forestry Act (and subsequently, the 2014 Forestry Act, once commenced). Agro-forestry plots will contribute to increasing the national forest cover.

16.2 Specific requirements under GPC 11

16.2.1 Stocking levels

A stocking rate of 400 - 1,000 trees per hectare (equal spacing) is required.

16.2.2 Minimum area and width

The minimum plot area and width eligible under GPC 11 is 0.5 ha and 20 metres tree-to-tree, respectively. See Sections 5.4 and 5.5.

16.2.3 Species

Acceptable broadleaf species include oak, sycamore and cherry. Other species, including conifers, will be considered on a site-by-site basis. Large plants (90 - 120 cm) should be used.

16.2.4 Site type

Ideally, sites should contain free-draining mineral soils and should have no requirement for additional drainage. In general, sites suitable for agro-forestry 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. Land type ‘Suitable Land (GPC 1)’, as described in the Forest Service document *Land Types for Afforestation*, are not eligible for under GPC 11 Agro-Forestry.

16.2.5 Planting

Planting should be carried out using pit planting, where possible.

16.2.6 Vegetation control

Prior to planting, vegetation control using a suitable herbicide will be required to prevent grass growing within the tree shelters and around each tree, until the trees have become established and are free-growing. In general, there should be no vegetation control after successful establishment, as this will be carried out by grazing animals.

Alternative agro-forestry systems may be approved on application, to take account of criteria associated with organic farming.

16.2.7 Fencing

Agro-forestry plots must be fenced with appropriate stock-proof fencing. Where an agro-forestry 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. Tree shelters will be replaced with plastic mesh immediately thereafter, depending on tree growth.

16.2.8 Allowable agricultural activities

The following agricultural activities will be permitted within a GPC 11 plot, as long as such activity is compatible with protecting the trees:

- **Pasture:** Grazing by sheep or young domestic stock is permitted during the spring and summer months for the first 6 - 8 years, depending on tree growth, but 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.

Agro-forestry must remain under forestry and is therefore is subject to a replanting obligation.

16.2.9 Grant and premiums rates

Under State Aid rules, only 80% of eligible costs can be funded. Grant rates and payment structures under Agro-Forestry GPC 11 are similar to other GPCs under the Afforestation Scheme, and are paid on a fixed grant basis. Premiums will be paid for 5 years and will cover the cost of maintenance only. Support for the establishment of demonstration plots for research purposes may also be considered under GPC 11.



Photo 16.1 Sheep grazing grass in a recently-established agro-forestry pilot trial, Co Cork.



Photo 16.2 Agro-forestry comprising mature ash with a crop of grass growing underneath for sheep grazing, Loughgall, Northern Ireland.

Section 17

Forest-for-Fibre (GPCs 12a & 12b)

17.1 General

The objective of the Forest-for-Fibre measure – captured under Grant & Premium Category (GPC) 12a and 12b – is to meet a forecasted supply-demand gap for fibre for energy and other wood product applications, by growing multiple crop rotations on a 10 to 15 year cycle. Once land is converted to forestry-for-fibre, it will be classified as forest land and the provisions of forest legislation will apply.

This measure provides for the planting of eucalyptus (under GPC 12a), poplar (under GPC 12a) and aspen (under GPC 12b), based on the following requirements.

17.2 Eucalyptus – GPC 12a

17.2.1 Stocking

Stocking shall be a minimum of 2,500 plants / ha at establishment, with the aim of achieving 2,000 plants / ha by Year 5. Stocking must not be allowed to drop post-planting to below 2,000 plants / ha at any time during the first 5 years of the premium payment period.

17.2.2 Minimum area and width

The minimum plot area is 0.1 ha, and the minimum width, measured tree-to-tree, is 20 metres.

17.2.3 Eligible species

Table 17.1 lists the species of eucalyptus eligible under Forestry-for-Fibre GPC 12a.

17.2.4 Site type

Sites must be below 200 metres in elevation. Sites must be enclosed and improved land, with free-draining arable or pasture soils, or surface water gleys without a peat layer.

The potential impact on neighbouring land should be considered before the planting of Eucalyptus species, in relation to the potential for natural regeneration.

17.2.5 Planting

Planting can be carried out using pit planting. However, planting into mounds or ground that has been ripped is also acceptable. On some agricultural soils, it will be desirable to undertake ripping, to remove any pan that may have developed over the years.

Table 17.1 Eucalyptus species of eligible under Forestry-for-Fibre GPC 12a.

Species	Remarks
<i>Eucalyptus glaucescens</i>	More frost hardy than <i>E. nitens</i> .
<i>Eucalyptus gunnii</i>	More frost hardy than <i>E. nitens</i> . Susceptible to deer browsing.
<i>Eucalyptus nitens</i>	Low temperatures can kill trees outright as occurred in the winters of 2009/10 and 2010/11. For this reason, <i>E. nitens</i> is restricted to within 50 km of the coast to protect from low temperatures. Frost-prone, low-lying areas are also to be avoided.
<i>Eucalyptus rodwayi</i>	Has potential, although largely untested in Ireland.
<i>Eucalyptus subcrenulata</i>	Has potential, although largely untested in Ireland. More frost hardy than <i>E. nitens</i> .
<i>Eucalyptus ringier</i>	Has potential, although not planted.

17.2.6 Vegetation management

Due to the susceptibility of most eucalyptus species to herbicide damage, spraying for vegetation control should be undertaken before planting. In order to support and maintain vigorous growth, good vegetation control will be needed in the first 2-3 years after establishment. Manual weed control may be considered, where appropriate. Normally, fertiliser application will not be required.

17.2.7 Fencing

Plots must be fenced with appropriate stock-proof fencing.

Eucalyptus gunnii is very susceptible to browsing and sites within areas with high deer populations will require deer fencing. The decision to support additional funds for deer fencing will be assessed on a value-for-money basis and subject to the availability of funding, existing Afforestation Scheme fencing thresholds, and fencing standards set out in Section 12.

17.2.8 Rotation length

Eucalyptus established under GPC 12a should be ready for harvesting after 10-15 years.

Support for short rotation coppicing, Christmas trees or fast growing trees is not eligible for grant aid in the Afforestation Scheme. Fast growing trees are defined for the purposes of this scheme as having 9 years between harvests.



Photo 17.1 Sixteen year old *Eucalyptus nitens* growing alongside 17 year old Sitka spruce near Cappoquin, Co. Waterford. (Photo: Kevin Hutchinson Photography)



Photo 17.2 Poplar in its 3rd growing season after mechanical vegetation control, Co. Meath. (Photo: John Keely, Energy Crop Consultant)



Photo 17.3 Mature poplar, Kinsealy. (Photo: John Keely, Energy Crop Consultant)

17.3 Poplar – GPC 12a

17.3.1 Stocking

Stocking shall be a minimum of 1,600 plants / ha at establishment. Stocking must be maintained at a minimum of 80% over the first 5 years of the period of premium payment.

17.3.2 Minimum area and width

Minimum area of 0.1 ha, to allow for economies of scale. However, applicants should consider larger areas to provide sufficient material to benefit from economies-of-scale.

17.3.3 Eligible clones

The following poplar clones are eligible for grant aid under this measure: Clones 18 71058/2; Fritzi Pauley; Trichobel; V.471xV.24(65)/34; 72030/7; 76004/10; Raspalje 19; and Unal.

Preference will be given to applicants who propose to use improved genetic material. Other clones may be supported where demonstration plots are established for research purposes (e.g. AF2, AF4, AF7, AF8, AF16, AF18, AF27, Max 1, Max 3, Max 4, Matrix 24, Matrix 49, Grimage).

17.3.4 Site type

Sites must be below 200 metres in elevation and not exposed. Sites must be enclosed and improved land, with free-draining arable or pasture soils, and not surface water gleys or peat soils. Soils need a pH of between 5 - 7.

17.3.5 Planting

Planting is carried out after ploughing and tilling, using a specialised machine or by hand for cuttings or poles. Whips should be planted using pit-planting, where possible.

17.3.6 Vegetation management

Very good vegetation control will be needed in the first 2-3 years after establishment, to support and maintain vigorous growth. Normally, fertiliser application will not be required. However, soils need to be corrected nutritionally before planting. However, some soils may need fertiliser before planting, based on soil analysis.

17.3.7 Fencing

Plots must be fenced with appropriate stock-proof fencing, as per Section 12. When using cuttings, rabbit fencing may be required.

17.3.8 Rotation length

Poplar established under GPC 12a should be ready for harvesting after 10-15 years.

17.4 Aspen – GPC 12b

Where aspen is planted, the same silvicultural standards apply as for eucalyptus (GPC 12a), with the following exception: the stocking shall be at a rate of 1,400 plants / ha.

The follow species must be used: Hybrid aspen (*Populus tremula x tremuloides*).

17.5 Other species

Italian alder (*Alnus glutinosa*) and other species may be considered under the Forestry-for-Fibre measure, on application, as may other silvicultural spacings.

Section 18

Mapping Standards

18.1 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, 2015-2020.

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.

18.1.1 Claims / Payments for the Afforestation Scheme and support schemes (2015-2020)

Payments for the Department's Afforestation Scheme and other support schemes (2015-2020) 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 to be eligible for payment, whichever is the lesser. The onus is therefore on the applicant and the applicant's Registered Forester to satisfy him- / herself that the area claim that s/he is submitting represents 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 plantation) is the sum of the areas of the individual forest plots (including biodiversity area(s)) comprising that Contract Number or plantation. 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 plantation is the sum of the areas, determined by the Department to be eligible for payment, of the individual forest plots comprising that Contract Number or plantation. The determined area is calculated by excluding any ineligible areas (e.g. power line corridors, rock, gas pipelines, ineligible areas of biodiversity 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.

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* (January, 2015).

18.1.2 Direct Payments (2015-2020), Cross Compliance and Land Use Reconciliation

Following on from changes to the EU Regulations arising from the adoption of the CAP Health Check proposals, land that was afforested since 2009 is eligible for payments under the Single Payment Scheme (SPS). Similar provisions covering the eligibility of afforested land are contained in Regulation (EU) 1307 / 2013 governing the requirements of the Basic Payment Scheme, which will replace the Single Payment Scheme from 2015 onwards. Lands eligible for the Basic Payment Scheme must satisfy the following criteria:

- the land to be afforested was declared on a 2008 SPS application form;
- the applicant who declared that land on a 2008 SPS application form was paid under the 2008 Single Payment Scheme;
- the afforested land was eligible for payment in 2008; and
- the afforested land meets all the requirements of the Afforestation Grant & Premium Scheme.

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 Grant & Premium Scheme must ensure that afforested land entered into the scheme is not included, or is the subject of a claim, under any other 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 other support schemes exceeds the area approved, and / or overlaps with an area that is the subject of a claim under another area-based scheme administered by the Department (also see www.agriculture.gov.ie/farmerschemespayments/).

18.2 Maps required for pre-approval and grant payment

The following section describes the maps and associated mapping standards required by the Department to assess applications for pre-approval and for grant payment.

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

The following maps are required:

- Certified Species Map
- Fencing Map
- Biodiversity Map (or 'BIO Map')

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 Ordnance Survey map at a scale of 1:5,000 (based on the OSi 1:5,000 National Raster product) may be submitted. A Fencing Map is also required to record the length and location of any proposed fencing under the application.

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

The following maps are required:

- Certified Species Map
- Fencing Map
- BIO Map

The Certified Species Map must record accurately all areas 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.

18.2.3 Certified Species Map format

Form 1 paper-based submission

The Department strongly encourages the use of iNET for the submission of pre-approval applications. In situations where a Registered Forester does not use or does not have access to iNET, a hardcopy Certified Species Map must be submitted where an applicant seeks approval for, or payment of, a grant. In this case, Registered Foresters must submit an original or composite Ordnance Survey paper map at a scale of 1:5,000 (based on OSi 1:5,000 National Raster product) - see Map 18.1 for an example. All paper map submissions must be in A4 format. Two or more A4 maps should be submitted where the size of the application is such that it spans more than the area covered by a single A4 Ordnance Survey map. All paper A4 maps submitted should include a sequence number where applicable (e.g. '1 of 3', '2 of 3', '3 of 3').

Form 1 online submission

iNET has been developed by the Forest Service to aid in the calculation of area and preparation of digital and hardcopy maps by Registered Foresters. The system has been developed for Registered Foresters who have access to broadband (i.e. 512 kb or greater internet connection speed. Lower connection speeds will vary in performance). iNET can be used to map and submit new pre-approval (Form 1) applications online for the Afforestation Scheme and the Forest Road Scheme - see Map 18.2 for example. In addition, iNET can be used to track online the progress of any pre-approval forestry application submitted by a registered user. iNET provides access for Registered Foresters to OSi map data including colour orthophotography for the entire country. Areas designated for environmental reasons and other relevant spatial or mapping datasets are also available within iNET, to facilitate the development of forestry pre-approval applications.



Registered Foresters can register to use iNET by logging onto the Department's website (www.agriculture.ie). Selecting the 'Click here for the Department's Online Services' button (see left) will lead users through a number of simple steps to register to use the application.

Registered Foresters must have received training by the Department or other approved training prior to using the iNET online application system. An iNET user manual outlining the steps for submitting Afforestation and Forest Road applications is available from the Department's website.

Foresters who submit pre-approval applications using iNET must also attach a BIO Map and a Fencing Map to their grant application posted to the Forest Service. These maps should be printed from iNET and annotated as per the instructions detailed elsewhere in Section 18.

Form 2 and Form 3 paper-based submission (using iNET hardcopy outputs)

In future, iNET will be developed to allow the electronic submission of Form 2 and Form 3 maps as well as the submissions of applications in relation to the other forestry support schemes administered by DAFM. In the interim, Form 2 and Form 3 maps may be digitised using the Department's iNET system (plot boundaries red-lined, plot areas calculated, plot tables generated, etc.). Form 2 and 3 hardcopy map outputs prepared using iNET must accord with the standards outlined below. The printed hardcopy maps should be sent to the Department along with all other relevant forms and documents required for the scheme in question (e.g. signed Form 2 or Form 3, folios, provenance declaration forms, etc.). The most up-to-date orthophotography must be used (as of 1st January 2015, Bing Maps imagery) when printing maps from iNET in support of Form 2 (and BIO Maps) and Form 3 grant and premium claims.

18.2.4 Use of standardised symbols, colours and text

The mapping symbols and symbol colours illustrated in the example maps presented throughout Section 18 must be used for all hardcopy maps submitted to the Department. All text, symbols and map annotations used on hardcopy maps must be legible and easy to differentiate.

Any relevant information that will facilitate the evaluation of the proposal 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 symbol. This will aid the Forestry Inspector to gain access to the site, should a field inspection be required. Applicants and Registered Foresters should also be aware that maps submitted in support of grant applications may be forwarded to relevant referral bodies (e.g. NPWS, An Taisce, Inland Fisheries Ireland) and / or may be made available to the public or other interested parties through the normal public consultation process or *via* Freedom of Information requests.

Template legends for the Certified Species Map, the Fencing Map and the BIO Map are available from the Department's website (www.agriculture.gov.ie/forests-service/). These template legends provide the format for the map legends and associated tables, and must be used when submitting maps to the Department. Failure to observe Forest Service mapping conventions which require the use of standardised, legible mapping symbols, colours and text will result in a request for a new revised map(s), and may delay the assessment and evaluation of the application.

18.2.5 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 lines are summarised below:

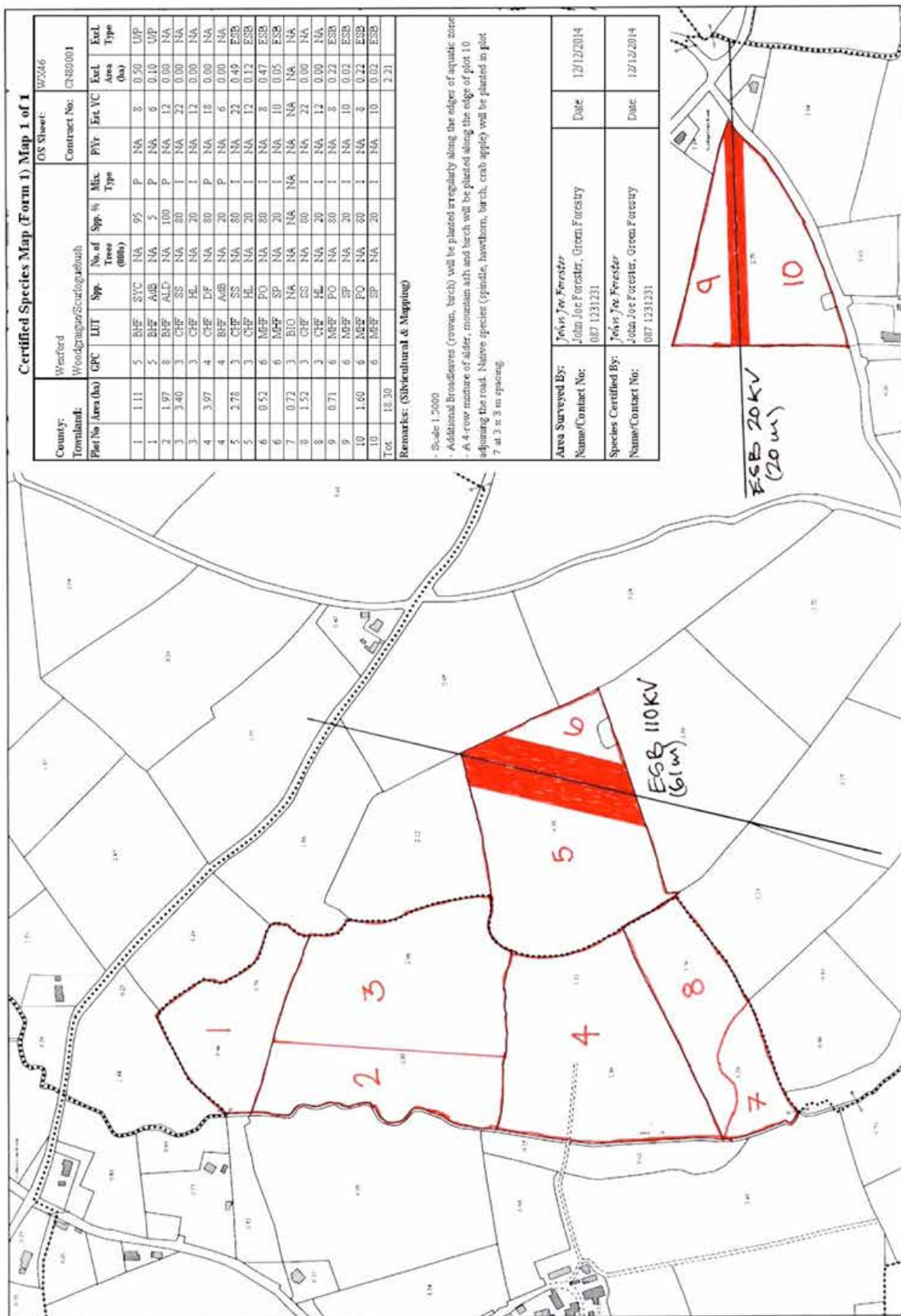
- If the boundary of a plot is a visible feature on the orthophoto map or OSi map (e.g. field boundary), the red line is drawn to the centre of this feature.
- If the feature also happens to be an exclusion, then the red line must be drawn to the edge of this feature (e.g. existing woodland, lake or 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 resulting plots allocated different plot numbers (i.e. each plot must have a unique plot number).

All visible features on the colour photographs should be utilised when surveying external / internal plantation and plot boundaries. The exact position of all undefined internal plot boundaries must be measured on-the-ground and adjusted for slope. This applies to Form 1, Form 2 and Form 3 maps.

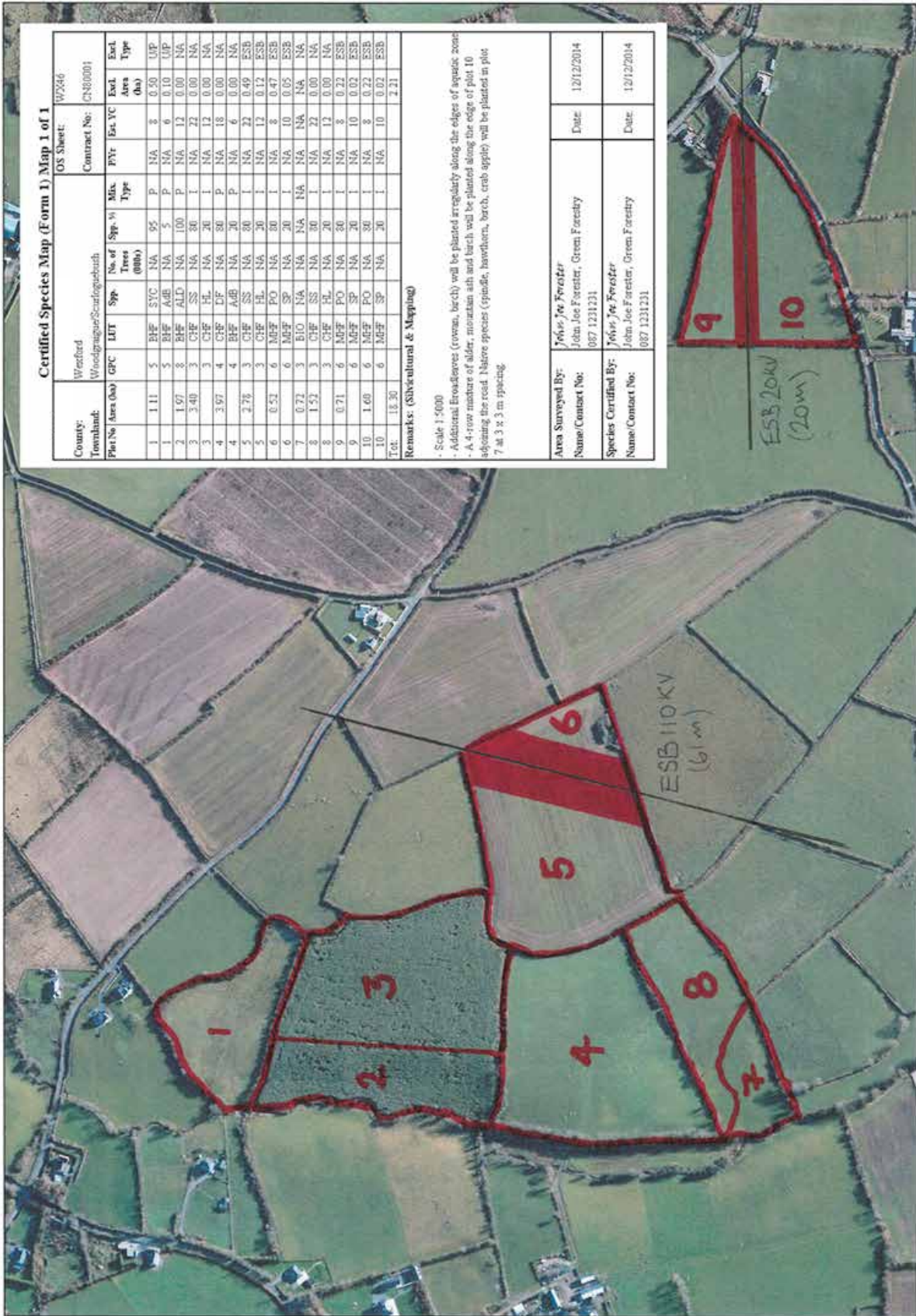
Mapping undefined boundaries

In general, an undefined boundary will not be a visible or annotated feature on either an orthophoto map or a 1:5,000 scale OSi 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 DGNS (Differential Global Navigation Satellite System) receiver. GNSS survey points should be recorded at the beginning and end of the undefined boundary and at any position along the boundary where there is a change in the external 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



Map 18.1.1 Example of an Afforestation Scheme Form 1 Certified Species Map, using a 1:5,000 OSi original or composite map. See Map 18.2 for example illustrating the use of hardcopy output from iNET.



Certified Species Map (Form 1) Map 1 of 1

OS Sheet: W2500
 County: Wexford
 Townland: Woodgrange/Carlogeagh
 Contract No: CN800001

Plot No	Area (ha)	GPC	LUT	Sp.	No. of Trees (000s)	Sp. %	Mix. Type	PYr	Est. VC	Est. Area (ha)	Excl. Type
1	1.11	5	BHF	SVC	NA	95	P	NA	8	0.50	UP
1	1.11	5	BHF	AdB	NA	5	P	NA	6	0.10	UP
2	1.97	8	BHF	ALD	NA	100	P	NA	12	0.00	NA
3	3.40	3	CHF	SS	NA	30	I	NA	22	0.00	NA
3	3.40	3	CHF	HL	NA	20	I	NA	12	0.00	NA
4	3.97	4	CHF	DF	NA	80	P	NA	18	0.00	NA
4	3.97	4	BHF	AdB	NA	20	P	NA	6	0.00	NA
5	2.78	3	CHF	SS	NA	30	I	NA	22	0.49	ESB
5	2.78	3	CHF	HL	NA	20	I	NA	12	0.12	ESB
6	0.51	6	NDF	PO	NA	30	I	NA	8	0.47	ESB
6	0.51	6	NDF	SP	NA	20	I	NA	10	0.05	ESB
7	0.72	3	BLO	NA	NA	NA	NA	NA	NA	NA	NA
8	1.52	3	CHF	SS	NA	30	I	NA	22	0.00	NA
8	1.52	3	CHF	HL	NA	20	I	NA	12	0.00	NA
9	0.71	6	NDF	PO	NA	30	I	NA	8	0.22	ESB
9	0.71	6	NDF	SP	NA	20	I	NA	10	0.02	ESB
10	1.60	6	NDF	PO	NA	30	I	NA	8	0.22	ESB
10	1.60	6	NDF	SP	NA	20	I	NA	10	0.02	ESB
Total	18.30									2.21	

Remarks: (Silvicultural & Mapping)

- Scale 1:5000
- Additional Erosionlines (green, brch) will be planted irregularly along the edges of aquatic zones
- A 4-row mixture of alder, mountain ash and larch will be planted along the edge of plot 10 adjoining the road. Native species (spindle, hawthorn, brch, crab apple) will be planted in plot 7 at 3 x 3 m spacing.

Area Surveyed By: **John Joe Forester**
 Name/Contract No: John Joe Forester, Green Forestry 067 1231231 Date: 12/12/2014

Species Certified By: **John Joe Forester**
 Name/Contract No: John Joe Forester, Green Forestry 067 1231231 Date: 12/12/2014

Map 18.2 Example of an Afforestation Scheme Form 1 Certified Species Map, based on hardcopy output from iNET.

Northing Irish Grid (IG) coordinates either noted on the map legend or submitted together with the Certified Species Map as a map attachment (for an example, see Map 18.3). The use of a GNSS receiver for locating and plotting ESB line exclusion corridors 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 to submit coordinate data to the Forest Service for pre-approval applications.

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 and if there is any uncertainty surrounding the location of a internal or external undefined boundary, a revised map based on a GNSS survey of boundaries may be requested.

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

For all Form 2 and Form 3 applications with undefined external boundaries, the undefined external boundaries must be walked and mapped using a GNSS / DGNSS receiver (i.e. along the edge of the plantation 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 way points collected in the field. The Easting and Northing National Grid (IG) coordinates of undefined boundary vertices can be plotted on the iNET map screen to facilitate digitising and to visualise and print off hardcopy maps of survey points captured during a GNSS / DGNSS survey.

18.3 Compiling the Certified Species Map plot table

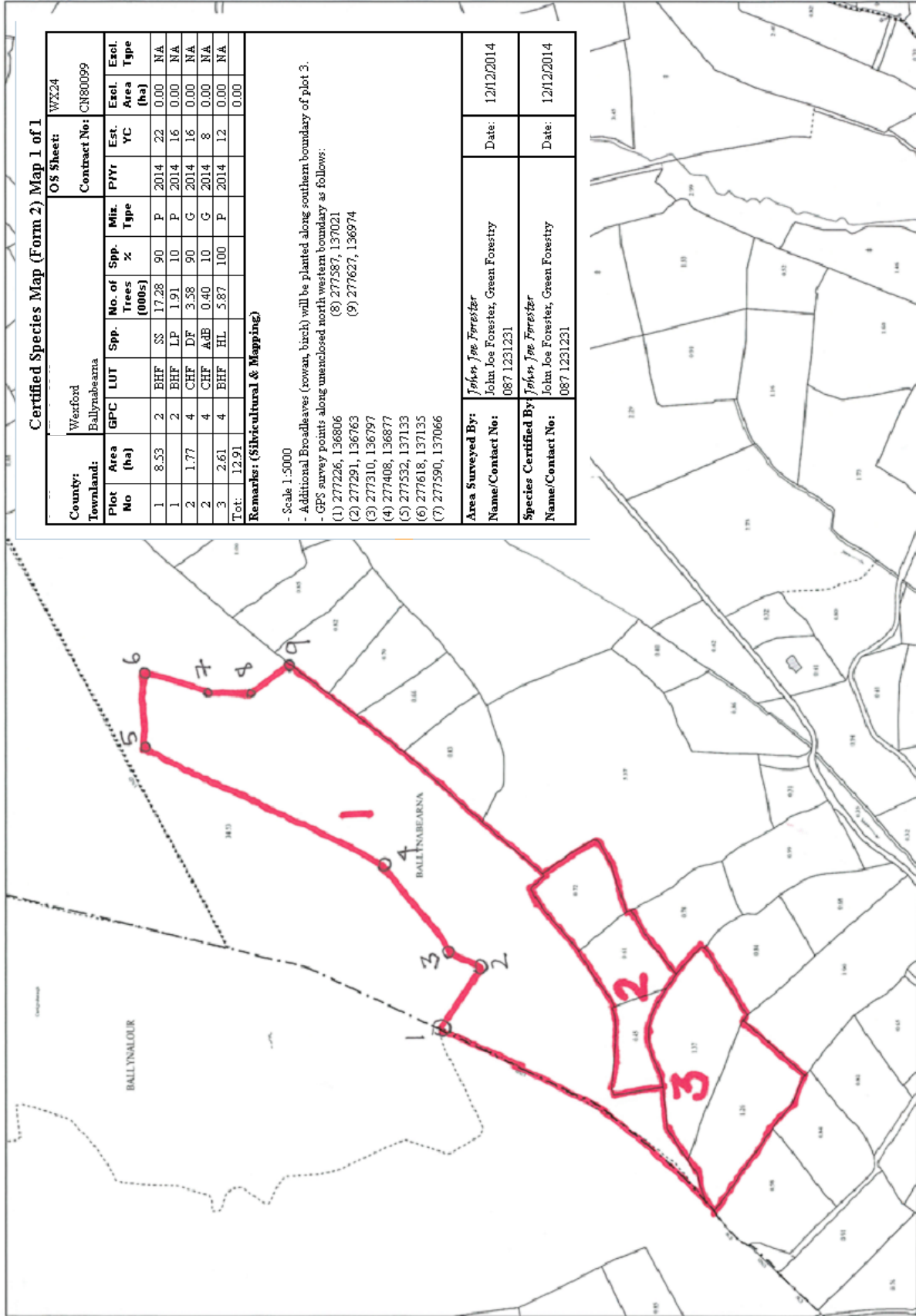
In addition to mapping plantation and plot boundaries on the Certified Species Map, a plot table must be compiled and attached to the hardcopy map submitted in support of pre-approval (Form 1) and payment claim (Form 2, Form 3). The plot table summarises the area and species information for each of the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

A template table is available at www.agriculture.gov.ie/forests-service/ - this template should be used when preparing the Certified Species Map.

An example of a completed plot table is presented in Table 18.1 (also see Maps 18.1 and 18.2 for examples of a completed Certified Species Map). A worked example explaining how to deal with different types of ineligible exclusion areas is also provided below.

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 must be assigned a sequential plot number. One plot can only be assigned one Grant & Premium Category (GPC).
- **Claimed area ('Area (ha)')**: This refers to the area for which an applicant has applied for pre-approval or payment (see also Section 18.1.1). All numeric area values in the



Map 18.3 Example of an Afforestation Scheme Form 2 Certified Species Map, using a 1:5,000 OSI original or composite map. (The use of hardcopy output from iNET is also acceptable.) Example illustrates the recording of an undefined boundary, using GPS survey points.

Table 18.1 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 with Form 2 and Form 3 applications 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)	GPC	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
1	1.11	5	BHF	SYC	NA	95	P	NA	8	0.50	U/P
1		5	BHF	AdB	NA	5	P	NA	6	0.10	U/P
2	1.97	8	BHF	ALD	NA	100	P	NA	12	0.00	NA
3	3.40	3	CHF	SS	NA	80	I	NA	22	0.00	NA
3		3	CHF	HL	NA	20	I	NA	12	0.00	NA
4	3.97	4	CHF	DF	NA	80	P	NA	18	0.00	NA
4		4	BHF	AdB	NA	20	P	NA	6	0.00	NA
5	2.78	3	CHF	SS	NA	80	I	NA	22	0.49	ESB
5		3	CHF	HL	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	3	BIO	NA	NA	NA	NA	NA	NA	NA	NA
8	1.52	3	CHF	SS	NA	80	I	NA	22	0.00	NA
8		3	CHF	HL	NA	20	I	NA	12	0.00	NA
9	0.71	6	MHF	PO	NA	80	I	NA	8	0.22	ESB
9		6	MHF	SP	NA	20	I	NA	10	0.02	ESB
10	1.60	6	MHF	PO	NA	80	I	NA	8	0.22	ESB
10		6	MHF	SP	NA	20	I	NA	10	0.02	ESB
Tot:	18.30									2.21	

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 unsuitable 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).

- **Grant & Premium Category ('GPC'):** The GPC is the category 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 GPC definitions, see Table 4.1. The Certified Species Map for all GPCs must reflect at plot level the area claimed for grant payment.

In relation to Native Woodland Establishment GPC 9 and 10, the relevant scenario (as per the Native Woodland Establishment Framework) should be noted alongside each plot, to indicate the native woodland type being proposed. For example, 'Scenario 1' equates to Oak-Birch-Holly Woodland, while 'Scenario 4' equates to Alder-Oak-Ash Woodland. The Native Woodland Establishment Framework is set out in the document *Native Woodland Establishment GPC9 & GPC10 Silvicultural Standards* (September 2015).

- **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 18.2.
- **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

Table 18.2 Land Use Types.

Land Use Type (LUT)	Definition	GPC definition
CHF	Conifer High Forest	GPCs 1, 2, 3 & 4
MHF	Mixed High Forest	All broadleaf / conifer nurse mixtures in GPCs 6, 7, 9 & 10
BHF	Broadleaf High Forest	Broadleaf GPCs 5, 6, 7, 9, 10, 12a & 12b, 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

Broadleaves' (ADB) per plot. A list of approved conifer and broadleaf species, their botanic names and associated abbreviations are listed in Tables 8.3 and 8.4.

- **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).
- **Mixture type ('Mix. Type')**: Table 18.4 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 2014 will have a planting year of 2014. A tree planted in November 2014 will have a planting year of 2015 and not 2014. Note that, for administrative purposes, the annual planting programme returns will continue to be based on the total area submitted for grant payment in any given year.
- **Estimated Yield Class ('Est. YC')**: Registered Foresters should estimate the Yield Class ($\text{m}^3 / \text{ha} / \text{year}$) for each species. Values for estimated Yield Class should be realistic and should be based on an assessment of the site 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

Table 18.3 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
Beech / conifer nurse species (spacing pre-2009)	67% beech and 33% conifer nurse species – enter equivalent area in hectares (ha)	2 rows of beech and 1 row of conifer nurse
Oak / conifer nurse species (spacing pre-2009)	50% oak and 50% conifer nurse species – enter equivalent area in hectares (ha)	1 row of oak and 1 row of conifer nurse

Table 18.4 Mixture types.

Mixture type	Definition	Examples
Row (R)	Where nurse species planted in rows / lines	PO & BI, PO & ALD, PO & SP, PO & EL, BE & EL, BE & SP
Intimate (I)	Where nurse or second species not planted in rows but planted evenly throughout the plot	10% Diverse SS & HL (However sometimes this mixture will have HL 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 HL is planted in groups in 10% Diverse
Pure (P)	All plots where there is only one main species	

(e.g. unplanted areas, old buildings, hard surface areas, rock, etc.). Table 18.5 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 further below illustrates how the areas for two different exclusions types (ESB and unplanted areas) are recorded. The reader is referred to Section 6 for details regarding the eligibility (or otherwise) of certain types of exclusions for grant and premium payments, 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 18.1 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 affected by the power line, and the applicant can then apply to the ESB directly for compensation (see Section 7). Corridor widths for overhead power lines are set out in

Table 18.5 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 area with conventional stocking densities
N-Forest	Non-plantation forest / woodland
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

Table 7.1.

The reader is referred to the Section 6 for further information regarding required setbacks / corridor widths for various features such as public roads, dwelling houses, gas pipelines, wind turbines, 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 should be excluded from the plot area.

18.4 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 (Form 1 example). The worked examples for Plots 1 and 2 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 scattered across

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)	GPC	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
1	1.11	5	BHF	SYC	NA	95	P	NA	8	0.50	U/P
1		5	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)	GPC	LUT	Spp.	No. of Trees (000s)	Spp. %	Mix. Type	P/Yr	Est. YC	Excl. Area (ha)	Excl. Type
5	2.78	3	CHF	SS	NA	80	I	NA	22	0.49	ESB
5		3	CHF	HL	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 completed example of a plot table, including the above exclusion examples, is provided in Table 18.1.

18.5 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 18.1). 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. Such changes must be reflected in a revised Certified Species Map submitted to the Department. The area removed from the 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

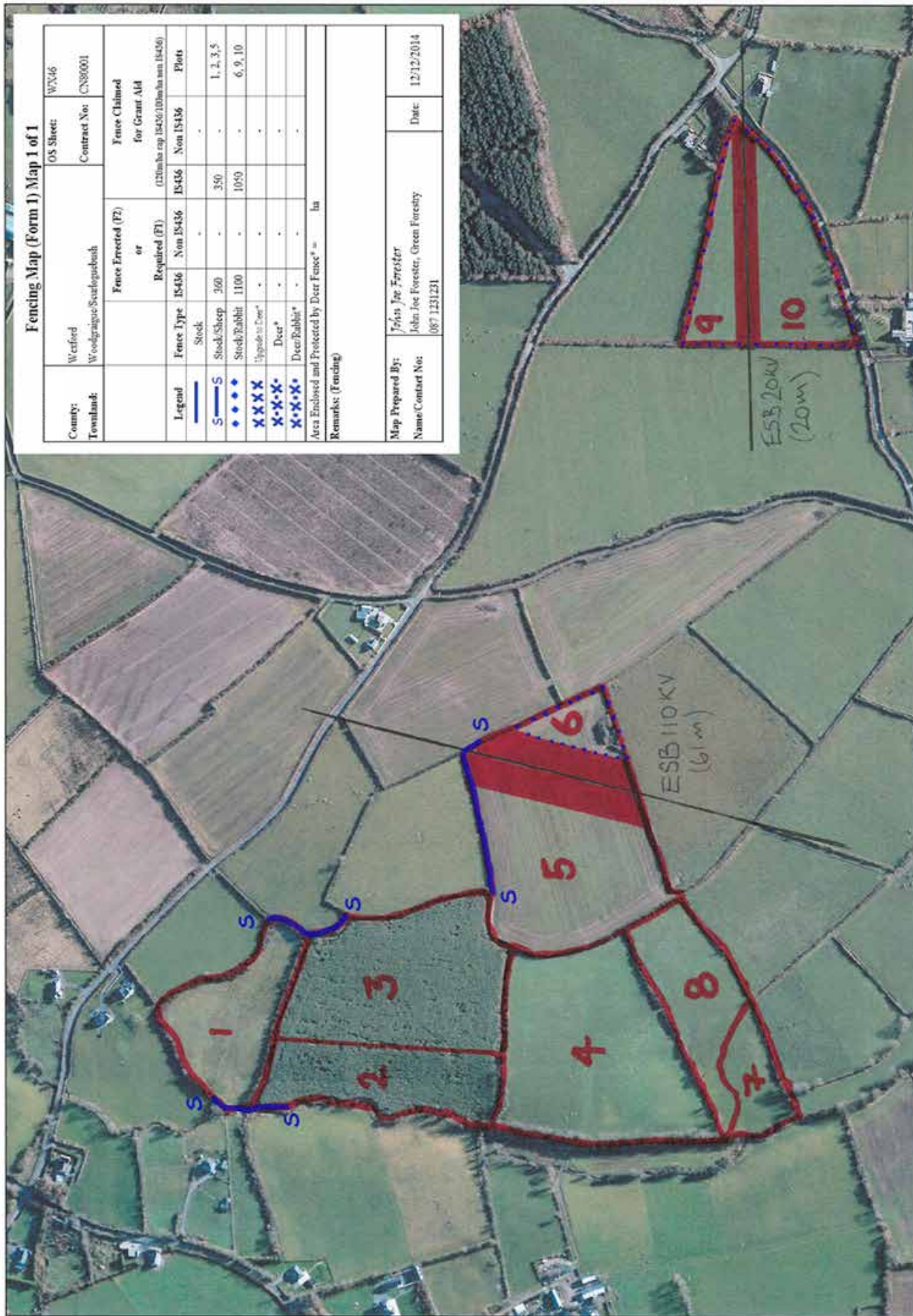
alert the Department to changes to the plantation area may result in sanctions being taken by the Department against the applicant, including the recouping of grant and premium payments associated with the plantation. Forest owners must inform the Department in advance before any area of a grant-aided plantation is removed.

18.6 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. In order to produce the Fencing Map, the Certified Species Map should be photocopied. Annotations and symbols for proposed and erected fencing should be added to the Certified Species Map using a blue marker / pen. 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 material 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 printed from the Department's iNET system at a scale of 1:5,000 is presented in Map 18.4. Additional fence colours may be used in situations where there are more than two fencing types required for a given application. A template for the Fencing Map legend is available from the Department's website (www.agriculture.gov.ie/forests-service/). This template should be used with any Fencing Map submitted in support of a Form 1 or Form 2 application.

Note that 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 broadleaves and species in the categories GPC 4-11, are eligible.



Map 18.4 Example of an Afforestation Scheme Form 1 Fencing Map, based on hardcopy output from iNET. (The use of 1:5,000 OSi original or composite maps is also acceptable, as per the example in Map 18.1.)

18.7 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. It is important that this map shows the presence of 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 meet with the terms and conditions of the scheme involved, and must demonstrate the environmental suitability of the proposal in terms of maintaining and enhancing biodiversity. The BIO Map may be sent to statutory and non-statutory referral bodies (e.g. NPWS, Inland Fisheries Ireland, An Taisce, Local Authorities) with the referral for their comments and observations regarding the proposal.

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, must be clearly identified on the BIO Map and clearly labelled in the accompanying legend. See Map 18.5 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 trees, aquatic buffer zones, archaeological exclusion zones, dwelling setbacks, etc. See Section 6 for details regarding ABE eligibility.
- 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 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. This is important to ensure that the correct claim is being made and that the plot table takes into account areas of ABE in excess of 15% that are ineligible for grant and premium.
- Designated sites adjoining or overlapping proposed 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. Monuments should be identified on the map with a numbered prominent red cross as shown in Map 18.5.
- Vehicle and pedestrian access to the site must be identified.
- Planned and existing firelines should be labelled, where required.
- The type and direction of cultivation within each plot, together with the location of sediment traps, should be identified on both the map and legend. The existing drainage network on the site should be indicated, where possible.
- Exclusion zones (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 of the relevant details regarding biodiversity measures / features.

An example of a BIO Map prepared using a colour orthophoto (1:5,000 scale) printed from the Department’s iNET system is presented in Map 18.5. 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/forests-service/). This template should be used with any BIO Map submitted in support of a Form 1 or Form 2 application.

18.7.1 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 *Forest Biodiversity Guidelines* require 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 these features / areas / plots presented as ABEs in support of grant aid must be clearly identifiable and verifiable on-the-ground.

Tables 6.1 and 6.2 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 600 metre length of stream running along the boundary of a plantation with a 15 metre planting setback would amount to approximately 0.90 ha of ABE.

Table 18.6 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	0.05	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

An example of the BIO Area Table with ABE features and ABE plots by plot number is provided in Map 18.5.

18.7.2 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 GPC adopted should be that of the largest planted GPC area (i.e. the GPC that makes up the majority of the plantation) comprising the application, with the following exception: biodiversity plots which are located on sites of Land Type 'Suitable Land (GPC 1)' (as per the Forest Service document *Land Types for Afforestation*) or which are located adjacent to a GPC 1 plot, will be paid at the GPC 1 rate, irrespective of the largest GPC in the plantation.

18.7.3 Claim reductions for plantation ABE areas in excess of allowable 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):

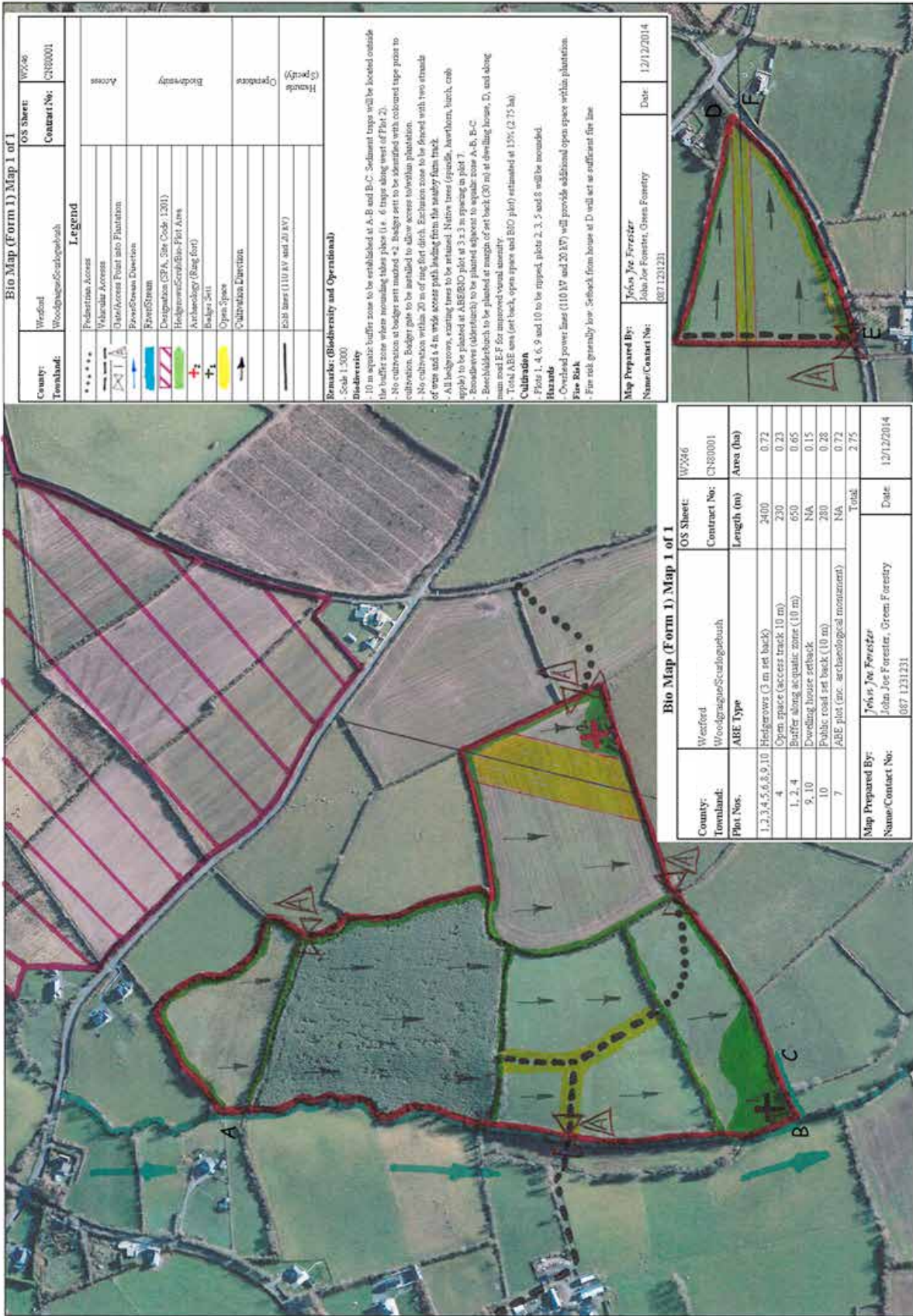
$$\text{Claimed area} = \text{Actual planted area} \times (100 / 85)$$

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

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
<u>ABE plot</u>	<u>0.72 ha</u>
Total:	2.98 ha

A total of 2.98 ha or 16.6 % of the plantation is made up of ABEs, leaving 15.02 ha of planted area. This is in excess of the allowable 15% threshold. In this case, the eligible claimed area is calculated as follows: $15.02 \times 100/85 = 17.67$ ha.

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



Map 18.5 Example of an Afforestation Scheme Form 1 Biodiversity Map, based on hardcopy output from INET. (The use of 1:5,000 OSI original or composite maps is also acceptable, as per the example in Map 18.1.)

18.8 Forest Road Scheme - mapping requirements

18.8.1 General

The following mapping requirements apply to the Forest Road Scheme published by the Department in December 2014. The total grant under the scheme is payable in two instalments of 90% and 10% respectively. The 1st instalment 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). The 2nd instalment is paid when at least 20% of the area served by the road is harvested. The Forest Road Scheme is a cost-based scheme and a maximum of 100% of total costs of building forest roads will be funded, subject to the maximum payment of up to €40 / metre (excluding VAT) to a maximum of 20 metres / hectare.

18.8.2 Mapping requirements

The Department's iNET system can be used to submit forest road pre-approval (Form 1) applications online. Alternately, roads for approval and lengths claimed for grant aid can be clearly and accurately plotted on a 1:5,000 OSi map or 1:5,000 orthophoto map printed from the Department's iNET system. The Department will then digitise all grant-aided roads into its mapping database.

The various features recorded on the Forest Road Map should be annotated as follows for both proposed (i.e. Form 1 applications) and built (i.e. Form 2 and 3 applications) forest roads:

- The harvesting road must be indicated by a dashed red line (i.e. 'A.....B').
- Upgraded forest road must be indicated by a cross-and-dash black line (i.e. 'C X--X-X D').
- Existing roads to / within the plantation must be shown by a continuous thick black line (i.e. _____).
- Species information and plot boundaries (use an existing Certified Species Map, if available).

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 bellmouths, 't'-turning areas and loading bays (i.e. 30 metres equivalent length for a standard bellmouth; 70 metres for a standard 'T'-turning area; 105 metres for a standard loading bay with internal turning area; 30 metres for a standard 'back-in' type loading bay; 110 metres for a circle turning area; and 45 metres for a standard passing place) (also see the COFORD *Forest Road Manual*, 2nd Edition, 2005).

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

Environmental features that may be potentially impacted by the proposed road development (e.g. archaeology) must be included on the Form 1 pre-approval Forest Road Map, where relevant. The harvest area (area to be harvested within the next 3 years) to be served by a proposed forest road

must be clearly identified and outlined in blue on the Form 1 Forest Road Map. In addition to relevant applicant details and 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 (metres)
- the length of proposed and eligible grant-aided road to be constructed (metres) (in situations where the length of the road to be constructed is in excess of the 20 metres 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 3 years and served by the proposed harvest road
- the age(s) of plantation served by the proposed road.

In the example Form 1 Forest Road Map presented in Map 18.6, the total length of proposed road is 280 metres. However, the eligible road length for grant aid is 226 metres, based on the 20 m / ha threshold of the 11.3 ha plantation being serviced.

Under the new funding programme (2015-2020), a Special Construction Works (SCWs) grant is being introduced at a maximum of 50% of the cost subject, up to a cap of €5,000 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.

Sites of SCWs must be lettered and clearly identified on the legend attached to the (pre-approval, Form 2 and Form 3 Forest Road Maps. In addition, features such as archaeological sites and aquatic zones must be identified on a BIO Map, using the mapping conventions detailed in Section 18.7.

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. Road specifications (e.g. length / distance, peat 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.). The format presented in Table 18.7 should be used where these road specifications are required.

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.

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 20 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 3 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

For Form 3 submissions, the harvest area (the area that was harvested) served by the built road must be clearly identified and outlined in blue on the Forest Road Map. As per the conditions of the Forest Road Scheme, this must equate to at least 20% of the approved eligible area identified in the original Form 1 application.

Table 18.7 Extract from Forest Road Scheme Form 1, requiring proposed roading specifications.

Details		Section location (on map):				
		A – B	B – C	C – D	D – E	E – F
1.	Distance (m)					
2.	Peat depth (mm)					
3.	Formation (type)					
4.	Well-drained ('Yes' or 'No')					
5.	Culvert (No. X size (mm))					
6.	Pavement (total depth (mm))					
7(a).	Pavement base material type					
	Pavement base material depth (mm)					
7(b).	Pavement surface material type					
	Pavement surface material depth (mm)					
8.	Road Gradient (% or ratio)					
9.	Cross slope (% or ratio)					
10.	Construction type					
Comments:						
NOTES						
Section location. Assign a column to each section of the forest road (A – B, B – C, C – D, etc.).						
Item 3: Select from Table 12 of the <i>Forest Road Manual</i> (Ryan <i>et al.</i> , 2005)(*) the formation type that best matches the proposal.						
Item 4: A well-drained site is a site where the water table is more than 600 mm below formation level.						
Item 5: For guidance on appropriate culvert sizing and layout, see <i>Forest Road Manual</i> Section 11 (Streams and Water Crossings).						
Item 6: Depending on Item 3 and Item 4, determine the pavement depth from Table 12, <i>Forest Road Manual</i> .						
Item 7: See <i>Forest Road Manual</i> Section C.7 (Construction Material) and Appendix E.6 (Specification for Road Material).						
Item 10: Describe the construction type, e.g. 'excavate' formation, 'build on top'. See <i>Forest Road Manual</i> Section C.3 (Forest Road Formation Methods).						
(* Ryan, T., H. Philips, J. Ramsay and J. Dempsey. 2005. <i>Forest Road Manual</i> . Guidelines for the Construction and Management of Forest Roads. 2nd Edition. Published by COFORD.)						



Map 18.6 Example of a Forest Road Scheme Form 1 Forest Road Map, based on hardcopy output from iNET. (The use of 1:5,000 OSi original or composite maps is also acceptable, as per the example in Map 18.1.)

18.9 Woodland Improvement Scheme - mapping requirements

18.9.1 Tending & Thinning of Broadleaves (WIS)

Element 1 of the Woodland Improvement Scheme, the Tending & Thinning of Broadleaves measure, applies to young broadleaf woodlands (planted post-1980) that are suitable for tending or thinning. The area and width criteria for minimum eligible plots are 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 or open space areas.

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 standards 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 to digitise boundaries of the proposed operations into the Department's mapping system.

Any relevant notes or remarks should be recorded on the map to aid the assessment of the application and its suitability for grant aid. 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. Map 18.7 is an example of a WIS Certified Species Map prepared using an orthophoto map (1:5,000 scale) printed from the Departments' iNET system.

18.9.2 Plantation access for fertiliser application / foliar analysis

Where funding is sought under the Woodland Improvement Scheme for brashing, for the purpose of:

- improving access for the manual application of fertiliser where aerial fertilisation is not possible, or
- undertaking necessary foliar sampling to establish the nutrient status and to determine the type and rate of fertiliser required,

a Certified Species Map should be prepared in accordance with the standards set out earlier in this section.

Any relevant notes or remarks should be recorded on the Certified Species Map to aid the assessment of the application and its suitability for grant aid. If the area submitted for approval has received grant aid in the past, the Contract Number for the area must be noted on the Certified Species Map.

18.9.3 Environmental Enhancement of Forests (EEF)

The aim of the Element 2 of Woodland improvement, the Environmental Enhancement of Forests measure, is to support various actions within existing forests, which bring about structural changes that will proactively protect and enhance water quality, habitats and species, archaeological sites, sensitive landscapes and other environmental features. This measure is not yet open to applications, and further details regarding mapping requirements will follow, in due course.



Map 18.7 Example of a Woodland Improvement Scheme Form 1 Certified Species Map, based on hardcopy output from iNET. (The use of 1:5,000 OSI original or composite maps is also acceptable, as per the example in Map 18.1.)

18.10 Reconstitution of Woodlands Scheme - mapping requirements

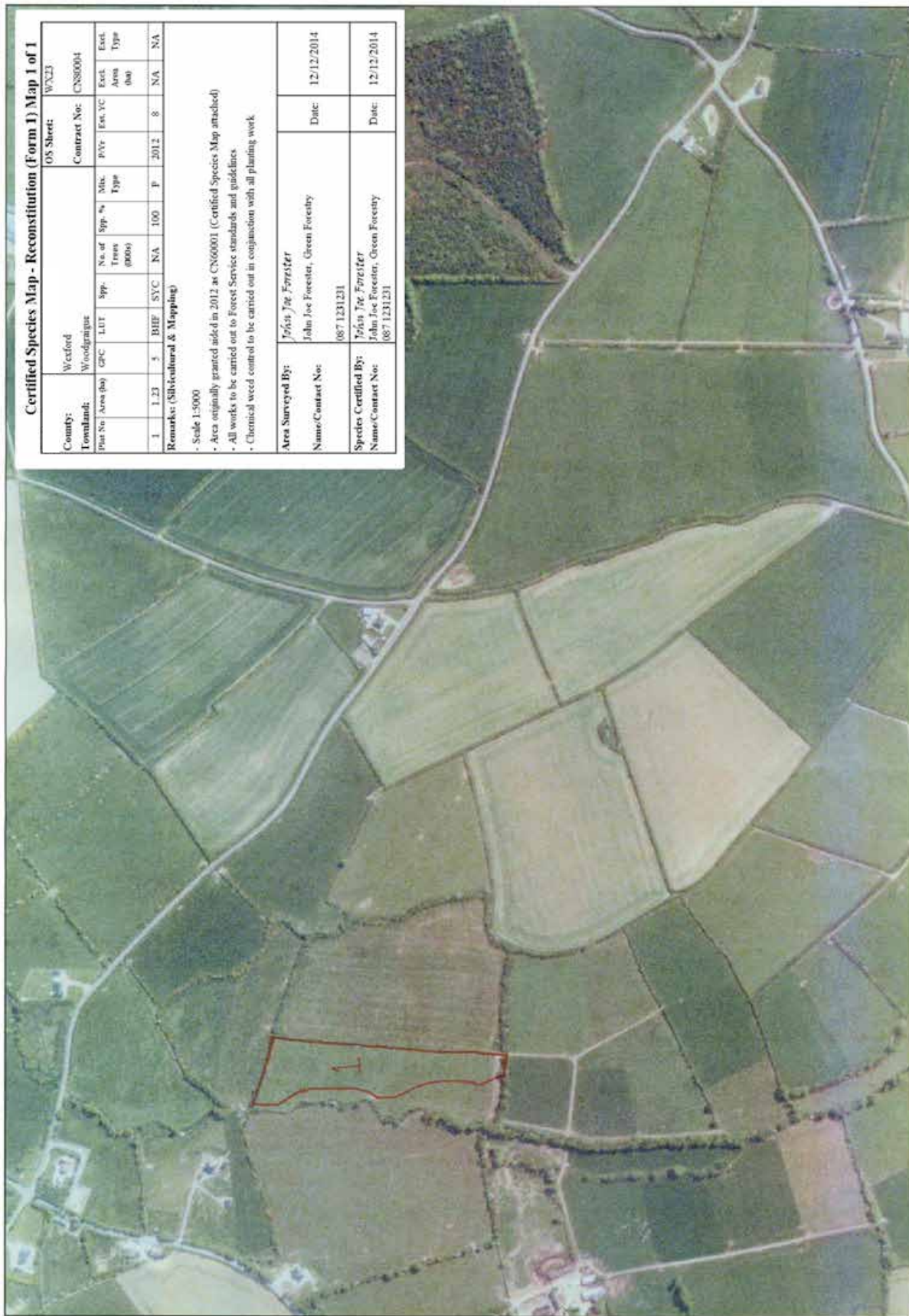
This grant scheme applies when damage to a plantation has occurred as a result of natural causes. The scheme supports the removal and destruction of trees infected by contagious pathogens, or trees likely to be so infected. Support may also be considered for the restoration of forests damaged by other natural causes, catastrophic events and / or climate change related events, such as frost, wind, deer, grey squirrel and vole, where more than 20% of the forest potential has been damaged.

From January 2015 onwards, reconstitution may be available for plantations that suffer from 'significant damage' due to disease (trees infected or likely to be so infected), frost, drought, deer, grey squirrel, vole and insect damage. 'Significant damage' implies the death or irremediable damage of 20% or more of the trees in the relevant plantation covered by one Contract Number.

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 18.7.

The Certified Species Map should clearly indicate the location of all affected areas covered by 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 Department's 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 must also be submitted. Map 18.8 is an example of a Reconstitution Scheme Certified Species Map prepared using an orthophoto map (1:5,000 scale) printed from the Department's iNET system. In the example, a total of 1.23 ha of the sycamore plot (Plot 1 in the Reconstitution Certified Species Map) has suffered severe frost damage and must be restored to Forest Service standards.



Map 18.8 Example of a Reconstitution Scheme Form 1 Certified Species Map, based on hardcopy output from iNET. (The use of 1:5,000 OSI original or composite maps is also acceptable, as per the example in Map 18.1.)

18.11 Summary of map requirements by scheme type

Table 18.8 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).

Table 18.8 Summary of map type requirements by scheme type.

Map type	Scheme type											
	Affor.			Roads			WIS			Recon.		
	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3
Certified Species Map	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
Fencing Map	✓	✓								✓	✓	
BIO Map	✓	✓		✓	✓					✓	✓	

Section 19

Environmental Protection

19.1 Overview

The Forest Service places great emphasis on a careful evaluation of the environmental implications of any afforestation proposal. Cases that give rise to particular environmental concerns should be dealt with on the basis of the sub-threshold EIA process, the Appropriate Assessment Procedure and the consultation process outlined in this section. At development planning stage (i.e. Form 1 stage), all environmental considerations must be identified and plans drawn up with these in mind. Following approval of the application, work must be carried out as detailed in the application to ensure environmental best practice. The Forest Service, Department of Agriculture, Food & the Marine, has published the following set of guidelines:

- *Forestry & Water Quality Guidelines*
- *Forestry & the Landscape Guidelines*
- *Forestry & Archaeology Guidelines*
- *Forest Biodiversity Guidelines*
- *Forest Harvesting & the Environment Guidelines*
- *Forest Protection Guidelines*
- *Forestry & Kerry Slug Guidelines*
- *Forestry & Otter Guidelines*
- *Forestry & Freshwater Pearl Mussel Requirements: Site Assessment and Mitigation Measures*
- *Aerial Fertilisation Requirements*

The *Irish National Forest Standard*, published by the Forest Service, outlines criteria and indicators relating to the national implementation of Sustainable Forest Management. Also, the *Code of Best Forest Practice - Ireland* sets out for each forest operation the best operational practice and potential adverse impacts, and is available from the Forest Service.

Failure to comply with the *Code of Best Forest Practice* and suite of environmental guidelines / requirements applicable at the time of approval, may result in grants and premiums being withheld and or penalties applied.

Environmental protection and control in relation to the Forest Service grant and premium schemes are achieved by the following:

- the planning and design of each project in accordance with the *Code of Best Forest Practice* and suite of environmental guidelines / requirements
- the EIA sub-threshold screening process
- the Appropriate Assessment Procedure
- consultation with prescribed bodies

- public consultation
- the appeals procedure
- Forest Service inspections

The European Communities (Forest Consent & Assessment) Regulations (S.I. 558 of 2010) give legal basis to the consultation process that the Forest Service uses with prescribed bodies and the public in relation to specific environmentally sensitive sites. Table 19.1 outlines the environmental considerations and the appropriate prescribed consultation bodies.

Article 6 of the Rural Development Regulation 807/2014, which details the rules governing Ireland's Forestry Programme, sets minimum environmental requirements in relation to afforestation and creation of woodland measure. This includes (in Article 6(a)) a requirement that:

the selection of species to be planted, of areas and of methods to be used shall avoid the inappropriate afforestation of sensitive habitats such as peat lands and wetlands and negative effects on areas of high ecological value including areas under high natural value farming. On sites designated as Natura 2000 pursuant to Council Directive 92/43/EEC and Directive 2009/147/EC of the European Parliament and of the Council only afforestation consistent with the management objectives of the sites concerned and agreed with the Member State's authority in charge of implementing Natura 2000 shall be allowed; ...

19.2 Sources of information

Applicants and Registered Foresters can access sources of information regarding environmental sensitivities, in addition to that available on iNET. Querying these databases may lead to a more refined application, or may give advanced indication of acute sensitivities that may restrict the feasibility of the project overall. The following are additional sources of information regarding habitats, species and water:

- National Biodiversity Data Centre (NBDC) (www.biodiversityireland.ie/)
- National Parks & Wildlife Service (NPWS) (www.npws.ie)
- Local records may be available through the local NPWS Office.
- The most up-to-date records of protected species may be requested from the NPWS using a data request form, available to download at www.npws.ie/media/npws/publications/Data%20request%20form.doc
- For further biodiversity-relevant datasets available in Ireland, see Appendix 3 of the report entitled *Integrated Biodiversity Impact Assessment: Streamlining AA, SEA and EIA Processes: Practitioner's Manual* (EPA, 2013) (PDF available at www.epa.ie/pubs/reports/research/biodiversity/).
- For information on Water Framework Directive waterbody status, contact the Environmental Protection Agency (EPA), Richview, Clonskeagh, Dublin 14, at 01-268 0100. Also see www.epa.ie and <http://maps.epa.ie>

Table 19.1 Environmental Considerations, as set out on the afforestation pre-approval Form 1, Page 3, together with relevant referral bodies and referral periods. The corresponding referral structure for the Forest Road Scheme and the Reconstitution Scheme is also shown.

Environmental Consideration		Afforestation Scheme		Referral for other schemes <i>Note: Public consultation only applies to the Afforestation and Forest Road Schemes</i>	
		Referral body	Referral period	Forest Road Sch.	Recon. Sch.*
1. WATER QUALITY					
1.1	Is the area designated potentially acid sensitive?	Subject to protocol which specifies consultation with the EPA in certain cases.			
1.2	Is the area >5 ha and sensitive for fisheries?	Inland Fisheries Ireland	4 weeks	4 weeks	4 weeks
1.3	Is the area non-sensitive for fisheries and >40 ha?	Inland Fisheries Ireland	4 weeks	4 weeks	4 weeks
1.4	Is the area >10 ha and within a catchment area of a Local Authority designated water scheme?	Local Authority	4 weeks	4 weeks	4 weeks
2. DESIGNATED HABITATS					
2.1	Is the area within a NHA, pNHA, SAC, SPA or National Park? Specify site code(s)	NPWS	6 + 2 weeks	6 + 2 weeks	6 + 2 weeks
		Local Authority	4 weeks	4 weeks	4 weeks
		Inland Fisheries Ireland	4 weeks	4 weeks	4 weeks
		An Taisce	4 weeks		
2.2	If the area is within a NHA, is a completed Notifiable Action Form / Action Requiring Consent Form (consent from National Parks & Wildlife Service) included?				
2.3	If the area is within a Hen Harrier SPA, will operations occur between the 1st April and 15th August inclusive?	NPWS	6 + 2 weeks	6 + 2 weeks	6 + 2 weeks
2.4	If the area within a NPWS referral zone for a NHA, pNHA, SAC, SPA or National Park?	NPWS	6 weeks	6 weeks	6 weeks
2.5	Is the area within 3 km upstream of a NHA, pNHA, SAC or SPA of National Park? Specify site code(s)	NPWS	6 weeks	6 weeks	6 weeks
2.6	Is the area within a Freshwater Pearl Mussel 6 km zone? If 'Yes', the <i>Forestry & Freshwater Pearl Mussel Requirement</i> Forms A and B should be included with the application.	NPWS	6 + 2 weeks	6 + 2 weeks	6 + 2 weeks
2.7	Is the area within a Freshwater Pearl Mussel catchment?	NPWS	6 + 2 weeks	6 + 2 weeks	6 + 2 weeks
2.8	Does the area contain a current REPS plan habitat?	None			
3. ARCHAEOLOGY					
3.1	Does the area contain an archaeological site or feature with intensive public usage?	NMS	2 months	2 months	2 months
		Local Authority	4 weeks	4 weeks	
		An Taisce	4 weeks		
3.2	Does the area contain or adjoin a listed archaeological site or monument?	NMS	2 months	2 months	2 months
4. LANDSCAPE					
4.1	Is the area within a prime scenic area in the County Development Plan?	Local Authority,	4 weeks	4 weeks	
		An Taisce	4 weeks		
4.2	Are there any other High Amenity landscape considerations?	Local Authority	4 weeks	4 weeks	
5. SIZE FOR NOTIFICATION TO LOCAL AUTHORITY					
5.1	Is the area greater than 25 ha?	Local Authority	4 weeks	N/a	
6. OTHER ENVIRONMENTAL CONSIDERATIONS					
6.1	Specify	As necessary	4 weeks	4 weeks	

Note: The Department has agreed a referral matrix with NPWS (see Forest Service Circular 2 of 2013) whereby applications adjoining or upstream of designated area can be assessed without automatic referral to NPWS.

Note: If present, all items listed may require the Forest Service to consult with prescribed bodies. Consultation is dependent on the type and scale of the operations proposed and determined on a case-by-case basis. Referral periods listed are the minimum applicable. Other schemes may be subject to the referral process described above, on a case-by-case basis.

19.3 Form 1 'Environmental Considerations' section

The pre-approval Form 1 contains a section entitled 'Environmental Considerations', which sets out questions to be answered by the Registered Forester. The following sets out explanatory notes in relation to these.

19.3.1 Water quality

Qu.1.1 Is the area designated potentially acid sensitive by this Department?

Answer 'yes' if the proposed planting site is within an area designated as acid sensitive by the Department. The Acid Sensitivity Protocol applies - see Appendix 11. Acid sensitive areas are identified by 6 inch OS sheets - Appendix 11 for list and map.

In the case of a site that is completely free-draining with no aquatic zone present (with 'aquatic zones' defined as any stream, river and lake indicated on the 6 inch OS sheet), where the collection of water samples for testing is not possible, it is necessary to establish whether there is an aquatic zone(s) on the same holding down slope from the proposed planting site. If such an aquatic zone exists on the same holding, then water sampling must be carried out in that aquatic zone. If no aquatic zone exists on the holding down slope of the proposed planting site, the Acid Sensitivity Protocol does not apply and normal approval procedures apply for that site, subject to inspection and confirmation of this scenario by the Forestry Inspector.

Qu.1.2 Is the area >5 ha and sensitive for fisheries?

Answer 'yes' if all three bullet points below apply:

1. one (or more) aquatic zone(s) (a stream, river or lake shown on a 6 inch Ordnance Survey sheet, scale 1:10,560, or the river dataset on iNET) traverses or is adjacent to the proposed planting site
2. the proposed planting site is in an area of potential fisheries sensitivity (as indicated by designated OS sheets - see Appendix 12 for list and map)
3. the proposed planting site is greater than 5 hectares

Registered Foresters or applicants may arrange for a notice commenting on the proposed afforestation, and signed by an authorised officer of Inland Fisheries Ireland, to accompany the application in these instances. Otherwise, the Forest Service will carry out all necessary consultations.

Qu.1.3 Is the area non-sensitive for fisheries and >40 ha?

Answer 'yes' if all three bullet points below apply:

1. one (or more) aquatic zone(s) (a stream, river or lake shown on a 6 inch Ordnance Survey sheet, scale 1:10,560, or the river dataset on iNET) traverses or is adjacent to the proposed planting site
2. the proposed planting site is not in an area of potential fisheries sensitivity
3. the proposed planting site is greater than 40 hectares

Registered Foresters or applicants may arrange for a notice, signed by an authorised officer of Inland Fisheries Ireland, commenting on the proposed afforestation to accompany the application in these instances. Otherwise the Forest Service will carry out any necessary consultation with Inland Fisheries Ireland.

Qu.1.4 Is the area >10 ha and within a catchment area of a Local Authority designated water scheme?

Answer ‘yes’ if the proposed planting site falls within a catchment area of a water scheme designated as sensitive to forestry in the County Development Plan, and where the planting site is greater than 10 hectares.

Note that it is necessary to adhere to the Forestry & Water Quality Guidelines on all sites, including those that do not have an aquatic zone.

19.3.2 Designated habitats

Qu.2.1 Is the area within a NHA, pNHA, SAC, SPA or National Park? Specify site code(s).

Answer ‘yes’ if the proposed planting site falls within a Natural Heritage Area (NHA), a proposed Natural Heritage Area (pNHA), a Special Area of Conservation (SAC), a Special Protection Area (SPA) or a National Park. A note must be made of the name and site code associated with the designated area.

The conservation of biodiversity in Ireland has been strengthened and expanded by EU law, most notably by the:

- Birds Directive (79/409/EEC as amended 2009/147/EC)
- Habitats Directive (92/43/EEC)
- Water Framework Directive (2000/60/EC)
- EIA Directive (2011/92/EU)

The Habitats Directive is transposed into Irish national law by the European Communities (Birds & Natural Habitats) Regulations 2011 (S.I. 477 of 2011).

The Habitats Directive provides for the establishment of NATURA 2000 sites, i.e. SACs and SPAs. Further information on designated sites in Ireland is available on the National Parks & Wildlife Service website (www.npws.ie).

All applications within areas designated as a NHA, pNHA, SAC, SPA or National Park are referred to the National Parks & Wildlife Service, with the exception of breeding Hen Harrier SPAs (Regarding breeding Hen Harrier SPAs, mandatory referral to NPWS takes place if the project area, or any part thereof, is within a Hen Harrier ‘Red Area’, either within the SPA or extending outside the SPA.)

Qu.2.2 If the area is within a NHA, is a completed Notifiable Action Form / Action Requiring Consent Form (consent from National Parks & Wildlife Service) included?

Where the proposed planting is within a NHA, a completed Notifiable Action Form must be included with the application to the Forest Service, and this question answered ‘yes’.

A dual consent process exists for the planting or cutting of trees within NHAs. Therefore, an

applicant must obtain the consent of both the Minister of Arts, Heritage & the Gaeltacht and the Minister for Agriculture, Food & the Marine. The consent of the Minister of Arts, Heritage & the Gaeltacht is obtained by submitting a Notifiable Action Form / Action Requiring Consent Form (i.e. an application for permission to carry out an operation or activity on a site to which Section 19 of the Wildlife (Amendment) Act 2000 applies) to NPWS, who complete the form and return it to the applicant. The Notifiable Action Form is available for download on the NPWS website (www.npws.ie).

Qu.2.3 If the area is within a Hen Harrier SPA, will operations occur between the 1st April and 15th August inclusive?

The Hen Harrier nesting season is from the 1st of April to the 15th of August inclusive. Answer this question 'yes' if the proposed planting will occur between these dates. Where potential disturbance operations are entailed and the site overlaps with a Hen Harrier 'Red Area', a breeding survey will be required - see Appendix 21.

Qu.2.4 Is the area within a NPWS referral zone for NHA, pNHA, SAC or SPA? Specify site code(s).

Answer 'yes' where the proposed planting site lies within the 0.5 km and / or the 3 km NPWS referral zone for a NHA, pNHA, SAC or SPA. The Forest Service may refer these applications to NPWS.

Note that it is an offence to contravene the European Communities (Birds & Natural Habitats) Regulations 2011 (S.I. 477 of 2011), and a person may be liable to significant fines of imprisonment, or both. Forest Service penalties may also apply, as set out in the DAFM *Forestry Scheme Penalty Schedules* (January 2015).

Qu.2.5 Is the area within 3 km upstream of a NHA, pNHA, SAC, SPA or National Park? Specify site code(s).

Answer 'yes' if the proposed planting site falls within 3 km upstream of a NHA, pNHA, SAC, SPA or National Park, and is hydrologically connected.

Qu.2.6 Is the area within a Freshwater Pearl Mussel 6 km zone? If 'Yes', the Forestry & Freshwater Pearl Mussel Requirements Forms A and B should be included with the application.

The *Forestry & Freshwater Pearl Mussel Requirements* were published in 2008 and apply to all impacting forest operations within the catchments of FPM populations in rivers designated as SACs for the species (27 FPM populations, 19 SACs). Table 4 of Section 3.1 of that document, as amended by Forest Service Circular 08/2012 to include thinning and aerial fertilisation (see Appendix 22), indicates situations where the Requirements apply.

If an application lies within a FPM 6 km zone and the *Forestry & Freshwater Pearl Mussel Requirements* apply, Form A (Site Description) and Form B (Mitigation Measures) must be submitted with the application. The *Forestry & Freshwater Pearl Mussel Requirements* are available on the Forest Service website www.agriculture.gov.ie/forestservice/environmentalinformation/

Qu.2.7 Is the area within a Freshwater Pearl Mussel catchment?

If an application is within the FPM catchment but not within the FPM 6 km zone, the *Forestry & Freshwater Pearl Mussel Requirements* apply if:

- the application increases the total cumulative area of an operation in a 3-year period to >10% of the FPM catchment
- afforestation applications >50 ha
- clearfellings >25 ha

Qu.2.8 Does the area contain a current REPS plan habitat?

Answer 'yes' if the proposed planting site contains a current or historical REPS habitat. Refer to Section 21 for further information.

19.3.3 Archaeology**Qu.3.1 Does the area contain an archaeological site or feature with intensive public usage?**

If the proposed planting site contains an archaeological site or feature with intensive public usage, answer this question 'yes' and identify the location of the site / feature on the Biodiversity Map (see Section 18.7). Although not required, a speedier processing of the application may be facilitated if the relevant Record of Monuments and Places (RMP) number is included in the Biodiversity Map legend.

Qu.3.2 Does the area contain or adjoin a listed archaeological site or monument?

Where the proposed planting site contains or adjoins a listed archaeological site or monument, or an unlisted but suspected archaeological site, answer Qu.3.2 'yes' and identify the location of the site / monument on the Biodiversity Map (see Section 18.7). Although not required, a speedier processing of the application may be facilitated if the relevant Record of Monuments and Places (RMP) number is included in the Biodiversity Map legend.

Damage to archaeological sites is irreversible. The constraints relating to such sites are summarised in the *Forestry & Archaeology Guidelines* published by the Forest Service.

Details of the public venues for inspecting the hardcopy Record of Monuments and Places (RMP) lists and maps identifying the locations of these sites (as well as other sources of information) are available from the National Monuments Service, Department of Arts, Heritage & the Gaeltacht (www.archaeology.ie) - see Appendix 10.

The *Forestry & Archaeology Guidelines* also summarise the actions and reporting procedures that must follow any archaeological find made in the course of forestry work, as well as the exclusion zones to be observed around non-archaeological sites.

19.3.4 Landscape**Qu.4.1 Is the area within a prime scenic area in the County Development Plan?**

Answer 'yes' if the proposed planting site falls within an area which is:

- subject to an Area of Special Amenity Order confirmed by the Minister for Arts, Heritage & Gaeltacht; and / or
- designated with the highest landscape sensitivity in the County Development Plan (often classified as 'Areas of Outstanding Natural Beauty' or 'High Amenity Areas'), the conservation of which is an objective of that County Development Plan.

Qu.4.2 Are there any other High Amenity Landscape considerations?

Where the proposed planting site falls within other landscape categories (e.g. moderate sensitivity) in the County Development Plan, answer 'yes' and specify details.

Areas adjacent to the sea, lakes, dwellings or roads are particularly sensitive, and particular attention should be paid to the *Forestry & the Landscape Guidelines* in these areas.

19.3.5 Size for Notification to Local Authority

Qu.5.1 Is the area greater than 25 ha?

If the gross area of the proposed planting site is greater than 25 hectares, answer 'yes'.

19.3.6 Other Environmental Considerations

Qu.6.1 Specify

If there are any other known environmental considerations not covered by the above, answer 'yes' and specify details. Examples include features of local historical interest, locally-important views and areas used for amenity.

19.4 Public consultation process

When the Department receives an application under the proposed Afforestation or Forest Road Scheme, a public notice of the application will be placed on the Department's website detailing: (i) the contract number of the application; (ii) the location of the proposed site (townland and county); and (iii) the size of the proposed project. Applications which require the submission of an Environmental Impact Statement (EIS) to enable the Department to undertake an Environmental Impact Assessment (EIA) may also have notices of the application, the EIS, and any other significant additional information submitted, placed in one or more local newspapers.

Members of the public - including non-governmental organisations promoting environmental protection - may make a submission or observation in relation to the application within 4 weeks of the date of publication of the notice. When considering the application, the Forest Service must, *inter alia*, have regard to any submission or observation received. When the Forest Service makes a decision on an application, any person or organisation that made a submission will be notified of the decision, and the application is held for a further 21 days during which time, the person or organisation who made the submission can appeal the decision.

The Department may also consult with relevant bodies including the National Parks & Wildlife Service, the National Monuments Service, the Environmental Protection Agency,

Table 19.2 Other consultation / referral procedures.

Scenario	Consultation type	Consultation period
Afforestation of areas of 50ha or more (or sub-threshold)	Mandatory EIA required as per European Communities (Environmental Impact Assessment) Regulations 1989 (S.I. 349 of 1989), as amended	N/A
Forest road works exceeding 2,000 meters in length (or sub-threshold)	Mandatory EIA required as per Planning and Development Regulations 2001 (S.I. 600 of 2001) as amended by Planning and Development Regulations 2008 (S.I. 235 of 2008)	N/A
New entrances onto public roads	Planning permission required	
Areas of all sizes within 60 m of a dwelling or associated building	Applicant should liaise with the owners of neighbouring properties to resolve in advance any potential concerns	N/A
Airport	Applications are referred to appropriate aviation authority	Normally 1 month

Inland Fisheries Ireland, the relevant Local Authority and An Taisce. Other bodies may also be consulted, as required.

19.5 Appeals process

Applicants who are dissatisfied with a decision affecting eligibility to payment may request a review of that decision to the relevant payment section in the Forest Service, Johnstown Castle, Co Wexford. Such requests must be made in writing within 21 days of the date of the decision, setting out the grounds on which the review is being sought. Applicants will be notified in due course of the outcome of this review.

Applicants who are still dissatisfied with the decision following review can appeal to the **Agriculture Appeals Office, Kilminchy Court, Portlaoise, Co Laois (Lo Call 1890 671671 / Tel. (057) 8667167)**. The appeal must be made in writing within 3 months of the date of the letter issued following the review. The appeal must include the facts and contentions on which the applicant intends to rely, together with such documentary evidence that they may wish to submit in support of their appeal.

All Form 1 consent appeals for the Afforestation Scheme and the Forest Road Scheme (including 3rd parties appeals following a decision) will continue to be dealt with by the Forest Service Forestry Appeals Committee.

19.6 Environmental Impact Assessment (EIA)

The EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU) requires that certain types of development must be assessed to determine the likely environmental effect of the development, before consent can be granted.

The type of development projects covered by the EIA Directive are listed in Annex I and II of

the Directive and includes, *inter alia*, initial afforestation, deforestation and the construction of roads (Annex II).

An Environmental Impact Statement (EIS) is a statement of the effects, if any, which the proposed development, if carried out, would have on the environment. An Environmental Impact Assessment (EIA) is the process of examining the environmental effects of the proposed development (including aspects at design stage, preparation and evaluation) by a competent authority, before a decision is made to approve the EIS or not, and the public response to that decision. (Note that approval of the EIS *does not* constitute approval for consent, grant aid or licence.)

The forest consent system operated by the Forest Service provides for an EIA to be carried out in certain cases, in accordance with the EIA Directive. The transposing legal instrument in the Irish context is the European Communities (Forest Consent & Assessment) Regulations 2010 (S.I.558 of 2010) (as amended by S.I.442 of 2012) which designates the Minister for Agriculture, Food & the Marine (Forest Service) as the Competent Authority (as defined in the Directive) in such cases.

Under Irish legislation, EIA is mandatory for the following forestry projects:

- initial afforestation which would involve an area of 50 hectares or more (S.I.349 of 1989, as amended by S.I.538 of 2001)
- private roads which would exceed 2,000 meters in length (S.I.600 of 2001, as amended by S.I.235 of 2008)

Under S.I.558 of 2010, all applications for approval to carry out afforestation and forest road construction projects above the mandatory thresholds listed above must be accompanied by an EIS to enable the Minister to undertake an EIA of the project.

In addition, the Regulations provide that all afforestation and forest road construction projects below the mandatory thresholds must be screened for EIA by the Forest Service. Where a proposed sub-threshold development is considered likely to have a significant environmental effect, the Minister will request the developer to submit an EIS to enable an EIA to be undertaken.

19.7 Appropriate Assessment Procedure

Arising from Articles 6(3) and 6(4) of the EU the Habitats Directive (as transposed into national legislation under S.I.477 of 2011), in relation to activities requiring its consent or licensing, the Forest Service must undertake a 'screening' for appropriate assessment to evaluate if there is a possibility of the project – either alone or in combination with other plans and projects – having a significant effect on the conservation objectives and associated qualifying interests of any NATURA 2000 site. If the answer is 'yes' or 'uncertain', an 'appropriate assessment' is required. The proponent of the plan (i.e. the applicant) is then required to submit a NATURA Impact Statement (NIS). Based on the NIS (and other information), the Forest Service then undertakes the appropriate assessment to evaluate:

- whether or not (where previously uncertain) the possibility of a significant effect on a NATURA site exists,
- the nature of the possible significant effect (including in-combination impacts) on the NATURA site, and

- the effectiveness of any proposed mitigation measure(s) designed to avoid the risk of the significant effect.

The project can only receive approval if the Forest Service has determined (either at screening or at appropriate assessment) that it will not significantly affect the NATURA 2000 site, over the short, medium or long term, alone or in combination with other plans or projects.

The above process, which applies to projects both inside and outside of NATURA sites, is captured within the Forest Service Appropriate Assessment Procedure - see Section 20 for details.

19.8 European Communities (Forest Consent & Assessment) Regulations 2010

The European Communities (Forest Consent & Assessment) Regulations 2010 (S.I.558 of 2010) (as amended by the European Communities (Forest Consent & Assessment) (Amendment) Regulations 2012 (S.I.442 of 2012)) came into effect from 14th October 2010.

The Regulations update and replace Part 5 of the European Communities (Environmental Impact Assessment) (Amendment) Regulations 2001 (S.I.538 of 2001) (which have been revoked), to take account of Ireland's obligations under the EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU).

All persons operating in the forestry sector should familiarise themselves with the provisions of these Regulations. They can be purchased from the Government Publications Sales Office or can be viewed at www.irishstatutebook.ie

The Regulations largely restate the previous provisions contained in S.I.538 of 2001 and introduce a number of new provisions in relation to forest road projects and public participation in the decision-making process, along with the introduction of a number of offences and penalties for breaches of the Regulations.

Under S.I.558 of 2010, 'afforestation' is defined as *"the conversion of land to a forest with a minimum area of 0.1 hectares and tree crown cover of more than 20 per cent of the total area, or the potential to achieve this cover at maturity"*.

The main changes are summarised below.

- The obligation to obtain the prior approval of the Minister for Agriculture, Food & the Marine in respect of afforestation (which was required under S.I.538 of 2001) has been extended to include 'forest road works', defined as *"the construction of a forest road or works ancillary to such construction (whether or not such construction involves the removal of trees), but not where such construction consists of the provision of access to a public road"*
- The Regulations place a statutory obligation on the Minister to notify the public of all applications received and to allow the public a minimum of 4 weeks in which to make a submission.
- The Regulation introduces a number of offences, including offences for undertaking afforestation or forest road construction projects without the approval of the Minister.
- A person who commits an offence under the Regulations is liable to prosecution and may face fines of up to €5,000 on summary conviction or up to €250,000 on conviction on indictment.

- If a development is undertaken without prior approval, the Minister is empowered to direct the landowner to: (i) to remove trees planted (in respect of afforestation); (ii) to remove the forest road (in respect of forest road works); and (iii) to restore the land to its condition prior to the commencement of the development.

*It should be noted that the approval of the Minister is required for **ALL** afforestation and forest road construction projects, whether grant aided or not.*

Enquiries in relation to the operation of the above Regulations should be made in writing (by post or e-mail) to the Approvals Section, Forest Service, Department of Agriculture, Food & the Marine, Johnstown Castle Estate, Co. Wexford (e-mail: forests@agriculture.gov.ie).

19.9 Forest road approval system

19.9.1 Guidance for seeking approval for the construction of forest roads

In accordance with the European Communities (Forest Consent & Assessment) Regulations 2010 (S.I.558 of 2010) (as amended) (see below), provisions have been introduced to provide a statutory basis for ensuring that forest road construction projects are assessed in accordance with the requirements of the EIA Directive and are only approved if they will not have a significant environmental impact.

19.9.2 Forest Road Scheme

For forest road works approved under the Forest Road Scheme, the existing environmental assessment and approval procedures operated under that scheme will satisfy the requirements of the Regulations, as EIA screening and the prior approval of the Minister are already conditions of the scheme itself.

The requirement for an EIA for any road construction project equal to or greater than 2,000 metres remains in place.

19.9.3 Other forest road projects

Where no grant assistance is being sought in relation to a new forest road development, the developer will need to ensure that the project is undertaken in compliance with the Regulations and that, where required, the prior approval of the Minister is obtained for the development.

Applications for approval for non grant-aided forest road developments are being facilitated via the existing IFORIS iNET system.

19.9.4 Definition of 'forest road works'

Under the European Communities (Forest Consent & Assessment) Regulations 2010 (S.I.558 of 2010) (as amended):

- 'forest road works' is defined as "*the construction of a forest road or works ancillary to such construction (whether or not such construction involves the removal of tree) but not where such construction consists of the provision of access to a public road*"

- ‘forest road’ is defined as “a road (other than a public road) that serves a forest”

The Regulations apply to all new forest road construction projects and works ancillary to such construction, *whether or not grant aid is being sought for the development.*

It is considered that the following activities *do not* fall within the scope of the Regulation and *do not* require the prior approval of the Minister:

1. The construction of forest roads (including works ancillary to such construction) *where the works commenced before 14th October 2010.*
2. The upgrade or repair to existing roads and works ancillary to such upgrade or repair.
3. The construction of tracks and paths less than 2.9 metres wide to facilitate forest management and other forest activities (but not including new forest roads constructed to a standard which would allow the haulage of timber by trucks).
4. The construction of stacking areas, turntables, lay-bys and culverts (see note below).
5. Tree felling to facilitate or enable road works (this felling is subject to the provisions of the 1946 Forestry Act).
6. The construction of roads for reasons other than to serve a forest (e.g. to serve a wind farm). (Note, permission under the Planning & Development Act 2000 may be required for such roads.)
7. The extension of an existing forest road by up to one-third of its length, provided any such extension does not exceed 90 metres in length, but excluding any extension that would be situated within a NHA, pNHA, SAC or SPA, or is within 100 metres of:
 - a Registered Historic Monument or Archaeological Area under Section 5 of the National Monuments (Amendment) Act 1987
 - a Recorded Monument under Section 12 of the National Monuments (Amendment) Act 1994
 - a National Monument in State or Local Authority ownership or guardianship or with a Preservation Order under the National Monuments Acts 1930-2004.

Note: The construction of stacking areas, turntables, lay-bys and culverts will require approval if undertaken as part of the construction of a new forest road and are ancillary to such construction, or if situated in a NHA, pNHA, SAC or SPA, or if within 100 metres of:

- a Registered Historic Monument or Archaeological Area under Section 5 of the National Monuments (Amendment) Act 1987
- a Recorded Monument under Section 12 of the National Monuments (Amendment) Act 1994
- a National Monument in State or Local Authority ownership or guardianship or with a Preservation Order under the National Monuments Acts 1930-2004.

19.9.5 Definition of ‘works ancillary to road construction’

This definition includes:

- the construction of stacking areas, turntables, lay-bys, bridges and culverts that are constructed as part of the construction of a forest road

- road formation (construction of road base)
- borrow pits (sources of road material that do not require planning permission) on lands adjoining the road construction site.

It is envisaged that, as the approval system evolves, further clarification may be issued, as required, in relation to the operation of the Regulations and their impact of forest road projects.

Section 20

Appropriate Assessment Procedure

20.1 Overview

The overall aim of the European Habitats Directive (Council Directive 92/43/EEC) is to maintain or restore the favourable conservation status of habitats and species which are threatened throughout Europe and deemed highly sensitive to change. These habitats and species are listed in the Habitats Directive and the Birds Directive (Directive 2009/147/EC). Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) – also known as NATURA sites – are designated to afford protection to the most vulnerable of these habitats and species. As such, SACs and SPAs are a key component in the protection of rare and endangered habitats and species, both in Ireland and at a European and international level.

One of the key protective measures under this European legislation is the requirement under Article 6(3) and 6(4) of the Habitats Directive to apply an appropriate assessment procedure, to consider any possible impact on the conservation objectives of a NATURA site that might arise from a plan or project, before a decision is taken whether or not to allow that plan or project to proceed. The application of appropriate assessment in Ireland is governed by the European Communities (Birds & Natural Habitats) Regulations 2011 (S.I. 477 of 2011) (referred to below as the ‘Birds & Habitats Regulations 2011’) (see Irish Statute Book www.irishstatutebook.ie).

Under the Habitats Directive (transposed under the Birds & Habitats Regulations), the Forest Service must undertake a ‘SCREENING’ for an ‘APPROPRIATE ASSESSMENT’ to evaluate if there is a possibility of the project which requires its consent / approval / licensing (see Note 1 below) having a significant effect (see Note 2) on the conservation objectives and associated qualifying interests of a SAC or SPA.

If the answer to this question is ‘yes’ or ‘uncertain’, an APPROPRIATE ASSESSMENT is needed. The applicant is then required to submit a NATURA Impact Statement (NIS). Based on the NIS (and other information), the Forest Service undertakes the APPROPRIATE ASSESSMENT to evaluate:

- whether or not (where previously uncertain) the possibility of a significant effect on a NATURA site exists,
- the nature of that possible significant effect (including in-combination) on the NATURA site, and
- the effectiveness of any proposed mitigation measure(s) designed to avoid the risk of the significant effect.

The Forest Service can only issue approval (see Note 3) where it has determined - either at SCREENING stage or at APPROPRIATE ASSESSMENT - that the project will not have a significantly effect on the NATURA site(s).

Note 1. Typical forestry projects include:

- applications for consent under S.I. 558 of 2010 (as amended by S.I. 442 of 2012) for afforestation or forest road construction works
- applications under any forestry grant scheme
- applications for a felling licence (including thinning) under the 1946 Forestry Act
- applications for an aerial fertilisation licence under S.I. 125 of 2012
- any other activities deemed necessary by the Forest Service.

Note 2. A project may have a 'significant effect' on a NATURA site if it:

- reduces the area of an Annex I habitat, the habitat of an Annex II species, or the overall NATURA site
- damages the physical quality of the environment (e.g. water quality and supply, soil compaction) within the NATURA site
- causes serious or ongoing disturbance to species or habitats for which the NATURA site was selected, e.g. increased noise, human activity
- results in direct or indirect damage to the size, characteristics or reproductive ability of populations within the NATURA site
- interferes with mitigation measures put in place for other plans or projects
- results in a cumulative or 'in combination effect', when combined with other plans and projects.

Note 3. Within the forestry context, 'approval' typically includes:

- consent issued under S.I. 558 of 2010 for afforestation and forest road construction works
- grant scheme approval
- felling licence
- aerial fertilisation licence.

In summary:

- the Forest Service undertakes the SCREENING for APPROPRIATE ASSESSMENT
- the applicant provides the NATURA Impact Statement (NIS) (if required)
- the Forest Service undertakes the APPROPRIATE ASSESSMENT (if required).

This section outlines the Forest Service Appropriate Assessment Procedure (AAP). Appendix 20, Appendix 21 and Appendix 22 provide guidance and a framework for compiling a NIS, and describe specific requirements under the Forest Service AAP regarding Hen Harrier and Freshwater Pearl Mussel.

Relevant research findings will be used by the Forest Service to identify and develop appropriate mitigation measures aimed at avoiding adverse impacts on NATURA sites.

20.2 SCREENING

SCREENING is required in relation to all applications within, partially within, or outside of a NATURA site. In practice, many applications describe projects for which there is no possibility of a significant effect, either due to the nature of the project and / or its physical remoteness and non-connectivity with any NATURA site (e.g. a broadleaf thinning project 7 km downstream of an SAC). In this regard, the Forest Service undertakes a high level SCREENING of all forestry

applications, followed by an individual SCREENING in situations where the possibility of a significant effect may realistically exist.

During the SCREENING process, the Forest Service:

- reviews the description of the project and local site conditions
- identifies any relevant NATURA site (or sites) and reviews the respective qualifying interests and conservation objectives
- assesses whether or not there is a possibility of the project, individually or in combination with other forestry and non-forestry plans and projects, having a significant effect on the NATURA site, in the short, medium or long term.

During individual SCREENING, the Forest Service considers various sources of information, including:

- the application itself (which may be accompanied by various documentation)
- site inspection
- iFORIS and from other data sets
- responses from referral bodies (including National Parks & Wildlife Service) and public submissions
- any other information it deems relevant (e.g. published data and data available from other public authorities, including Local Authorities).
- The Forest Service may also seek further basic information to facilitate SCREENING. However, if the information required is *beyond* what is typically required for a standard application (e.g. any type of ecological or hydrological survey), the application will be directed towards an APPROPRIATE ASSESSMENT, and the information sought through a NIS.

In undertaking the SCREENING, the Forest Service also factors in (as relevant) adherence to:

- its mandatory environmental 'guidelines' (*Forestry & Water Quality Guidelines, Forest Harvesting & the Environment Guidelines*, etc.) and species guidelines for otter and Kerry slug
- procedures regarding disturbance operations within SPAs designated for breeding Hen Harrier (see Appendix 21)
- the *Forestry & Freshwater Pearl Mussel Requirements* (see Appendix 22)
- additional protective measures set out in the application itself
- any additional conditions it may attach to any subsequent consent for the project.

Note SCREENING takes place as part of the normal evaluation of the application by the Forest Service, and in most cases, will be concluded without any additional information being sought from the applicant. However, it is in the applicant's own interest to ensure that applications are complete and accurate. Furthermore, the applicant should take account of the qualifying interests and conservation objectives of any potentially relevant NATURA site (available on the National Parks & Wildlife Service website www.npws.ie/protectedsites) and provide relevant supplementary information, including enhanced protective measures, in their initial application. In cases where an APPROPRIATE ASSESSMENT might otherwise be required, this may provide sufficient information to allow the Forest Service to reach a final

decision regarding consent, *at the earlier SCREENING stage*.

The Forest Service can conclude that there is no possibility of a significant effect if s/he deems that adherence to particular conditions will suffice. These conditions may include adherence to:

- specific Forest Service environmental guidelines, requirements or procedures,
- enhanced protective measures presented within the application itself⁽¹⁾, or
- appropriate measures identified by the Forest Service (including measures arising from the referral process).

At the end of its SCREENING, the Forest Service reaches one of four possible conclusions, as set out in Table 20.1.

20.3 NATURA Impact Statement

As set out in Table 20.1, SCREENING Conclusion 3 requires the submission of a NATURA Impact Statement (NIS) by the applicant, to inform the subsequent APPROPRIATE ASSESSMENT undertaken by the Forest Service.

The NIS is a document reporting on a scientific examination of the proposed forestry project in the context of any relevant NATURA site. The purpose of this examination is to identify and characterise any possible impact (including in-combination effects) on the qualifying interest(s) of the NATURA site, and to identify and detail any proposed mitigation measures designed to avoid the risk of impact. The following are some important aspects of the NIS.

The NIS must be compiled by a relevant expert, suitably qualified and experienced. This expert is normally an ecologist (botanist, zoologist, ornithologist, etc.), but could also be a hydrologist or an engineer, or the forester him- / herself, where the solution is wholly operational (e.g. *“This is how I propose to avoid the habitat entirely ...”*).

As key ingredients, the NIS must:

- identify the relevant NATURA site (or sites), and the relevant conservation objectives and qualifying interests, and how these relate to the site of the project itself (with a survey element, if needed),
- detail relevant operations (short, medium, and long term),
- identify relevant ‘dangers’ / threats / impacts,
- consider short, medium, and long term horizons and relevant in-combination effects, and
- detail appropriate, realistic and sustainable mitigation measures.

The NIS is a scientific report. It may include original survey results, or refer to existing survey results.

Appendix 20 contains guidance to aid in the compilation of a NIS by an applicant and her / his

⁽¹⁾ The Forest Service may consider enhanced protective measures described in the initial application, but only where they approximate those within existing Forest Service guidelines. If more complex measures are being proposed, these will be assessed in the context of a NIS and APPROPRIATE ASSESSMENT.

Table 20.1 AA SCREENING conclusions and outcomes.

SCREENING conclusion	Outcome
<p>SCREENING Conclusion 1: The project is necessary for the management of the NATURA site. For example...</p> <p>Proposed operations are necessary to address the ecological requirements of Annex habitats and / or species (and their habitats) present on the NATURA site.</p>	<p>If Conclusion 1 is reached, an APPROPRIATE ASSESSMENT is not required and (from an AAP perspective) approval may issue (with any necessary conditions attached).</p> <p>Please note, Conclusion 1 only refers to projects <i>specifically designed</i> to address the ecological requirements of Annex habitats and / or species (and their habitats) on a NATURA site.</p> <p>Typically, SCREENING Conclusion 1 should only arise very occasionally, and never within the context of normal ‘bread-and-butter’ applications for afforestation, felling licences, etc.</p>
<p>SCREENING Conclusion 2: There is no possibility that the project, individually or in combination with other plans or projects, will have a significant effect on the NATURA site. For example...</p> <p>Project is within the NATURA site. However, the project (with conditions attached, if applicable) will have no significant effect on the conservation objectives of the NATURA site, in the short, medium and long term, alone or in combination with other plans and projects.</p> <p><u>OR</u></p> <p>The project is proximate to the NATURA site. However, the project (with conditions attached, if applicable) will have no significant effect on the conservation objectives of the NATURA site, in the short, medium and long term, alone or in combination with other plans and projects.</p>	<p>If Conclusion 2 is reached, an APPROPRIATE ASSESSMENT is not required and (from an AAP perspective) approval may issue (with any necessary conditions attached).</p> <p>However, this conclusion applies to the project as presented. As standard, the Forest Service must be notified of any post-approval changes (including reductions in area) in the project prior to implementation, to enable it to evaluate whether or not the change invalidate the findings of the original SCREENING.</p>

<p>SCREENING Conclusion 3: The project, alone or in combination with other plans or projects, may have a significant effect on the NATURA site <u>OR</u> uncertainty exists regarding the possibility of a significant effect <u>OR</u> the screening process itself has become overcomplicated. APPROPRIATE ASSESSMENT is required. For example...</p> <p>The project, alone or in combination with other plans or projects, may have a significant effect on the NATURA site. APPROPRIATE ASSESSMENT is therefore required.</p> <p><u>OR</u></p> <p>NPWS has recommended an APPROPRIATE ASSESSMENT, based on its evaluation that the project, alone or in combination with other plans or projects, may have a significant effect on the NATURA site. The Forest Service concurs with this position. APPROPRIATE ASSESSMENT is therefore required.</p> <p><u>OR</u></p> <p>There is insufficient information to form a sound judgement regarding whether or not the possibility of a significant effect arises. APPROPRIATE ASSESSMENT is therefore required.</p> <p><u>OR</u></p> <p>The SCREENING process has become overly complicated. APPROPRIATE ASSESSMENT is therefore required.</p>	<p>If SCREENING Conclusion 3 is reached, the project requires an APPROPRIATE ASSESSMENT.</p> <p>The Forest Service stipulates the submission by the applicant of an NATURA Impact Statement (NIS). The Forest Service may specify the following to provide direction to the applicant regarding the required focus of the NIS:</p> <ul style="list-style-type: none"> ➤ the name and site code of the relevant NATURA site(s), ➤ the qualifying interest(s) of particular concern, and ➤ the particular aspect(s) of the proposed project that gives rise to the concern. <p>Responses from consultations undertaken, which the Forest Service deems may be relevant to the compilation of the NIS, may also be included.</p> <p>The ‘Further Information Require’ letter from the Forest Service, stipulating the need for a NIS, will also set a date for submission of the NIS. Typically a 12-month period applies, to enable any ecological surveying needed. Unless otherwise agreed, if the applicant does not furnish the NIS within the specified time frame, the application will be deemed to be withdrawn.</p> <p>Forest Service will also notify referral bodies and any person who made submissions or observations in relation to the application, of the above outcome of the SCREENING process.</p>
<p>SCREENING Conclusion 4: The project is incompatible with the NATURA site, in that any mitigation measure that has been (or may be) proposed will not be sufficient to prevent a significant effect. Project cannot proceed.</p>	<p>Approval is refused, nullifying the requirement for an APPROPRIATE ASSESSMENT. Applicant notified accordingly.</p> <p>For example, in the case of an afforestation project within a SAC bog, drainage may be an unavoidable necessity in order to establish trees, but would affect the habitat itself. Therefore, SCREENING Conclusion 4 applies.</p>

agent(s), and includes a framework setting out the headings to be addressed in a typical NIS for a forestry project.

If the NIS is incomplete, deficient, of poor quality, scientifically vague, anecdotal or unclear, the Forest Service will seek resubmission or may reach APPROPRIATE ASSESSMENT Conclusion 3 (see Table 20.2), whereby insufficient information will lead to refusal.

20.4 APPROPRIATE ASSESSMENT

The Forest Service commences the APPROPRIATE ASSESSMENT after the NIS has been received. The APPROPRIATE ASSESSMENT is undertaken principally:

- to evaluate whether or not (where previously uncertain) the project, individually or in combination with any other plan or project, will have a significant effect on a NATURA site, and
- the nature of the possible significant effect, and the effectiveness (or otherwise) of any proposed mitigation measure designed to avoid the risk of the significant effect occurring. (Note, mitigation measures must not include measures designed to compensate for an adverse impact.)

APPROPRIATE ASSESSMENT is undertaken after the Forest Service receives the NIS, and is based on:

- the NIS itself and any required supplementary information submitted (if information provided is inadequate for the purpose of completing the APPROPRIATE ASSESSMENT, further information may be sought from the applicant),
- any other plans or projects that may, in combination with the project, adversely affect the integrity of the NATURA site,
- any information or advice obtained by the Forest Service,
- any written submissions or observations made to the Forest Service in relation to the application, and
- any other relevant information.

At the end of its APPROPRIATE ASSESSMENT, the Forest Service reaches one of three possible conclusions, as set out in Table 20.2.

20.5 Imperative reasons of overriding public interest

Section 43 of the Birds & Habitats Regulations provides a mechanism for a project to proceed even if there is a possibility of a significant effect on a NATURA site, in cases where an 'imperative reason of overriding public interest' exists. However, the mechanism will not generally apply to forestry, due to the 'high threshold' regarding justification (e.g. human health, public safety) and the unlikelihood of a situation arising within the forestry context whereby no alternative solution (including the option of not proceeding with the project) will exist.

Table 20.2 APPROPRIATE ASSESSMENT conclusions and outcomes.

APPROPRIATE ASSESSMENT conclusion	Outcome
<p>APPROPRIATE ASSESSMENT Conclusion 1: The project, both alone and in combination with other plans or projects, will not have a significant effect on the NATURA site.</p> <p>The project described in the NIS (together with any mitigation measures detailed) will not have a significant effect on the conservation objectives of the NATURA site.</p>	<p>Approval may issue (from an AAP perspective).</p> <p>APPROPRIATE ASSESSMENT Conclusion 1 applies where the proposed mitigation measures, and / or other specified measures, are deemed adequate to prevent any significant effect, and where these are attached as a condition of approval.</p>
<p>APPROPRIATE ASSESSMENT Conclusion 2: The project will have a significant effect on the NATURA site, even if any proposed mitigation measures are implemented. Project cannot proceed.</p>	<p>The project may not proceed, and approval may not issue. Applicant notified accordingly.</p>
<p>APPROPRIATE ASSESSMENT Conclusion 3: There is insufficient information or evidence to enable the Forest Service to conclude that the project will not have a significant effect on the NATURA site. A significant effect must therefore be assumed. Project cannot proceed.</p>	<p>The project may not proceed, and approval may not issue. Applicant notified accordingly.</p>

20.6 Concluding the AAP

The AAP must have fully run its course and a conclusion reached (at either SCREENING stage or (if required) at APPROPRIATE ASSESSMENT stage), before any final decision can be taken regarding a particular application. *In all cases, the Forest Service can only issue approval if it is satisfied that the project – either alone or in combination with others – will not have a significant effect of the NATURA site(s).*

Furthermore, the Forest Service cannot grant any consent for a project with conditions attached purporting to:

- permit the deferral of the collection of information required for a SCREENING or for an APPROPRIATE ASSESSMENT, or the completion of a SCREENING or an APPROPRIATE ASSESSMENT until after the consent has been given,
- accept an incomplete NATURA Impact Statement, or
- permit or facilitate the avoidance of compliance with the conditions set out in Article 6(4) of the Habitats Directive.

Note, any decision arising from the AAP is subject to the normal Forest Service Appeals Process (see Section 19.5).

20.7 Post-consent

Note that a post-approval change to the project may invalidate the outcome of the AAP. As per standard requirements, any proposed change to the project at the post-approval stage must be agreed with the Forest Service. This includes reductions in the area planted, as the excluded area may have constituted a component of the project imparting its compatibility with the NATURA site.

Under 44(2) of the Birds & Habitats Regulations 2011, the Forest Service can at any time vary the conditions attached to any approval, or revoke approval, if it considers that the conditions attached have been breached or if the continuation of such consent would be liable to destroy, or significantly alter, damage or interfere with the qualifying interests of a NATURA site. In such situations, the Forest Service will communicate in writing its determination to the persons concerned.

20.8 Public inspection

The Forest Service will make available for public inspection any decision it makes under the AAP in relation to a project, and reasons for that decision. However, the following will be excluded: information identified by the applicant as being of a commercially sensitive nature; and information that could pose a risk to the conservation of protected species or habitats.

Section 21

Interaction of Afforestation Scheme with Agriculture Schemes

21.1 REPS (Rural Environmental Protection Scheme)

The REPS Scheme was closed to new applicants in April 2009. However, a significant number of applicants successfully entered REPS 4 whose participation in that scheme will continue up to the end of 2015. The Forest Environment Protection Scheme (FEPS) is now closed to new applicants but the scheme will continue for existing FEPS applicants for the term of their FEPS contracts and for as long as they remain in REPS. If the site proposed for afforestation contains a current or former REPS habitat (i.e. if Qu.2.8, page 3 of the Form 1 is ticked 'yes'), the Registered Forester must state the type of habitat.

21.2 GLAS (Green, Low-Carbon, Agri-Environment Scheme)

GLAS is the agri-environment scheme, which is part of the Rural Development Programme 2014-2020. Unlike REPS and FEPS, there will be no additional payments where a landowner plants land and subsequently joins GLAS. Further information on this scheme can be obtained by contacting the Department of Agriculture, Food & the Marine, Johnstown Castle, Co. Wexford.

21.3 Early Retirement Scheme (ERS)

The Early Retirement Scheme (ERS) is now closed to new entrants. However, the following general rules apply to participants who retired under that scheme.

A transferor (i.e. the farmer retiring under ERS) who already had forest land planted before retiring from farming and is entitled to a forestry premium may retain that land and continue to receive the premium. If this forest land is transferred with the holding, the transferee who obtains it can apply for the premium (see Section 3.7 for further information on change of ownership).

The question also arises as to whether an individual involved in ERS can plant under the new Forestry Programme. First of all, it is important to remember that when a farmer is approved under the Early Retirement Scheme, s/he agrees to stop all agricultural activity definitively, i.e. s/he will not resume agricultural activity at any future date. To be compliant with the scheme, his transferee would have to be actively farming the pension lands. Therefore, the transferor could not plant the land if this was the case. However, if s/he is finished in ERS, s/he can plant the land under the Afforestation Scheme. This would typically occur when the land has been leased and returns to the transferor. In this situation, no penalties would occur in relation to the Early Retirement Scheme.

Furthermore, if the ERS pensioner during the pension period, acquires additional non-pension lands, s/he can plant those additional non-pension lands.

21.4 Basic Payment Scheme

Following changes to EU Regulations governing the Single Payment System (now called the 'Basic Payment Scheme'), land which was afforested since 2009 is eligible to draw down a SPS payment provided that the afforested land meets the following requirements:

- the land to be afforested was declared on a 2008 SPS application form,
- the applicant who declared that land on a 2008 SPS application form was paid under the 2008 Single Payment Scheme,
- the land to be afforested was eligible to draw down an SPS payment in 2008.

Applicants who afforest part of their holding from 2009 onwards, and who wish to benefit from the Basic Payment, must retain at least 10% of the eligible hectares declared in 2008 (by the applicant or their predecessor) in an agricultural activity subject to a minimum of 3 hectares.

If the applicant is a new entrant into farming, the minimum area to be retained in an agricultural activity will be fixed by the Department on a case-by-case basis. Applicants who wish to benefit from the Basic Payment on afforested land must be the person or persons in joint management or in receipt of an afforestation premium. This applies to members of the same family. The afforested land must meet all the requirements of the Afforestation Scheme. Eligible forestry parcels that are declared on BPS applications to activate entitlements will also be subject to cross-compliance requirements.

APPENDICES

Appendix 1: Afforestation Scheme Grant & Premium Rates

Table 1 Fixed grant rates applicable from 1st January 2015.

Grant and Premium Category (GPC)		1st Grant €/ ha	2nd Grant €/ ha	Total Grant €/ ha	Additional Fencing Allocation €/ ha (IS436)	Alternative Fencing Allocation €/ ha (Non-IS436)	Total Available Funding €/ ha
1.	Unenclosed	1,575	525	2,100	500	350	2,600
2.	Sitka Spruce / Lodgepole Pine	2,310	735	3,045	500	350	3,545
3.	10% Diverse Conifer	2,360	790	3,150	500	350	3,650
4.	Diverse Conifer	2,625	840	3,465	500	350	3,965
5.	Broadleaf	3,780	1,155	4,935	500	450	5,435
6.	Oak	3,990	1,260	5,250	500	450	5,750
7.	Beech	3,990	1,260	5,250	500	450	5,750
8.	Alder	2,520	840	3,360	500	450	3,860
9.	Native Woodland Est. (Scenario 1-3)	3,990	1,260	5,250	500	450	5,750
10.	Native Woodland Est. (Scenario 4)	3,780	1,155	4,935	500	450	5,435
11.	Agro-Forestry	2,960	990	3,950	500	450	4,450
12a.	Forestry-for-Fibre	1,460	490	1,950	500	450	2,450
12b.	Forestry-for-Fibre (Aspen)	1,245	420	1,665	500	450	2,165

Table 2 Fencing grant rates under the Afforestation Grant & Premium Scheme.

Fence Type	€ / m (IS436)	€ / m (Non-IS436)	IS 436 (120 m / ha cap)	Non IS436 (100 m / ha cap)
Stock	4.20	3.50	Maximum €500 / ha at plantation level	Maximum €350 / ha for GPCs 1-4, 12a and 12b; and €450 / ha for GPCs 5-11
Stock / Sheep	5.40	4.65		
Stock / Rabbit	6.30	5.55		
Upgrade to Deer	7.00	6.50	€975 / ha	€975 / ha
Deer	16.25	12.00	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 broadleaves and species in the categories GPC 4-11	
Deer/ Rabbit	16.25 New deer fencing capped at €1,950 / ha	12.00 New deer fencing capped at €1,800 / 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 plantation multiplied by 120 metres, where IS436 is used exclusively irrespective of fence type erected. Maximum fencing cap of €40,000 per plantation. Where non-IS436 deer fencing is used, a cap of 150 metres / ha will apply to the deer fencing element, capped at €1,800 / ha.				

Table 3 Premium rates under the Afforestation Grant & Premium Scheme.

Grant and Premium Category (GPC)		Annual premium / ha	Duration (years)
1.	Unenclosed	€185	15
2.	Sitka Spruce / Lodgepole Pine	€440	15
3.	10% Diverse Conifer	€510	15
4.	Diverse Conifer	€560	15
5.	Broadleaf	€575	15
6.	Oak	€615	15
7.	Beech	€615	15
8.	Alder	€575	15
9.	Native Woodland Est. (Scenario 1-3)	€635	15
10.	Native Woodland Est. (Scenario 4)	€635	15
11.	Agro-Forestry	€260	5
12a.	Forestry-for-Fibre	€180	10
12b.	Forestry-for-Fibre (Aspen)	€180	10

Appendix 2: Certification of Land Transfer

To: Minister for Agriculture, Food & the Marine
Forest Service

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 owners 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 Forest Service 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 Stamp

Appendix 3: 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 Forest Service 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)

Name of Solicitor _____

Address : _____

Solicitor's stamp

Appendix 4: 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 plantation

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 plantations in the State are protected under the Forestry Act 1946.

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 plantation 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

Appendix 5: 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 Forest Service 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 _____

Appendix 6: 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 Forest Service 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 _____

Appendix 7: 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" or "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."*

Grant Mandate Form

Forest Service Contract No.

WHEREAS I/We _____ (Name of Applicant)

Of _____

Have applied to the Department of Agriculture, Food and the Marine (Forest Service) 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 (Forest Service) (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 (Forest Service) 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 (Forest Service) to pay the afforestation / 2nd Instalment (*delete as appropriate*) grant monies for the above development direct to:

BANK ACCOUNT NO: _____

BANK NAME: _____

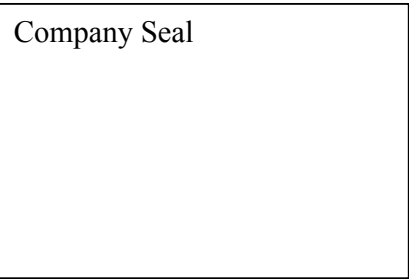
BANK SORT CODE: _____

BaBA _____

SORT _____

Signed: _____ Date: _____
(To be signed by the Company Secretary)

Name(Block Capitals) _____



Appendix 8: 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

'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
Fertilise
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 rotation of maximum mean annual increment and is equivalent to the rotation of maximum volume production.
2. 'Standard' is the rotation age specified for different species by the Forest Service in the late 1970s. It is the age of MMAI less 20% for Sitka spruce and Norway spruce, the age of MMAI less 30% for Lodgepole pine, and the age of MMAI for all other conifer species. These rotations are an approximation of the final rotation.
3. 'Reduced' is a rotation less than standard (-2 years or more) and is usually prescribed due to concerns about crop stability.
4. 'Technical' is a technical rotation 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 m³ 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 await 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. However, it classifies the plot / sub-compartment as being under a continuous thinning regime.

'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 / sufficient roading to allow the harvesting to take place. There are two options on the drop-down menu:

1. 'Adequate' means that there is sufficient 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 a 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.

Appendix 9: Management Plan Year 12 to Rotation End

An online Management Plan covering the period from Year 12 to the end of the rotation, will be developed by the Department of Agriculture, Food & the Marine following recommendations from the COFORD Forest Management Plan Working Group.

Existing management plan templates available on the Forest Service website (see www.agriculture.gov.ie/media/migration/forestry/grantandpremiumschemes/2015/) should be used until the online system outlined above is in place.

Appendix 10: Scheduled Venues to View Record of Monuments and Places

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

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

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

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

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

National Monuments Service
Department of Arts, Heritage & the Gaeltacht
Room G50
Custom House
Dublin 1
E-mail nationalmonuments@ahg.gov.ie
Tel. (01) 888 2178
Fax (01) 888 2689
Web www.archaeology.ie

Appendix 11: Acid Sensitivity Protocol

Overview

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

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

(Note, water sampling is not required for afforestation applications within acid sensitive areas that comprise solely of Native Woodland Establishment GPC 9 and / or GPC 10 – see note below.)

Table 1 Possible outcomes arising from the Acid Sensitivity Protocol.

<i>Where the minimum alkalinity of any one of the four samples taken is...</i>	<i>Outcome</i>
<8 mg CaCO ₃ l ⁻¹	No afforestation permitted.
8–15mg CaCO ₃ l ⁻¹	Full, partial or no afforestation <u>may</u> be approved, following discussion and agreement between the Forest Service, the Environmental Protection Agency and Inland Fisheries Ireland (formerly the Regional Fisheries Board).
>15 mg CaCO ₃ l ⁻¹	Afforestation may be approved.

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

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 Forest Service 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 two full working days prior to sampling, stating the proposed location and the proposed date and

time of sampling. The Forest Service may take additional samples to compare with alkalinity results submitted. Water samples submitted without prior notification will not be accepted and repeat sampling will be required. The Registered Forester must also keep a record of the date and time at which notification was made to the Forestry Inspector, and a copy sent to the Forestry Inspector.

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

NWS Est. GPCs 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 Native Woodland Establishment Grant & Premium Categories (GPCs) 9 and 10.

This amendment to the protocol, agreed with the Environmental Protection Agency (EPA) (see Forest Service Circular 4 of 2013), is limited to applications that comprise solely of NWS Est. GPC 9 and / or GPC 10 (plus ABEs, as required) on enclosed / improved land only. Strict adherence to minimum site disturbance will apply during planting and establishment (as standard under GPC 9 and GPC 10), with the additional requirement that no fertiliser application takes place.

As set out in the Forest Service document *Native Woodland Establishment GPC9 & GPC10: Silvicultural Standards (September 2015)*, any site proposed for GPC 9 and GPC 10 must be capable of supporting the vigorous growth and 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 GPC 9 and GPC 10 should not be submitted under these Grant & Premium Categories.*

Sampling procedure for rivers and streams

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

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

- Coolbox.

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

- sufficient information regarding the location of the afforestation site, to ensure that samples are taken from the correct watercourse(s);
- a map of the afforestation site illustrating all watercourse(s) within and / or adjoining the site (the map must be of an adequate scale and detail to ensure easy direction to the exact location where water sampling is to be carried out);
- an adequate number of new sampling bottles, including some spares; and
- an adequate number of copies of the 1-page Water Sampling Field Sheet (see following page) to record details of each sampling site.

Furthermore, the sampler must also:

- have informed the landowner of his / her intention to undertake water sampling, and the purpose of that sampling;
- have secured the permission of the landowner to enter onto the land; and
- have contacted the Forestry Inspector at least two full working days prior to sampling, to give him / her the opportunity to undertake parallel water sampling; and
- be familiar with all 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;
- confirm with the landowner the area of the proposed plantation; and
- advise the landowner of the sampler's approximate time of return.

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

- Observe the area of the proposed afforestation, compare with the map and identify the sampling locations;
- Proceed to the first sampling location.
- Record the co-ordinates with a GPS unit, if available. Otherwise, mark clearly on the map.
- Using a permanent water-resistant marker, label a sample bottle with the name of the stream / river, sample number and location, and the date and time.
- Using a plastic bucket (and a length of rope to lower the bucket into the river, where necessary), take up water. Rinse the bucket and empty it. Repeat this procedure at least twice, more times when necessary.
- Facing upstream and standing mid-channel (where the stream / river depth is shallow,

i.e. <50 cm deep; otherwise, sample from the bankside or from a bridge, if suitably located), lower the bucket into the water and extract a sample of the water. Make sure that the water flowing into bucket does not contain any sediment 'kicked up' by the sampler's feet. The sample should be taken upstream of the point at which the sampler enters the watercourse.

- Rinse the 2 litre sample bottle and the funnel thoroughly at least three times with the water from the bucket, then fill the bottle with the water remaining in the bucket. Ensure that the bottle is filled up, leaving just 1-2 cm headroom.
- Place the lid tightly on the bottle. Squeeze the bottle to ensure that there are no leaks present.
- Recheck that the labelling on the bottle is correct.
- Place the sample bottle into its carrier crate.
- Each time a water sample is taken, a Water Sampling Field Sheet should be fully completed (see following page). Note on the form the name of the stream / river (if not name is apparent, highlight the watercourse clearly on the map), the sample number, the location (GPS coordinates, preferably), and the date and time that the sample was taken.
- Between sampling and dispatch to the laboratory, all samples must be kept cool and in the dark. Do not leave samples in the car / van where they are liable to become warm. Dispatch the samples, together with the corresponding Water Sampling Field Sheet(s), to an appropriate laboratory (see below) for immediate analysis.

At all times, use common sense.

- Apply appropriate precautions to ensure personal safety.
- Be mindful not to contaminate the sample by allowing sediment or any material other than the water flowing in the stream / river, to enter into the sampling bucket and the sample bottle.
- No smoking is allowed on site.
- At all times, avoid bodily contact with water intended for analysis.

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., Dunrinc, 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 exercises, and accredited by the Irish National Accreditation Board (INAB) and / or the United Kingdom Accreditation Service (UKAS) to undertake testing in compliance with the International Standard ISO / IEC 17025:2005.

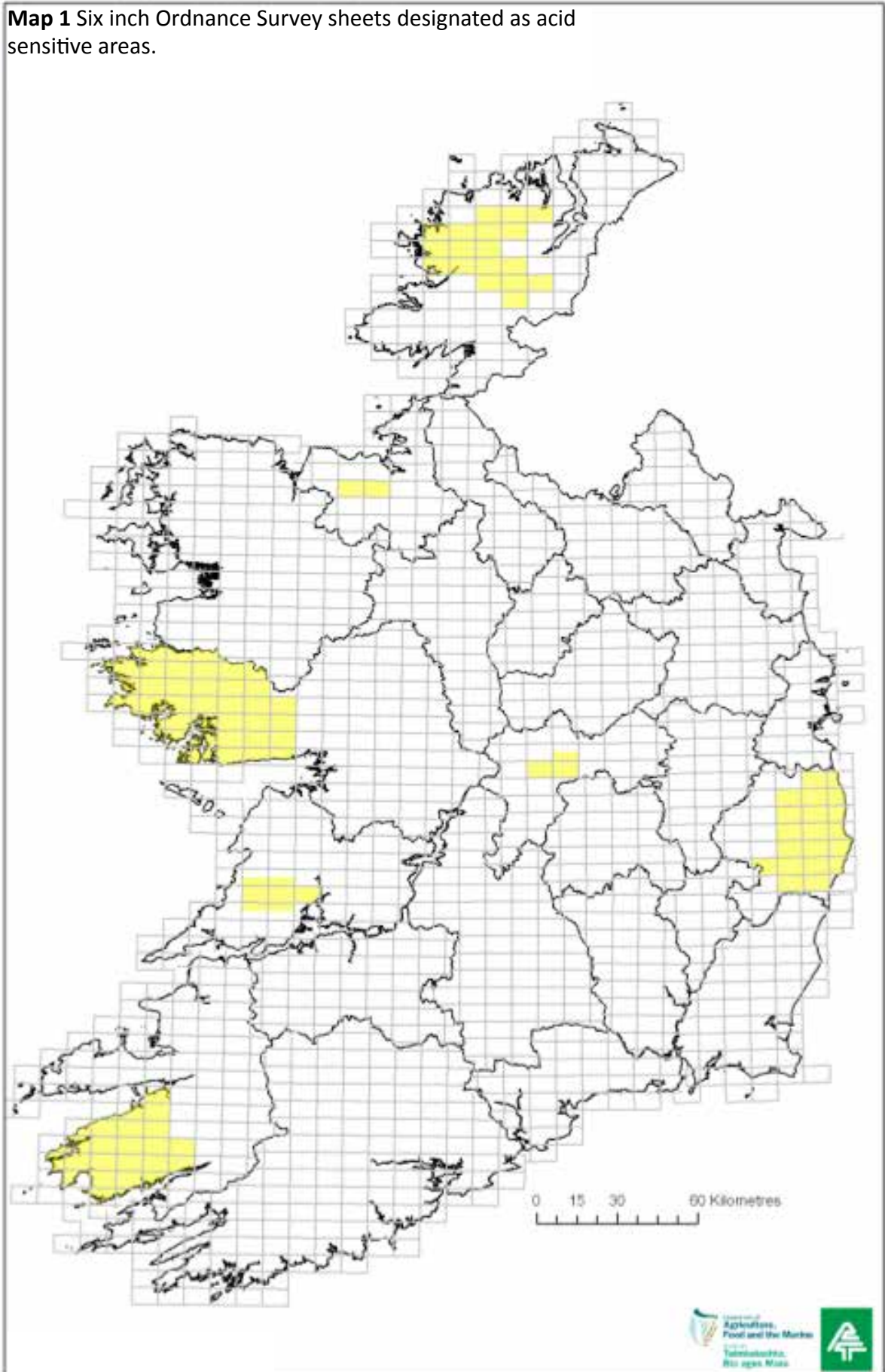
Any laboratory used must be independent of the applicant.

Six inch Ordnance Survey sheets designated as being acid sensitive areas

All ranges listed are inclusive.

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

Map 1 Six inch Ordnance Survey sheets designated as acid sensitive areas.



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 Forest Service and the then-Regional Fisheries Boards.

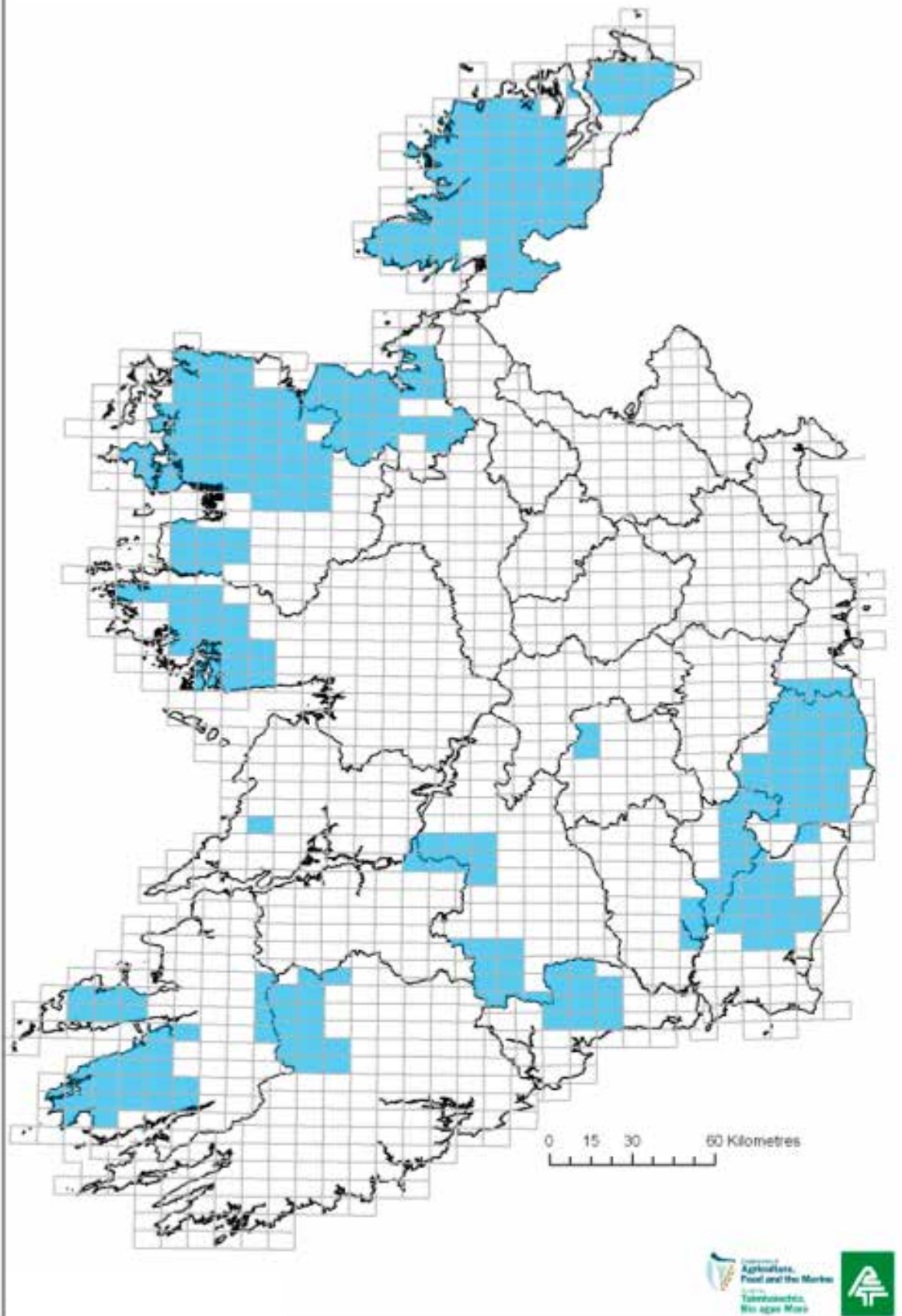
All ranges listed are inclusive.

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

Kerry	OS sheets	32
		34 to 36
		41
		43 to 45
		50
		56 to 57
		60
		62 to 64
		69 to 72
		78 to 83
		87 to 92
		96 to 98
Kilkenny	OS sheets	29
		33
		37
Laois	OS sheets	6
		11
Limerick	OS sheets	1
		6 to 8
Mayo	OS sheets	4 to 6
		11 to 13
		18 to 22
		25 to 32
		34 to 39
		42 to 49
		54 to 61
		65 to 71
		78 to 80
		86
		96 to 98
		106 to 108
115 to 116		
Sligo	OS sheets	8 to 25
		28 to 38
		40 to 42
Tipperary	OS sheets	31 to 33
		37 to 39
		44 to 45
		73 to 75
		80 to 81
		86 to 87
89 to 91		

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

Map 1 Six inch Ordnance Survey sheets designated as areas of potential fisheries sensitivity.



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 olive to pale olive colour, ranging through 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 CaCO₃. 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.

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, if available.
- 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 CaCO₃.
- 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 Forest Service, 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 Forest Service 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 Forest Service.

The terms and conditions underpinning the Registration of Foresters and Forestry Companies (available from the Forest Service) 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 Forest Service 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 following forest soil laboratories offers a soil analysis service:

- Southern Scientific Services Ltd., Dunrinc, Killarney, Co. Kerry. Tel. (064) 6633922
- Forest, Environmental Research and Services (FERS) Ltd. Tel. (01) 2722675 / Website www.fersltd.ie
- James Hutton Institute, Craigiebuckler, Aberdeen AB15 8QH, Scotland. Tel. 0044 (0)844 928 5428 / Fax 0044 (0)844 928 5429

The Forest Service will accept other accredited laboratories which carry out analysis 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.

Contact details for specialist consultancy services on forest soils and nutrition are as follows:

- Dr. Michael Carey MSIF, Forestry & Management Consultant & Environment, Furze Lodge, Newcastle, Greystones, Co. Wicklow. Tel. (01) 2811217 / Mob. 087-2381060 / Fax (01) 2811217 / E-mail careyml@eircom.net
- Richard MacCarthy, BSc(For.), MSc(For.), PhD, Specialist Consultant in Forest Soils & Nutrition, 31 Sidmanton Gardens, Bray, Co. Wicklow. Tel. (01) 2867902 / Mob. 086-2481847 / Fax (01) 2811217 / E-mail richmac20@gmail.com

Other professional forest soils and nutrition experts can contact the Forest Service for inclusion in subsequent editions of this *Forestry Standards Manual*.

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 <input type="checkbox"/> Grass/Rush <input type="checkbox"/> Sedge rush <input type="checkbox"/> Bracken/Briar <input type="checkbox"/> Molinia/Calluna <input type="checkbox"/> Eriophorum/Heather <input type="checkbox"/> Other <input type="checkbox"/>	
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 <i>Calcareous</i> 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 <i>Calcareous</i> material Depth to <i>Calcareous</i> material (cm) 1__2__3__4__5__6__7__8__9__10__11__12__13__14__15__16__.		

ANY OTHER COMMENTS

--

SITE DETAILS: (TICK AS APPROPRIATE)

TOPOGRAPHY	SOIL TYPE	CALCAREOUS MATERIAL	EXPOSURE
Flat	Brown Earth	Shell Marl	Very exposed
Concave	Brown Podsollic	Marl (shells)	Mod. exposed
Convex	Podsoil	Till	Mod. sheltered
Bottom-slope	Podsoil+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
Class A <input type="checkbox"/>	Present <input type="checkbox"/> Potential <input type="checkbox"/>	Flooding <input type="checkbox"/>
Class B <input type="checkbox"/>	<input type="checkbox"/> Poor <input type="checkbox"/>	
Class C <input type="checkbox"/>	<input type="checkbox"/> Mod. <input type="checkbox"/>	
Class X <input type="checkbox"/>	<input type="checkbox"/> Good <input type="checkbox"/>	Frost <input type="checkbox"/>
	Out fall? Yes <input type="checkbox"/> No <input type="checkbox"/>	

***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	<input type="checkbox"/>
pH, Calcium, Magnesium, Potassium, Phosphorus, Free Lime test: For the purpose of determining growth problems and preparing fertiliser prescriptions	<input type="checkbox"/>
pH, Calcium, Magnesium, Potassium, Phosphorus, Free Lime Test, % Organic Matter: For the purpose of screening nursery soils.	<input type="checkbox"/>
Do you require a consultation report?	<input type="checkbox"/>

*Please note that a "topsoil" and a "subsoil" constitutes two samples.

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)

Appendix 16: Foliar Sampling Procedures

Foliage nutrient levels vary with the season 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 Forest Service, 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 Forest Service *Aerial Fertilisation Requirements*, issued with Forest Service 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 Forest Service.

FOLIAGE SAMPLING SITE/CROP FORM

ONE FORM TO BE COMPLETED PER SAMPLE

CLIENT DETAILS(client receiving report/Invoice)

Surname				
First Name (s)		Mr <input type="checkbox"/> Ms <input type="checkbox"/>		
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 <input type="checkbox"/> Pure <input type="checkbox"/>
Mixtures (if applicable)	1 st Species		2nd species		Intimate <input type="checkbox"/> Non Intimate <input type="checkbox"/>
Dominant Ground Vegetation	Grass <input type="checkbox"/> Grass/Rush <input type="checkbox"/> Sedge rush <input type="checkbox"/> Bracken/Briar <input type="checkbox"/> Molinia/Calluna <input type="checkbox"/> Eriophorum/Heather <input type="checkbox"/> Other <input type="checkbox"/>				
Aspect	N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W <input type="checkbox"/> Neutral <input type="checkbox"/>			Elevation (m)	

CROP HISTORY

Herbicide/fertiliser	Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	YEAR(S)		TYPE	
				RATE	
Suspected cause(s)					
Herbicide <input type="checkbox"/> Frost <input type="checkbox"/> Nutrient <input type="checkbox"/> Aphid <input type="checkbox"/>					
other (specify) <input type="checkbox"/> _____					

ANY COMMENTS

FILL IN AS APPROPRIATE, TICK AS APPROPRIATE

% of Crop Type	Thriftness (%)	*Site Fertility	Soil Type	Soil Drainage	Exposure
Pre-thicket <input type="checkbox"/>	Healthy <input type="checkbox"/>	A <input type="checkbox"/>	Brown Earth <input type="checkbox"/>	Poor <input type="checkbox"/>	V.exposed <input type="checkbox"/>
Thicket <input type="checkbox"/>	Mod. Unthrifty <input type="checkbox"/>	B <input type="checkbox"/>	Podsoil <input type="checkbox"/>	Moderate <input type="checkbox"/>	Mod. Exposed <input type="checkbox"/>
Irregular <input type="checkbox"/>	Very unthrifty <input type="checkbox"/>	C <input type="checkbox"/>	Gley <input type="checkbox"/>	Good <input type="checkbox"/>	Mod. Sheltered <input type="checkbox"/>
	Yellow <input type="checkbox"/>	X <input type="checkbox"/>	Alluvium <input type="checkbox"/>		Sheltered <input type="checkbox"/>
	Dead tops <input type="checkbox"/>		Lithosol <input type="checkbox"/>		Sheltered <input type="checkbox"/>
	In check <input type="checkbox"/>		Coastal sand <input type="checkbox"/>		
			Blanket peat <input type="checkbox"/>		
			Raised peat <input type="checkbox"/>		
			Fen peat <input type="checkbox"/>		
			Fen/Marl <input type="checkbox"/>		

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.

Appendix 17: Statement of Total Costs

There is no requirement to submit a statement of costs under the fixed grant scheme for the Afforestation Grant & Premium 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 Woodland 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.

Appendix 19: Standard Annuity Table

FACTORS FOR CALCULATING PRESENT VALUE OF AN ANNUITY

Years	Net Interest Rate Assumed %												
	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

Appendix 20: NATURA Impact Statement Guidance and Framework

Introduction

As required under the European Habitats Directive (Council Directive 92/43/EEC) and the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011), the Forest Service is required to undertake a SCREENING, and where necessary, an APPROPRIATE ASSESSMENT, in relation to applications for consent, grant approval and licensing for various forestry activities, in order to evaluate the project within the context of any potential impact on a NATURA site, i.e. a Special Area of Conservation (SAC) or a Special Protection Area (SPA).

As per the Forest Service Appropriate Assessment Procedure (AAP) (see Section 20 of this *Forestry Standards Manual*), on receipt of an application, the Forest Service initially undertakes SCREENING to determine if there is a possibility of the project – either individually or in combination with other plans or projects – having a significant effect on a NATURA site. SCREENING takes place as part of the normal evaluation of the application by the Forest Service, typically based on the submitted application form (e.g. afforestation pre-approval Form 1) and maps.

SCREENING may conclude that this possibility exists (i.e. SCREENING Conclusion 3). If so, the project must undergo an APPROPRIATE ASSESSMENT. In such cases, the applicant is required to submit a NATURA Impact Statement (NIS). On receipt of this document, the Forest Service then undertakes the APPROPRIATE ASSESSMENT of the project, based on the NIS and other information, and proceeds towards a final decision regarding consent, grant approval or licensing.

This appendix contains guidance to aid in the compilation of a NATURA Impact Statement by an applicant and her / his agent(s), and includes a framework setting out the headings to be addressed in a typical NIS for a forestry project. This appendix is not intended to be exhaustive in nature, and particular situations may arise whereby the NIS may need to address other aspects not included below.

What is a NATURA Impact Statement?

The NIS reports on a scientific examination of the proposed forestry project in the context of any relevant NATURA site(s) and associated qualifying interests and conservation objectives. The purpose of this scientific examination is to identify and characterise any possible impact the project may have (either individually or in combination with other plans and projects) on the qualifying interests of the NATURA site(s), and to identify and detail any proposed mitigation measures to avoid, reduce or offset the risk of these impacts.

The precautionary principle should be applied throughout the preparation of the NIS, i.e. the examination should demonstrate objectively, with supporting evidence, whether or not a significant effect will arise. If it cannot be demonstrated that no significant effect will arise, a significant effect must be assumed, and this must be reflected in the NIS.

The purpose of the NIS is to provide adequate information to enable the Forest Service to undertake and complete its APPROPRIATE ASSESSMENT of the project, based on best scientific

evidence and method. Therefore, the NIS must be produced in a scientifically competent, professional and objective manner.

How will I know a NIS is required?

Under 42(3) of the Birds & Habitats Regulations 2011, the Forest Service will notify the applicant in writing of the need to furnish an NIS, using the standard 'Further Information Required' letter routinely sent in relation to forestry applications. The letter will also set a deadline for submission of the NIS. Unless otherwise agreed, if the Applicant does not furnish the NIS within the specified period, the application will be deemed to be withdrawn.

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

This appendix (see following pages) sets out a framework of headings to be addressed in a typical NIS for a forestry project. Where two or more NATURA sites are deemed relevant, each site must be dealt with separately throughout the NIS.

Please note the following:

- Contents are likely to vary greatly between different NISs, reflecting the variety and combination of issues that can arise regarding the project type, the NATURA site, the project's spatial relationship to it, the qualifying interests involved, etc. While the framework in this appendix sets out typical headings, other sections may need to be added, as required. Also, in certain situations, the NIS may need to adhere to some other structure or methodology (e.g. see Appendix 21 in relation to Hen Harrier and potential disturbance), and this will be set out by the Forest Service in its 'Further Information Required' letter specifying the NIS.
- Further direction regarding the contents of the NIS will be contained in the Forest Service 'Further Information Required' letter. This letter will set out the reason for the determination that an APPROPRIATE ASSESSMENT is required, and the particular NATURA site or sites in question. The letter may also provide direction regarding issues to be addressed, and may specify particular information or data to be included, which the Forest Service considers necessary to enable it to carry out its APPROPRIATE ASSESSMENT. Relevant letters from referral bodies (National Parks & Wildlife Service, Inland Fisheries Ireland, etc.) containing further direction, will also be provided.
- Regardless of any direction that may be given, either in this appendix or in the 'Further Information Required' letter from the Forest Service, it is the responsibility of the applicant to ensure that the scientific examination and subsequent NIS address the issues necessary to enable the Forest Service to complete its APPROPRIATE ASSESSMENT. If the information provided is inadequate for the purpose of completing the APPROPRIATE ASSESSMENT, further information may be sought from the applicant. Also note that, in relation to a NIS, it is an offence under Regulation 62 of the Birds & Habitats Regulations 2011 to supply false information or to withhold or fail to divulge information or data likely to be relevant to the APPROPRIATE ASSESSMENT.
- It is the responsibility of the proponent of the project to undertake the scientific examination and to prepare the NIS for submission to the Forest Service. The cost of this process is borne by the applicant, as the proponent of the project.

Who prepares the NIS?

Professional input is required to undertake the necessary scientific examination of the project and to prepare the NIS. Generally, where applicable, the Registered Forester associated with the original application will oversee the process. However, other relevant expertise must also be engaged, as required.

In most cases, as habitat and species evaluation is central to the process, a person with the requisite ecological expertise and experience will be required to undertake the necessary ecological surveys, research and analysis. This input must be supplemented by additional expertise and experience (e.g. geology, hydrology, engineering, planning), as required.

What level of ecological input is needed?

Ecological expertise within the appropriate field (botany, ornithology, etc.) will usually be required to undertake the necessary scientific examination of the project (surveys, research and analysis) and to prepare the NIS. Generally, an ecological survey is needed to assess whether or not a species or habitat is present, and to what extent. The type of survey applicable will vary greatly, from a general habitat walkover survey to a more detailed field survey. The following are some examples of various permutations that may arise. (Note, these examples are given for illustrative purposes only, and ecological expertise will inform decisions regarding the type of survey required in relation to any particular project.)

- **Ex situ:** Project located outside a NATURA site. General habitat walkover survey undertaken to assess whether or not the project area contains a particular habitat(s) utilised by a species listed as a qualifying interest of the NATURA site. For example, part or all of the project area may contain a particular habitat used for resting and grazing by a wintering flock of a particular bird species listed as a qualifying interest of a nearby SPA.
- **Ex situ:** Project located outside of a NATURA site. Site assessment undertaken to evaluate whether or not the project area has a functional connection with the NATURA site. For example, drainage associated with the project may affect an adjoining designated bog habitat. Such assessments often require some level of hydrological expertise.
- **In situ:** Project located within a NATURA site. Ecological survey (ranging from a habitat walkover survey to a detailed field survey) undertaken to determine whether or not a particular habitat or species listed as a qualifying interest of the NATURA site is present, likely to be present, or absent within the project area. For example, if a project lies within a SAC with a terrestrial qualifying interest such as wet heath, a habitat survey will be necessary to identify whether or not that habitat occurs within the project area. Similarly, if a project is within a SAC with a terrestrial qualifying interest such as Desmoulin's whorl snail (*Vertigo moulinsiana*), a species survey or a species habitat survey will be required to determine if the species occurs or has the potential to occur within the project area. Also, any other effects (e.g. on water quality or hydrological patterns) must be assessed.

Typically, a detailed field survey is required if the project is located within a NATURA site and where the qualifying interests include terrestrial habitats and species. In general, a detailed field survey is not necessary in cases where all of the qualifying interests are aquatic in

nature. In such cases, the focus of the scientific examination and subsequent NIS should be on minimising or eliminating any potential impacts (e.g. acidification, sedimentation, nutrient enrichment, shading, hydrology) on the aquatic habitat or species. Some aquatic species, e.g. Freshwater Pearl Mussel, are extremely vulnerable to changes in water chemistry, siltation and hydrological patterns.

Regarding the terrestrial qualifying interests of a NATURA site, the nature of these qualifying interests will determine the type of survey(s) required. Given the range of Annex habitats and species, it is not possible to outline the appropriate survey method(s) for each. Some Annex II terrestrial species require specialist expertise or may not be present or easily observed during the ecological survey. In such cases, the ecological survey may focus on identifying suitable habitat for the species. If the habitat is present, it may be assumed that the species is present, and appropriate mitigation should be proposed.

Note, relevant data from recent or ongoing surveys undertaken by various bodies may be available, thereby possibly reducing the need for direct survey work during the preparation of the NIS.

Relevant sources of information include the following:

- The qualifying interests and conservation objectives for SACs and SPAs are available on the National Parks & Wildlife Service (NPWS) website www.npws.ie/protectedsites/
- Various sources of information on habitats and species are available from the National Biodiversity Data Centre (www.biodiversityireland.ie/).
- The most up-to-date records of protected species may be requested from the NPWS using a data request form (available to download at www.npws.ie/media/npws/publications/Data%20request%20form.doc). Local records may be available through the local NPWS Office.

NATURA Impact Statement framework

This section presents a framework of headings to be addressed in a typical NIS for a forestry project, together with explanatory notes (*italicised text*). Also see the above Section 'What is the likely content of a NIS, who submits it, and who pays?'

Forest Service file reference number (CN 1234, FL 5678, etc.)

Applicant's name & address

Project description (afforestation, roading, thinning, clearfelling / replanting, aerial fertilisation, etc.)

Project location (Townland, DED, County)

Project size (area, length, etc.)

State the name and site code of the relevant NATURA site(s) (as identified by the Forest Service) and list the qualifying interests and conservation objectives for that site(s).

- The Forest Service letter specifying the NIS will list the relevant NATURA site(s). The qualifying interests and conservation objectives for SACs and SPAs are available on the National Parks & Wildlife Service (NPWS) website www.npws.ie/protectedsites/

Set out any additional direction provided by the Forest Service regarding issues to be addressed by the NIS.

- *This may include information contained in letters received from referral bodies such as NPWS and Inland Fisheries Ireland in relation to the project.*

Describe and summarise the results of any ecological survey undertaken to assess the presence or otherwise of any particular species or habitat on the site of the proposed project.

- *As an appendix in the NIS, include full details of the survey aims and scope, methodology and timing, and results, together with an appropriately-scaled survey map.*

For each qualifying interest of the NATURA site, list elements of the project that may create an impact, and describe the nature and likely significance of that impact.

- *Consider direct and indirect impacts, both during the initial implementation stage (e.g. afforestation, road construction, felling / replanting) and over the long term (e.g. the entire forest cycle, including future thinning, clearfelling and replanting, must be considered in relation to an afforestation proposal).*
- *Potential impacts include sedimentation, nutrient enrichment, acidification, disturbance, changes in hydrological patterns, shading, habitat degradation and loss, etc.*

Describe potential impacts on the qualifying interests of the NATURA site arising from the implementation of the project in combination with other forestry and non-forestry plans and projects within a relevant area. Detail the nature and likely significance of these cumulative impacts.

- *Consider both short and long term impacts.*
- *The 'relevant area' is that area within which activities may affect the qualifying interests, and will depend on the nature of the qualifying interests. For example, in the case of aquatic habitats and species, the relevant area is defined by the relevant waterbody (-ies) (i.e. sub-catchment).*
- *Non-forestry plans and projects include windfarms, housing development, quarries, water treatment plants, etc.*

Detail any mitigation measures proposed for incorporation into the project, to avoid the risk of the potential impacts described. Include specifications, diagrams and maps, as appropriate.

- *Mitigation measures are measures aimed at avoiding the risk of a significant effect arising from the project before, during or after its completion or implementation. Mitigation measures include specific measures not covered in the mandatory Forest Service environmental 'guidelines' and requirements (including those relating to otter, Kerry slug and Freshwater Pearl Mussel). Mitigation measures must not include measures designed to compensate for an adverse impact.*
- *Summarise the main findings of this scientific examination of the project within the context of the relevant NATURA site(s).*
- *The precautionary principle should be applied, i.e. the examination should demonstrate*

objectively, with supporting evidence, whether or not a significant effect will arise. If it cannot be demonstrated that no significant effect will arise, a significant effect must be assumed, and this must be reflected.

Contributing experts

- State the name, contact details and relevant professional qualifications / affiliations of contributing experts involved in the compilation of the NIS, and describe the scope of their involvement.

Include the following declaration, signed and dated by the applicant, the Registered Forester, and the contributing expert(s): “I / We declare that this NATURA Impact Statement accurately reports on the scientific examination of the project within the context of any relevant NATURA site(s), and on the findings of that scientific examination.”

- *Note, under Regulation 62 of the Birds & Habitats Regulations 2011, it is an offence to supply false information or to withhold or fail to divulge information or data likely to be relevant to the decision of the Forest Service.*

List references for any guidance documents and survey methodologies used during the compilation of the NIS, together with any other sources of information used (e.g. results from previous studies).

Appendices

- *Include any relevant maps, photographs, survey results, etc. integral to this NIS. Ensure clear cross-referencing between the main body of the NIS and the relevant appendix. Note, all maps used must be of an appropriate scale and follow relevant conventions set out in Section 18 of the Forestry Standards Manual.*

Where can I go for further information?

The following documents provide further information relevant to the compilation of a NATURA impact Statement:

- European Commission. 2001. Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg.
- Smith, G.F., O’Donoghue, P., O’Hora, K. & Delaney, E. 2011. Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council, Ireland. Available at www.heritagecouncil.ie
- Fossitt, J. 2000. A Guide to Habitats in Ireland. The Heritage Council, Ireland. Available at www.heritagecouncil.ie
- National Roads Authority. Undated. Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes. The National Roads Authority, St. Martin’s House, Waterloo Road, Dublin.

Appendix 21

AAP and Hen Harrier

Introduction

As required under the European Habitats Directive (Council Directive 92/43/EEC) and the European Communities (Birds & Natural Habitats) Regulations 2011 (S.I. 477 of 2011), the Forest Service is required to undertake a SCREENING, and where necessary, an APPROPRIATE ASSESSMENT, in relation to applications for consent, grant approval and licensing for various forestry activities, in order to evaluate the project within the context of any potential impact on a NATURA site. See Section 20 for details of the Forest Service Appropriate Assessment Procedure (AAP).

Specific procedures apply in relation to applications for consent / grant approval / licences involving certain forestry operations which have the potential to disturb Hen Harrier breeding activity within and surrounding SPAs designated for breeding Hen Harrier. These procedures, agreed with National Parks & Wildlife Service (NPWS), focus on disturbance operations within so-called 'Red Areas' during the Hen Harrier breeding season, 1st April to 15th August, inclusive.

Red areas are 1.2 km radius areas centred on known Hen Harrier nesting areas. The 1.2 km radius is based on half the maximum separation distance of annual nest locations within territories observed in the Slieve Aughty Mountains within the 2005-2010 period, plus an additional 500 metre buffer. Depending on the location of their centre point, Red Areas may encapsulate land outside the boundary of the SPA. The remainder of the SPA is referred to as 'Green Areas'. New Red Areas may be generated from time-to-time, as new Hen Harrier nesting sites are identified, either individually or as a result of a regional or national survey.

A potential disturbance operation is a forestry operation which has the potential, through excessive noise, vibration, mechanical movement, etc., to disturb the breeding activity of Hen Harriers. Potential disturbance operations include:

- timber felling (thinning, clearfell)
- timber extraction to roadside
- timber loading at roadside
- aerial fertilisation
- mechanical cultivation for both afforestation and reforestation
- forest road construction (and associated developments)
- the driving of fencing posts
- any other operation(s) the Forest Service may deem as potentially creating disturbance

Scenarios

Table 1 sets out the various scenarios that apply under these procedures to felling licence applications. Also described are the typical results of the Forest Service AAP and the overall likely outcome. Please note the following:

- Scenarios A, B and C also apply to all other applications involving a potential disturbance operation(s) (e.g. applications for consent (with or without grant aid) for afforestation and forest road construction under S.I.558 of 2010), applications for aerial fertilisation licences), and corresponding conditions will be attached accordingly. In relation to afforestation, *note that approval will not be issued for afforestation within SPAs designated for breeding Hen Harrier, pending the completion of the Threat Response Plan currently being compiled by the Department of Arts, Heritage and the Gaeltacht.* (see Forest Service Circular 13/2013.)
- Applicants should seek clarification from the Forest Service, should any other situation arise which does not appear to be covered by one of the three scenarios presented below.
- Scenarios A and B represent the default mechanisms, and applicants will be informed whether or not the project area lies within a Green Area or a Red Area within the conditions attached to any consent / approval / licence issued. However, where an applicant intends to undertake a disturbance operation(s) within the breeding season, s/he must contact the Forest Service or NPWS *before* preparing the application, to establish if the project area is within or partially within a Red Area. If so, Scenario C applies.
- Table 1 relates to potential disturbance operations only. *Applicants should note that, during SCREENING, other factors – e.g. other qualifying interests and conservation objectives of NATURA site(s) – may in themselves generate a requirement for an appropriate assessment.*
- The aerial fertilisation of forests requires a licence from the Minister of Agriculture, Food & the Marine under the European Communities (Aerial Fertilisation) (Forestry) Regulations 2012 (S.I.125 of 2012). As a potential disturbance operation, aerial fertilisation falls under these procedures in relation to SPAs designated for breeding Hen Harrier. Where an applicant is seeking to undertake aerial fertilisation during the Hen Harrier breeding season (1st April to 15th August inclusive), s/he must first contact the Forest Service several months prior to the submission of the Aerial Fertilisation Licence Application Form, to clarify whether or not the site of the operation (including storage, loading and refuelling depots) lies within a Red Area. If so and the applicant still wishes to undertake the operation during the breeding season, Scenario C applies, and a NATURA Impact Statement (NIS) must be submitted with the application, including (*inter alia*) a report setting out the results of a prescribed breeding survey (see following pages), together with (if applicable) details of mitigating site factors and / or proposed protective measures.

The following applies in *all cases* involving aerial fertilisation within a Hen Harrier SPA: throughout the breeding season, flight time spent traversing the SPA to and from the site of the operation must be minimised, and the flying altitude throughout this traverse must be maintained at no less than 1,300 feet / 400 metres above ground level. A map and a pilot declaration confirming these details must be provided with the Aerial Fertilisation Completion Form.

Table 1 Felling licence applications within SPAs designated for breeding Hen Harrier: Scenarios, typical results of the AAP, and overall outcomes likely.

SCENARIO	LIKELY OUTCOME(S)
<p>Scenario A</p> <p>Project area is wholly within a Green Area of a Hen Harrier SPA.</p>	<p>Applicant submits a Felling Licence application, and the Forest Service undertakes SCREENING under its Appropriate Assessment Procedure (AAP).</p> <p>Generally, within a Green Area, a potential disturbance operation will not disturb Hen Harrier breeding activity. Therefore, SCREENING typically concludes with SCREENING Conclusion 2 (no possibility of effect).</p> <p>Felling Licence issued with a normal lifespan. Applicant informed that the project area lies within a Green Area, and that any potential disturbance operation associated with the Felling Licence can proceed during the Hen Harrier breeding season (1st April to 15th August, inclusive). However, the Forest Service will notify the applicant in the future if any new Red Area (generated by a newly-recorded nesting site) overlaps the project area. From the date of receipt of this notification, no disturbance operation(s) associated with the Felling Licence are to take place within the breeding season (1st April to 15th August, inclusive). To do so will lead to the immediate cancellation of the Felling Licence (where trees remain standing) and may represent an offence under the Birds & Habitats Regulations 2011.</p> <p>If notification of a new Red Area is given during the breeding season itself, any ongoing disturbance operation associated with the Felling Licence is to cease immediately on receipt of the notification, unless otherwise agreed with the Forest Service, and can only recommence after the breeding season (i.e. after the 15th of August, inclusive).</p>
<p>Scenario B</p> <p>Project area is within or partially within (*) a Red Area (both inside and outside the boundary of the SPA).</p>	<p>Applicant submits a Felling Licence application, and the Forest Service undertakes SCREENING under its AAP.</p> <p>Generally, within a Red Area, a disturbance operation will not disrupt Hen Harrier breeding activity if limited to the period <u>outside</u> the breeding season. Therefore, SCREENING typically concludes with SCREENING Conclusion 2 (no possibility of effect), based on adherence to specific conditions attached to the licence – see below.</p> <p>Licence issued with a lifespan extending beyond the breeding season up to the following 31st March, with specific conditions attached, i.e.</p> <ul style="list-style-type: none"> ❑ Project area lies within a Red Area. Therefore, no disturbance operation(s) associated with the Felling Licence is to take place during the Hen Harrier breeding season (1st April to 15th August, inclusive). To do so will lead to the immediate cancellation of the Felling Licence (where trees remain standing) and may represent an offence under the Birds & Habitats Regulations 2011. ❑ Where it is envisaged that timber felling and associated disturbance operations under the licence will run into the breeding season, all disturbance operations are to cease on the 31st March and a new licence application and a NATURA Impact Statement (NIS) submitted, following Scenario C.
<p>(* For large scale thinnings, the applicant should contact the Forest Service or NPWS before preparing the application, to establish if the thinning area is partially within a Red Area. If so, two separate applications can be submitted, one for the thinning area outside the Red Area (i.e. Scenario A), and one for the thinning area inside the Red Area (i.e. Scenario B). The boundary between the two applications must be positioned outside the Red Area, following defined features on the ground, i.e. subcompartment boundary, rideline, forest road.)</p>	

SCENARIO	LIKELY OUTCOME
<p>Scenario C</p> <p>Applicant intends to undertake timber felling and other Felling Licence related disturbance operation(s) during the breeding season (1st April to 15th August, inclusive).</p> <p>AND</p> <p>Project area is within or partially within a Red Area (both inside and outside the boundary of the SPA (**)).</p>	<p>Forest Service automatically assumes that AAP SCREENING Conclusion 3 (i.e. possibility of effect exists) applies.</p> <p>Applicant submits a Felling Licence application and a NATURA Impact Statement. This NIS must include a report setting out the results of a prescribed breeding survey, together with (if applicable) details of mitigating site factors and / or proposed protective measures. (Other necessary components of a NIS are set out in Appendix 20.)</p> <p>Surveying and reporting to follow prescribed methodologies – see following pages.</p> <p>Forest Service undertakes APPROPRIATE ASSESSMENT, taking into consideration the survey results (including site mitigation factors and proposed protective measures, if applicable), and also wider potential in-combination impacts. Typical outcomes as follows:</p> <p>APPROPRIATE ASSESSMENT Conclusion 1 (no significant effect) is reached, based on the survey results and adherence to specific conditions.</p> <p>The Felling Licence is issued with a lifespan extending beyond the breeding season up to the following 31st March, with specific conditions attached, i.e.</p> <ul style="list-style-type: none"> ❑ Project area located within or partially within a Red Area. The described disturbance operation is permitted during the current breeding season (1st April to 15th August, inclusive), subject to adherence to the site mitigating factors and proposed protective measures set out in the NIS (and other conditions, as necessary). ❑ No disturbance operation associated with the Felling Licence is to take place during future Hen Harrier breeding seasons. Doing so may represent an offence under the Birds & Habitats Regulations 2011. <p style="text-align: center;"><u>OR</u></p> <p>APPROPRIATE ASSESSMENT Conclusion 2 (significant effect) is reached, based on the premise that any mitigating site factor and / or protective measure that has been or may be proposed will not be sufficient to prevent a significant effect on breeding activity. (APPROPRIATE ASSESSMENT Conclusion 3 (insufficient information) may also apply.)</p> <p>The Felling Licence will not be issued and the applicant must submit a new licence application. Scenario B will apply.</p>
<p><i>(** Applicants intending to undertake disturbance operations during the breeding season must contact the Forest Service or NPWS before preparing the application, to establish if the project area is within or partially within a Red Area.)</i></p>	

Breeding survey – methodology and reporting

As set out above, where the project area lies within or partially within a Red Area, and if the applicant intends to undertake a potential disturbance operation(s) during the breeding season, under the Forest Service AAP, it is assumed that the possibility of a significant effect on the NATURA site exists (i.e. Screening Conclusion 3). Therefore, the applicant is required to submit alongside the felling licence application, a NATURA Impact Statement (NIS). This NIS must include a report setting out the results of a prescribed survey, together with (if applicable) details of mitigating site factors and / or proposed protective measures. (Other necessary components of a NIS are set out in Appendix 20.) The surveying in question will comprise a *breeding survey*. The survey itself and its corresponding report must follow a prescribed methodology and structure, as set out below.

Note, the breeding survey must be carried out during the breeding season and within the same year as the proposed operation. Due to the required methodology, the breeding survey will not be completed until the second half of May. Therefore, in the case of felling licences, if breeding activity (confirmed or possible) is not occurring or where the proposed mitigating site factors and / or protective measures are deemed adequate (see below), the earliest that the licence can be issued and operations can commence is early June.

The breeding survey is aimed at identifying whether or not breeding activity (confirmed or possible) is occurring within the operational area and a defined hinterland, and if so, the location of the nesting site(s).

Methodology and likely results

A specific methodology applies for the breeding survey, as set out below.

- The survey must be carried out by a suitably qualified or experienced ornithologist.
- The breeding survey must be undertaken during the breeding season and within the same year as the proposed disturbance operation.
- The ornithologist undertaking the survey must inform the NPWS at a local level that s/he is carrying out a breeding survey, prior to the survey. This interaction may yield information from NPWS relevant to the survey.
- The survey is to be undertaken from vantage points. It is the responsibility of the ornithologist to choose the location and number of vantage points, so as to fully cover the area to be surveyed.
- The area to be surveyed comprises the operational area itself *and* a prescribed hinterland, as follows:
 - In the case of *clearfelling, extraction, timber loading at roadside and mechanical cultivation for both afforestation and reforestation*, this hinterland is to comprise an area 500 metres from the edge of the operational area outwards.
 - In the case of *thinning, forest road construction (and associated developments) and the driving of fencing posts*, this hinterland is to comprise suitable breeding habitats (*) that lie adjacent to the operational area, including those that continue uninterrupted up to a distance of 500 metres from the edge of the operational area.
 - In the case of *aerial fertilisation*, this hinterland is to comprise an area 750

metres from the edge of the operational area outwards.

- The surveyor must be able to identify the approximate location of the nesting site by remote observation. Nests should not be visited, as this requires a specific licence from NPWS.
- Three visits are to be made to each vantage point (one in the second half of April, one in the first half of May, one in the second half of May), with at least one week between each consecutive visit.
- For each survey visit, each vantage point watch is to be of 3 hours duration in good weather conditions.
- Table 1 lists definitions to be used as the basis for assessing if confirmed or possible breeding activity is occurring.

(* ‘Suitable breeding habitat’ includes both first and subsequent rotation forests up to 10 years of age, gaps 50 m² or greater in the canopy of forests older than 10 years, areas of poor tree growth, and ridelines with patches of heather, gorse, bramble or scrub. Outside the forest, it includes heather moorland and open unplanted ground that is not intensively farmed, and areas of scrub, gorse or bramble within improved farmland.)

One of three results (‘Breeding Results’) will arise from the breeding survey:

- **Breeding Result 1:** Breeding activity (confirmed or possible) is not occurring within the survey area.
- **Breeding Result 2:** Breeding activity (confirmed or possible) is occurring within the survey area. However, mitigating site factors and / or proposed protective measures have been identified by the ornithologist and agreed locally with NPWS as being

Table 2 Definitions of confirmed and possible Hen Harrier breeding activity.

Breeding activity	Indicative behaviour
Confirmed breeding activity	<ul style="list-style-type: none"> ➤ Food pass ➤ Adult carrying prey ➤ Recently fledged young ➤ Agitated behaviour or calls given by adults ➤ Direct evidence of a nest (eggs or chicks seen, chicks heard, used nest or eggshells found) ➤ Courtship or display behaviour involving both a male & female noted on two visits separated by at least a week ➤ A pair seen visiting a probable nesting site on two visits separated by at least a week
Possible breeding activity	<ul style="list-style-type: none"> ➤ Courtship or display behaviour involving both a male & female noted on only one visit, or only one of the adults is ever seen (e.g. displaying male seen twice but no female seen) ➤ A pair seen visiting a probable nesting site on only one visit ➤ Pair or female seen in possible nesting habitat between mid-May & the end of June

sufficient to offset the potential for disturbance and to allow the disturbance operation(s) to proceed during the current breeding season.

- **Breeding Result 3:** Breeding activity (confirmed or possible) is occurring within the survey area, and no mitigating site factors and / or proposed protective measures have been identified or agreed with NPWS.

Reporting requirement

The NIS submitted to the Forest Service must incorporate the breeding survey report, which must include the following:

- A suitable and appropriately-scaled map showing the proposed operational area, the extent of the area surveyed, and vantage points used (VP1, VP2, etc.).
- A statement describing the disturbance operation(s) involved and confirming that the area surveyed includes the operational area and the required hinterland, and that the required survey methodology was applied.
- The name of the ornithologist.
- The dates of the survey and the weather conditions.
- A statement summarising the result of the breeding survey, i.e. Breeding Result 1, 2 or 3 (as set out above).
- If Breeding Result 2 applies, a detailed description of the relevant mitigating site factors and / or proposed protective measures. This description must be countersigned and dated by NPWS, confirming its agreement that these will be sufficient to offset the potential for disturbance and to allow the operation(s) to proceed during the current breeding season. Note, where NPWS *do not* agree, Breeding Result 3 applies.

On receipt of the Felling Licence application and the accompanying NIS, the Forest Service will undertake an Appropriate Assessment (as per Section 20), and a final decision regarding licensing will be arrived at.

Appendix 22: APP and Freshwater Pearl Mussel

Please note Forest Service Circular 08/2012, which amends Table 4, Section 3.1 of the *Forestry & Freshwater Pearl Mussel Requirements: Site Assessment & Mitigation Measures* (2008) to include both thinning (1st, 2nd and subsequent) and aerial fertilisation, in addition to afforestation, clearfelling / reforestation and forest road works.

Under its Appropriate Assessment Procedure (AAP), the Forest Service undertakes individual SCREENING in situations where the *Forestry & Freshwater Pearl Mussel Requirements* (as amended above) apply. In such cases, the Freshwater Pearl Mussel Form A and Form B must be submitted with any application, and form part of the information used by the Forest Service in its SCREENING. Depending on the SCREENING conclusion, an APPROPRIATE ASSESSMENT (and associated NATURA Impact Statement) may or may not be required, as set out in Section 20 of the *Forestry Standards Manual*.

