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An Roinn Talmhaíochta, Bia agus Mara

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Forest Service

Forestry Schemes Manual

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Introduction

The Forest Service of the Department of Agriculture, Food and the Marine is Ireland's national forest authority. It is responsible for, inter alia, national forest policy, promotion of private forestry, administration of forest consent system and forestry support schemes, forest health and protection, control of felling and 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 which maximises its contribution to the national economic and social wellbeing on a sustainable basis and which is compatible with the protection of the environment*".

The ***Forestry Schemes Manual*** sets out clearly and concisely the procedures and operational standards required for the various forestry support schemes as described in the scheme documents administered by the Forest Service of the Department of Agriculture, Food and the Marine. These scheme documents are available on the Departments website. The Manual complements, and should be read in conjunction with, the *National Forest Standard*, the *Code of Best Forest Practice* and the suite of environmental guidelines published by the Department relating to Archaeology, Biodiversity, Landscape, Water Quality, Aerial Fertilisation, Harvesting, Forest Protection and Forest Recreation. Adherence to these publications is a condition of all grant schemes and aims to ensure that all timber produced in Ireland is derived from sustainably managed forests and that State investment in forestry is protected.

The Forestry Development Programme is funded by the State under the National Development Plan 2007-2013

Chapter 2

Application Process for the Afforestation Scheme, Forest Environment Protection Scheme and Native Woodland (Establishment) Scheme

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

It is an offence to undertake afforestation with the prior approval of the Minister. Any afforestation development which proceeds without such approval will not be eligible for grant assistance.

Following completion of the works, formal applications for payment of the Afforestation Grant (1st and 2nd Instalments) and Premiums must be made by the applicant.

2.1 Application for Pre-planting Approval - Form 1

All Form 1 applications must be completed and signed by the applicant (pages 1-2) and a qualified forester (pages 3-6) 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:

- Form 1
- Site Location Map
- Certified Species Map
- Biodiversity Map
- Fencing Map (if applicable)
- Test results for levels of Calcium carbonate $CaCO_3$ (if applicable) – see Appendix 18.
- Drainage Survey report – see Chapter 9
- Soil Analysis report – see Chapter 9 and Appendix 16

The application is processed by the Forest Service and assigned a unique Forest Service reference number known as "Contract No.". An Online facility, called iNET, for the submission of a Form 1 is also available and all registered foresters have been notified of the required procedure. 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.

- If there are any environmental considerations identified, the application is simultaneously referred to the relevant prescribed body as detailed in Chapter 11.

- Notice of all applications for approval is published on the Department's website and anybody 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 their observations. Sites below this threshold may also be referred to Local Authorities depending on their location and landscape sensitivity, as detailed in Chapter 11.

- If the site is greater than 50 hectares, an Environmental Impact Statement must accompany the Form 1.

- Following issue of technical approval a separate application must be made on Form 1a for financial approval, to be followed by notification of substantive commencement of work (Form 1b) and completion of work (Form 1c).

Note: *A "technical approval" confirms that the proposed afforestation project complies, in principle, with the conditions of the scheme and is eligible for a grant, subject to the availability of funds and completion of the project in compliance with the terms and conditions of the scheme. 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 time frame for these consultations is shown in table 19 in Chapter 11.

If a registered forester fails to identify specific considerations, the referrals may be delayed until the application is returned from the Forestry Inspector. Also note the Forest Service Penalty System, Chapter 12.

Changes to Specifications

You are reminded that no significant and material change can be made to specifications, as approved, without first being agreed by the relevant Forestry Inspector. In general, the main specification changes relate to species, plots and boundaries. All proposed species and plot boundary changes must be submitted to Approvals Section on a revised certified species map and include a revised plot table i.e. page 5 of the Form1. Where significant changes to species and/or plot locations are proposed, further consultation with prescribed bodies may be required.

There is no requirement to contact the Forest Service where a number of approved plots are excluded, i.e. the owner decides to plant less than the approved area.

2.2 Application for 1st instalment Grant and 1st Premium – Form 2

The 1st instalment of the Afforestation Grant and 1st Premium are due for payment upon successful completion of the initial site operations and 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.

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.

No Form 2 will be processed for grant payment if the 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 with the application:

- Certified Species map

- Biodiversity map
- Statement of Costs (where applicable for cost based schemes)
- Current Tax Clearance Certificate(s) for applicant and forester and a C2 Certificate for contractor(s) used
- Provenance Declaration Forms for all species planted - see Chapter 9 and Appendix 1
- A valid mandate, if the grant is mandated to a Registered Forester / Forestry Company - see Appendices 2 and 3.
- Documentary evidence of farming income where the farmer rate of premium is being claimed – see Chapter 3.
- Proof of ownership – see Chapter 4

Applications for 1st instalment grant may be subject to site inspections by the Forest Service to ensure the plantation has been established to the required standard.

If the documentation is complete and the site inspection confirms the works have been carried out in compliance with the Scheme, the Afforestation Grant and 1st Premium will be paid.

2.2.1 Statement of Costs

The Afforestation Schemes are administered under the fixed-rate grant system and statements of costs are not required. Applicants must detail the area claimed per Grant and Premium Category (*as described in Chapter 5*) and if claiming a fencing grant, the fence length and type erected. Details of the fixed-rate grant system are outlined in the Forest Service Circular of June 2008 – *Introduction of Fixed-Rate Grant*. The fixed-rate grant system also applies to the thinning and tending element of the revised Woodland Improvement Scheme.

The following schemes require a detailed statement of costs;

- Reconstitution Scheme
- Forest Roads Scheme
- Native Woodland Conservation Scheme
- NeighbourWood Scheme
- Woodland Improvement Scheme
- Reforestation Scheme
- High Pruning of Conifers

The formation costs to year 4 to be claimed at Form 2 stage, where 75% will be paid at the 1st instalment and 25% will be paid at the 2nd instalment.

Invoice(s) are required for the cost of the works carried out. The cost of works must be broken down by the specific operations and quantified as per application form, see Appendix 19.

Where the applicant carried out the works, he/she must provide a statement of the costs claimed for his/her own labour (see Appendix 20).

Costs of registered foresters associated with their salaries, wages, consultancy, supervision and including profit element must be included in the allowance for overheads.

The recommended allowable overhead is up to 30%.

2.3 Application for 2nd instalment grant – Form 3

Payment of the 2nd instalment afforestation grant is due 4 years after the completion date of the plantation. Applications for 2nd instalment grant may be subject to a site inspection by a Forestry Inspector to ensure 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. 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 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. The Forest Service will assess reconstituted sites 4 years after planting.

2.3.1 Forest Management Plans

All grant beneficiaries must submit a ***Forest Management Plan for Year 5 to Year 10*** at Form 3 stage for (i) plantations which are 10 hectares or greater, and (ii) for broadleaf plantations which are 5 hectares or greater. Any application for 2nd instalment afforestation grant 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.

When plantations are 10 years old, and before payment of the 11th and subsequent premiums, a ***Forest Management Plan for Year 11 to Year 20*** must be submitted detailing proposed management from year 11 to year 20.

Examples of both plans are given in the Appendices 4 to 7. A Forest Management Plan must be prepared by a registered forester.

The following details must be included in the management plan for years 5 to 10:

- Current Crop details
- Estimated age of first thinning and clearfell age per plot or sub compartment
- Management Checklist
- A fire plan (refer to Forest Protection Guidelines for further information)
- A declaration must be signed at Form 3 stage by the applicant stating that at year 10 a subsequent management plan will be provided.
- Any other comments / details relevant to the status of the contract / plantation.

The following details must be included in the management plan for years 11 to 20

- Updated certified species map
- Revised estimated age of first thinning and clearfell age per plot or sub compartment (this should be supplied even where first thinning age is post year 20)
- Management Checklist
- Top height and yield class assessment
- Road requirements
- Any other comments / details relevant to the status of the contract / plantation.

In addition to the above details forest owners may collect additional information in order to facilitate forest certification. Requirements for forest certification are available from the relevant certifying bodies.

2.3.2 Fire Plan and Map

The Forest Protection Guidelines provide information on fire plans which are required as part of a management plan at 2nd instalment stage. A Location Map is an important element of the Fire Plan and should show the following:

- Assembly point, (e.g. local landmark or crossroads).
- Access routes.
- Reservoir or waterpoint.
- Firebreaks.
- Adjoining forests.

Phone numbers of the key Fire Plan personnel should also be recorded on the map, for example :

- Fire Brigade.
- Garda Station.
- Caretaker.
- Neighbour.
- Company Forester.
- Forest Owner

Submission of a fire plan at 2nd Instalment stage is required for all plantations greater than 10 hectares. Forest owners in high fire risk areas should ensure that appropriate fire plans are in place irrespective of the area of the plantation,

See Chapter 9 for procedures for notification of fire damaged plantation (section 9.16).

2.4 Application for subsequent Premium Payments - Form 4

The farmer rate of premium is payable for a period of 20 years and the non-farmer rate for a period of 15 years. 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. At the time of application, the plantation must be to the standard required by the scheme. At the end of year 10, the applicant must submit an updated management plan and species map for the following 10 years. The eleventh and subsequent premiums are dependent on the applicant providing the Department with a Forest Management Plan prior to the eleventh premium payment. Any application for the 11th annual premium which is not accompanied by a Forest Management Plan will be returned to the applicant.

2.5 Rules for reduction/withholding of payments

2.5.1 Tax Clearance

In the case of payments totalling €10,000 or more in a 12 month period, the applicant will be required, for each payment, to produce either a valid tax clearance certificate or C2 certificate. No payments totalling €10,000 or more in a 12 month period may be made to an individual, company or other body without a current tax clearance certificate or C2 certificate.

2.5.2 1st Instalment Grants

If part of the total planted area fails inspection, the applicant must carry out remedial work within the current planting season (if practical) and resubmit the entire Form 2 application.

2.5.3 2nd Instalment Grants

2nd Instalment grants will be paid only when the entire plantation is up to the required standard. If part of the plantation fails inspection, payment will be withheld on the entire area until the remedial works are carried out and the plantation is established to the required standard. If, in the opinion of the Forest Service, the plantation has not been maintained to the standard as set out in this document, the scheduled penalty will apply. See Chapter 12.

However, where the Forest Service decides that it is not possible to bring the plantation, or part thereof, up to the required standard, no further payment will be made for that area. Where the grant, or part thereof, is not to be paid, the Forest Service may also require repayment of the amount paid in respect of the plantation or in respect of the area that does not meet the required standard.

2.5.4 Premiums

Where the Forest Service is of the opinion that a plantation does not meet the required standard, premium payments may be suspended. Where remedial works are prescribed by the Department, the applicant will be given a time scale for these works to be completed. Payments may continue to be withheld until the Forest Service is satisfied that the prescribed works have been carried out. However, where the Forest Service decides that it is not possible to bring the plantation, or part thereof, up to the required standard, no further payment will be made for that area. Where the remaining annual premiums cease to be paid or are reduced, the Forest Service may also require repayment of the grants and premiums paid in respect of the plantation or of the area that is not up the required standard.

Notwithstanding the above, if payment of the 2nd instalment grant is withheld for any reason, the Forest Service may, at its discretion, continue to pay premiums up to and including the 6th premium. However, if remedial works are outstanding when the 7th premium is applied for, or the 2nd instalment grant application (Form 3) has not been submitted, the remaining premium payments will be withheld. These will not be paid until the specified works have been completed to the satisfaction of the Forest Service.

The Forest Service carries out random forest inspections and if plantations are not managed in accordance with the rules of the schemes, premiums may be withheld or reduced in line with the approach outlined above and penalties may be applied. See Chapter 12.

2.6 Registered Foresters and Forestry Companies

The applicant and a forester whose name is included on the **Register of Foresters and Forestry Companies** must complete Form 1, Form 2, and Form 3 applications. Any application not signed by the applicant and registered forester will not be accepted.

Foresters and forestry companies who wish to be included on the Register of Foresters and 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 registration of foresters and forestry companies. In addition, they must have Professional Indemnity Insurance of at least €500,000.

2.7 Responsibility for forest management

Responsibility for the successful establishment and management of forests rests with the applicant. Failure by the applicant's forester to complete work to the required standards, and the remedying of this situation, is a matter between the applicant and the forester; the Department is not party to any agreement between the applicant and the forester. The Department will not be held liable for any issue that arises regardless of whether the site had received a Departmental Inspection or not.

CHAPTER 3

Premium Payment Considerations

3.1 Summary

Premiums are payable only in respect of plantations which qualify for afforestation grants, or an establishment grant under the Native Woodland Scheme. The annual premium is payable following the approval of the 1st Instalment of the afforestation grant.

There are two rates of premium payable - the farmer rate and the non-farmer rate.

All premium applicants must:

(i) Be over 18 years of age and
(ii) Hold a Personal Public Service (PPS) Number.

3.2 Farmer Rate

The farmer rate of premium is payable to applicants who fulfil the qualification conditions set out below and is payable for a period of twenty years.

An applicant for the farmer rate of premium must supply evidence of farming activity in one of the following forms:

i) An active REPS registration number, Herd number or registration under the Bovine Tuberculosis Eradication Scheme or other scheme operated by the Department of Agriculture, Food and the Marine. An 'active' registration means an applicant has been a beneficiary under the particular scheme in the year of the forest plantation's completion or in one of the three preceding years.
OR
ii) Documentary evidence that at least 25% of an applicant's income was derived from farming in the State in the year of the forestry plantation's completion or in one of the three preceding years.

Documentary evidence of farming income, for the purposes of 3(ii) above, must be supplied in one of the following forms:

i) A tax assessment showing that farming income amounted to at least 25% of total income for the relevant year
OR
ii) An income assessment and declaration form, TF1, completed and stamped by the local Teagasc Land Use Advisor or TF2 completed and stamped by an agricultural consultant who is a member of the Agricultural Consultants Association, demonstrating that at least 25% of total income is derived from farming.

3.3 Income calculation considerations for farmer rate

The following conditions attach to calculating income for qualification for the farmer rate of premium:

i) The income of the applicant only is used in the calculation. A spouse's income is not included in the calculation unless the application for premium is made in both names.
ii) Farming income includes agricultural aids, premiums and subsidies.
iii) Farmer forest premiums may be included as farming income provided the applicant has other farming income.
iv) Land letting on the less than 11-month basis (conacre) may be included as farming income provided the applicant has other farming income.
v) All Social Welfare payments, pensions/disability benefits, are excluded from gross income.

An applicant who has already been assessed and qualified as a farmer under the existing scheme or the RDP Afforestation Scheme 2000 – 2006 or the CAP Premium Scheme 1993 – 1999 or the Farmer Premium Scheme 1989-1992, does not have to be re-assessed in respect of applications for new plantations under the Scheme.

An applicant who has participated in the Farm Retirement Scheme cannot be classified as a farmer in respect of a plantation completed after the date of retirement, unless all payments received under that scheme have been repaid to the Department and the conditions outlined above are met.

3.4 Non farmer rate

The non-farmer rate of premium is payable to applicants who do not fulfil the qualification conditions set out in section 3.2 above and is payable for a period of 15 years.

CHAPTER 4

Ownership

In order to qualify for Afforestation Grants and Premiums, the applicant(s) must own, lease or be in joint management of the lands proposed for planting. All applicants must provide documentary evidence of ownership, leasing or joint management. It is in the interests of the applicant to establish the availability of this documentation before lodging an application for approval.

No grant or premium can be paid until the applicant has provided satisfactory documentation to confirm that they own, lease or are in joint management of the lands in question.

4.1 Proof of Ownership

In cases where the applicant is the registered owner of the lands he/she must provide a copy of the Folio documents and Filed Plan (folio map) identifying the applicant as the owner.

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
    - Deed of Transfer with Stamp duty paid, or
    - Unstamped Deed plus the Department's Certification of Land Transfer signed and stamped by a solicitor. (see Appendix 8),

In exceptional circumstances, an applicant may submit a Certificate of Title with a map showing the area of the plantation, both of which must be signed and stamped by a Solicitor (see Appendix 9). Acceptance of a Certificate of Title will be at the discretion of the Department, who may seek additional information to corroborate the certification.

4.2 Commonage

In cases of commonages, a Commonage Consent Form (see Appendix 10) may be submitted allowing one of the owners to apply for the afforestation grant. Documentary evidence, as defined in 4.1 above, identifying all the owners of the commonage is required. Each of the commonage owners is entitled to apply for premiums and will be assessed individually as to their eligibility. All Commonage Consent Forms must be witnessed and stamped by a solicitor.

4.3 Leases

In cases where an applicant is leasing lands, he/she may be eligible to receive afforestation grants and premiums. The following documentation must be provided:

(a) Copy of the folio documents and File Plan (folio map), or other documentation as described at 4.1 above, identifying the owner of the lands,

and

(b) Copy of the Lease.

The Lease must comply with the following requirements:

i. The Lease must be stamped by the Revenue Commissioners or registered with the Property Registration Authority,

ii. The Lease must be signed and dated and witnessed independently in a solicitor's office.

iii. The duration of the term of the Lease must be at least 40 years, i.e. approximating the crop rotation of the trees.

iv. If the Lease covers an area in excess of 21 hectares, it must be shown as a burden on the folio – or a new folio may be raised for the leased area.

v. The lessee (the applicant for grants & premiums) must be the beneficiary of the annual premiums.

vi. The Lease must specify who is to be the beneficiary(s) of the timber crop. At least 50% of the value of crop must accrue to the applicant.

vii. 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.

4.4 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 grant and premiums. The owner foregoes the right to these payments. In these cases the documentation required is:

(c) Documentary evidence, as defined in 4.1 above, identifying the owner/s of the planted lands.

(d) A joint management consent form (see Appendix 11) completed by the owner/s of the lands and the applicant.

The owner of the land and the applicant are both liable for the repayment of grants and premiums paid if the applicant fails to abide by the conditions of the scheme or in the event of sale or transfer of ownership during the 20 year term of the scheme.

Owners who wish to use the Joint Management facility must comply with the tax clearance requirements.

A joint management arrangement may be cancelled at any time provided the owner takes over the obligations of the scheme or, repays all grant and premium moneys already paid or, enters into a new joint management arrangement with another member of the immediate family willing to jointly manage the plantation to Forest Service standards and take over the obligations and benefits of the scheme. Any such change should be notified to the Change of Applicant Section (see 4.6 below).

4.5 Constraints on ownership

The Forest Service cannot give approval for afforestation in respect of lands on which

- turbary rights
- grazing rights, or
- rights of way

exist unless documentary evidence is submitted showing that all such rights have been relinquished, or the area upon which the constraint exists is excluded from the application. Standard forms for the relinquishment of turbary and grazing rights are provided at Appendices 12 and 13.

Tree planting is not permitted on a Right of Way and such areas should be excluded from proposed plantations.

4.6 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 (normally twenty years). The original applicant provided signed Undertakings (on Form 2) when he/she claimed payment of the 1st grant & 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 scheme were 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 grants and premiums to the new owner(s).

Once a change of ownership is notified to the Department, payments will be suspended until 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) are received in the Department at least one year before the expiry of the term of the premium 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 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 satisfactory maintenance of the plantation to Forest Service standards, availability of funds in each financial year and compliance with the tax clearance regulations.

If the previous owner was in receipt of a farmer rate of premium in respect of a plantation that is subsequently transferred/inherited, the new owner may also be eligible to the farmer rate of premium provided he/she satisfies the eligibility criteria for farmer rate of premium set out in Part IV of the Guide to Change of Ownership (available on the Department's website).

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 farmer rate of premium.

A detailed Guide on Change of Ownership of grant-aided plantations is available on the Department's website www.agriculture.gov.ie/forestservice

After the term of the contract ends the only continuing restriction on the land-owners use of the property are those applying under the Forestry Act 1946 which controls the felling of trees.

Owners shall contact the Felling Licence Section of the Department before undertaking any felling or tree clearing operations. The provisions of the Forestry Act 1946 apply whether or not the owner participated in a grant scheme.

The Minister retains an interest in all grant-aided plantations and would like to see that forest owners achieve optimum returns from their own, and the State's, investment in forestry. Forest owners are encouraged to make and maintain contact with their local Teagasc Forestry Advisor and also with their chosen Forestry company or Consultant. A list of registered foresters and forestry companies in available from the Department. Forest owners are encouraged to continue 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 return at final harvesting stage by helping the forest grow to its full potential.

CHAPTER 5

Grant and Premium Categories (GPC's) and Rates

5.1 General

To decide on the grant and premium rates applicable to any plantation, the application area must comply with plantation rules 1 and 2 below. Only plots within each plantation which comply with one of the GPCs listed can be considered for grant aid.

For details of GPC's in the Native Woodland (Establishment) Scheme, refer to the Native Woodland Manual (2011) available from the Forest Service.

5.2 Plantations

A proposed **plantation** for the purpose of the afforestation scheme is a **plot** (defined below) or number of plots on the same holding and contained on a single application planted in a single planting season. The rules below refer to the species composition that relate to grant and premium payments.

Only Plantations that comply with rules 1 and 2 below are eligible for grant aid.

Plantation Rules

Rule 1 - 10% broadleaves

Plantations on improved / enclosed land must contain a minimum of 10% broadleaves, site permitting.

The 10% broadleaf requirement can consist of broadleaves planted in plots of minimum width or additional broadleaves planted for landscape and environmental reasons.

Rule 2 - 10% Diverse conifers

Where conifers constitute all or part of a plantation, the conifers must contain a minimum of 10% diverse conifers (i.e. approved conifer species other than Sitka spruce, lodgepole pine)

In intimately mixed plots the diverse conifer species may be substituted by broadleaves as listed in Chapter 9, Table 7 of this Manual, and birch and rowan, planted in groups. These broadleaves must be silviculturally suited to the site. Broadleaves adjacent to roads and watercourses may also form part of this 10% requirement.

Rule 1 and 2 can be satisfied in plantations comprising only of GPC 3 plots in the Afforestation Scheme where 10% additional broadleaves are planted for environment and landscape reasons e.g. riparian zones, road or boundary margins. Plantations in the FEPS scheme must have broadleaves planted making up at least 10% of the area where they comply with the minimum width rules

Refer to examples of plantations which comply with rules 1 and 2 shown at the end of this chapter. These examples refer to the Afforestation Scheme only.

The Forest Biodiversity Guidelines require that in plantations greater than 10 hectares, areas of biodiversity enhancement (ABE's) should comprise 15 % of the area. Where plantations are less than 10 hectares, the open space element of ABE's should be designed in conjunction with neighbouring land use and may be reduced. For more information on ABEs refer to Chapter 7 and the Forest Service Forest Biodiversity guidelines.

5.3 Plots

Each plot within a plantation **must** conform with one of the following Grant and Premium Categories (GPCs) if it is to receive grant aid. Plots cannot be combined for premium purposes.

GPC 1 - Unenclosed land ***(Applicable to unenclosed land)***

All approved broadleaves and conifers planted on unenclosed land receive the unenclosed grant and premium rates for all afforestation schemes.

GPC 2 - Sitka spruce/lodgepole pine ***(Applicable to enclosed/improved land)***
This plot is made up of Sitka spruce or lodgepole pine. For landscape purposes it may be appropriate to introduce a small number of other species into this plot. *(Note : This plot on its own as a plantation is not grant aided because it does not conform with plantation rules 1 and 2 above, but can be a component of a plantation that conforms with the plantation rules (see example 1 and 2)*

GPC 3 - 10% diverse mix ***(Applicable to enclosed/improved land)***
This plot is made up of an intimate mix of Sitka spruce or lodgepole pine and a suitable diverse conifer (e.g. Douglas fir or western red cedar). The diverse conifer content must be at least 10%. This 10% mix can be made up of trees intimately mixed through the plantation, trees planted in groups through the plantation or a combination of both. The diverse conifer species in this intimate mix may be substituted by suitable broadleaves, site permitting.

GPC 4 - Diverse ***(Applicable to enclosed/improved land)***
This plot is made up of acceptable conifer species other than Sitka spruce and lodgepole pine.

GPC 5 - Broadleaf ***(Applicable to enclosed/improved land)***
This plot is made up of acceptable broadleaves such as ash, sycamore, cherry.

GPC 6 - Oak ***(Applicable to enclosed/improved land)***
This plot is made up of pure oak and/or an oak planted in mixture with a nurse species. The only conifers acceptable as a nurse species are Scots pine and European larch. (See section 9.10 'Stocking and Spacing')

GPC 7 - Beech ***(Applicable to enclosed/improved land)***
This plot is made up of pure beech and/or beech planted in mixture with a nurse species. The only conifers acceptable as a nurse species are Scots pine and European larch. (See section 9.10 'Stocking and Spacing')

GPC8- Alder
This plot is mainly made up of pure alder.

Areas of Biodiversity Enhancement (A.B.E.s) eligibility for grant and premium is defined in Chapter 7

5.4 Fixed Grant Rates

Table 1. Afforestation/FEPS/NWS (Establishment) Scheme Grant Rates effective 1st January 2011

GPC	1st Grant €/ha	2nd Grant €/ha	Total €/ha	Additional Fencing Allocation €/ha IS436	(Alternative Fencing Allocation €/ha Non IS436)	Total Available Funding €/ha
1-Unenclosed*	1500	500	2000	400	350	2400
2-Sitka spruce / lodgepole pine	2200	700	2900	400	350	3300
3-10% Diverse	2250	750	3000	400	350	3400
4-Diverse	2500	800	3300	400	350	3700
5-Broadleaves*	3600	1100	4700	500	450	5200
6-Oak*	3800	1200	5000	500	450	5500
7-Beech	3800	1200	5000	500	450	5500
8-Alder*	2400	800	3200	500	450	3700

**Grant rates applicable to NWS establishment scheme*

The afforestation grant is available as a fixed grant in respect of costs incurred in the establishment of a plantation. It is payable in two fixed grants as outlined above.

An additional fencing allowance is payable subject to the linear metres erected and limited to 100m/ha based on the area enclosed and protected by the fence. The fencing allocation grant is paid at the same time as the 1st Instalment. To qualify for the higher IS436 grant rates all fencing posts claimed in the 100m/ha allowance must be certified to this standard. All fencing claims will be capped at €50,000 per plantation.

Deer Fencing Maximum Allocation:

(Deer fencing caps are set at 150m/ha)

Upgrade to deer fencing:

- €975/ha for all GPCs (non IS436)
- €1050/ha for all GPCs (IS436)

New deer, deer/rabbit fencing:

- €1,800/ha for all GPCs (non IS436).
- €1950/ha for all GPCs. (IS436)

5.5 Premium levels

Afforestation/FEPS/NWS (Establishment)

Table 2. Premium Rates (new approvals) effective 1st January 2011

GPC	Farmer €/ha	non Farmer €/ha
1-Unenclosed	155	126
2-Sitka spruce / lodgepole pine	369	181
3-10% Diverse	427	181
4-Diverse	454	181
5-Broadleaves	481	195
6-Oak	515	195
7-Beech	515	195
8-Alder	481	195

FEPS - Forest Environment Protection Scheme (2011)

In addition to the Afforestation premiums, farmers who qualify for FEPS are eligible to an additional premium payable for up to 5 years, provided they remain in REPS. For farms up to 30 hectares in size, a minimum area of 5 hectares must be planted. For farms over 30 hectares in size, a minimum of 8 hectares must be planted. The applicable rates are listed in the table below

FEPS Premium (€/afforested hectare) – Annual Payment Years 1-5			
Total Farm Area (including area planted)	<30 hectares	<30 hectares	> 30 hectares
Area planted	>5 ha and <8 ha	>8 ha	>8ha
GPC 1, 3-8	150	200	200

Premiums

Premium payments are made annually. The applicant is supplied with a Form 4 annually. The applicant fills in this form and returns it to the Forest Service and payment is made shortly afterwards. (See Chapter 2, Application Process).

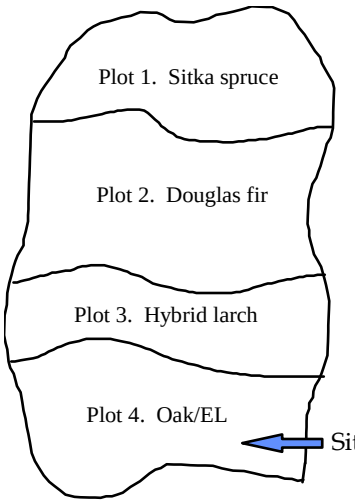
The annual forestry premium received under the Afforestation Premium Scheme is exempt from Income Tax but is subject to the Universal Social Charge and liable for self-employed PRSI contribution.

Applicants are advised to contact their local tax office for definitive advice on any tax, USC or PRSI matters.

5.6 Examples of Plantation Payment Calculations

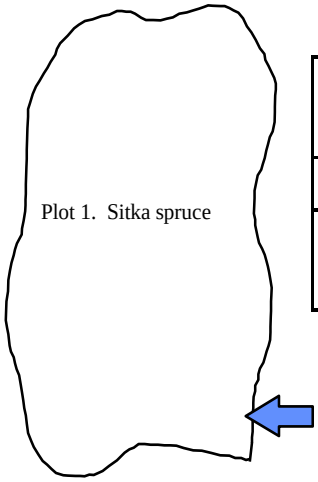
The following examples of proposed plantations demonstrate how the plantation and plot rules will apply to the paying of grants and premiums. The examples shown are based on the criteria that every plantation must comply with each of the two plantation rules and each plot within a plantation must conform to a Grant and Premium Category (GPC).

Example 1



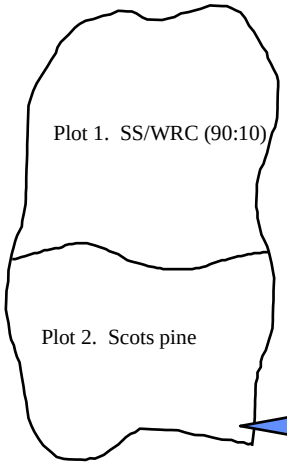
Plot No.	GPC	Area	Total Grant	Farmer Premium
1	GPC 2	4.2 ha	€ 13,860 (4.2 x 3300)	€,1549.80 (4.2 x 369)
2	GPC 4	6.8 ha	€ 25,160 (6.8 x 3,700)	€ 3,087.20 (6.8 x 454)
3	GPC 4	4.0 ha	€ 14,800 (4.0 x 3,700)	€ 1,816.00 (4.0 x454)
4	GPC 6	5.5 ha	€ 30,250 (5.5 x 5,500)	€ 2,832.50 (5.5 x 515)
		20.5 ha	€ 84,070	€ 9,285.50

Example 2



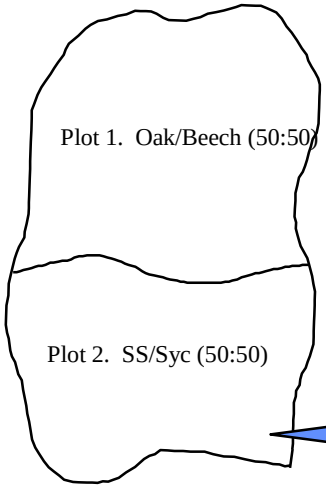
Plot No.	GPC	Area	Total	Farmer Premium
1	GPC 2	20.5	€00.00	€00.00
No grant or premium is payable on this plantation as the plantation does not comply with plantation rules 1 and 2.				

Example 3



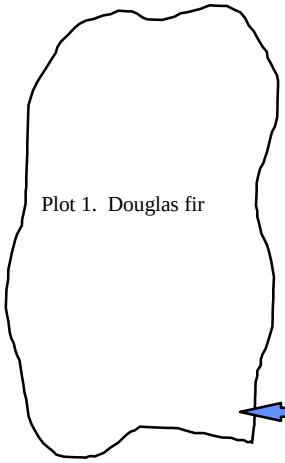
Plot No.	GPC	Area	Total	Farmer Premium
1	GPC 3	11.0 ha	€ 37,400 (11.0 x 3,400)	€ 4,697 (11 x 427)
2	GPC 4	9.5 ha	€ 35,150 (9.5 x 3,700)	€ 4,313 (9.5 x 454)
		20.5ha	€ 72,550	€ 9,010
Note plantation complies as site is not suitable for 10% broadleaves				

Example 4



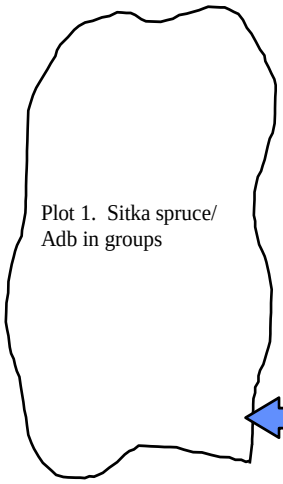
Plot No.	GPC	Area	Total Grant	Farmer Premium
1	None	11.0 ha	€00.00	€00.00
2	None	9.5 ha	€00.00	€00.00
This plantation does not qualify for grant aid as neither of the plots are approved mixtures and neither plot corresponds to a Grant Premium Category (GPC).				

Example 5



Plot No.	GPC	Area	Total	Farmer Premium
1	GPC 4	20.5	€00.00	€00.00
No grant or premium is payable on this plantation as the plantation does not comply with plantation rule 1. This site requires the planting of 10% broadleaves to be grant aided. If the site was not suitable for broadleaves this site would be grant aided.				

Example 6



Plot No.	GPC	Area	Total	Farmer Premium
1	GPC 3	20.5	€69,700 (20.5x3400)	€8753.5 (20.5x427)
Grant and premium is payable on this plantation as the plantation does comply with plantation rules 1 and 2. 10% of site planted with broadleaves				

5.7 Planting of Alder in GPC 5, 6 and 7

This section outlines the use of alder in small groups planted in localised areas within ash, sycamore, oak and beech plots claimed as GPC 5, 6 and 7 under the Afforestation and FEPS Schemes.

GPC 5, 6 and 7

Alder can be included in these GPC's where it meets the following conditions

- 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
- Planted at spacing's applicable for the claimed GPC i.e. all trees must be planted at 3,300/ha for GPC5,6 and 7 and 2500/ha for GPC1,2,3 and 4

Alder must not be planted in soils where water is stagnant.

Groups of alder equal to or greater than 0.1 ha must be plotted and claimed as GPC8.

In addition to the above rules, GPC 6 and 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 or 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.

CHAPTER 6

General Site Requirements

6.1 Agricultural land

The term "afforestation" means the planting of land not previously under forest. The Afforestation Grant Scheme is applicable to agricultural land only. Agricultural land has been defined (EU Commission decision 83/461/EEC of 4 July 1983) as any one of the following:

1. Arable land (cereals, dried and fresh vegetables, potatoes, sugar beet, forage roots and tubers, industrial crops, crops under glass, flowers and ornamental plants, forage plants, seeds and seedlings) and fallow land
2. Kitchen gardens
3. Permanent pasture and meadow
4. Permanent crops (fruit and berry plantations, citrus plantations, olive plantations, vineyards, nurseries).
5. Land which has been used for agricultural purposes (including extensive) in recent years

The Forest Service has defined recent years as 5 years for the purpose of the Afforestation Grant Schemes

Lands in other uses such as turbary (turf cutting), amenity, golf courses and other non agriculture activities are not entitled to grant aid under the afforestation grant schemes. In some instances other schemes such as the Woodland Improvement Scheme and the Neighbourwood and Native Woodland Scheme, may be applicable. For the purposes of the Afforestation Schemes, former Christmas trees farms will also be considered for approval.

6.2 Commercial Crop

Both conifer and broadleaf sites which 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.

The land must be capable of producing yield class 4 for oak or beech or at least yield class 14 for Sitka spruce using normal forestry practices. The use of Sitka spruce as an indicator recognises that other conifers may not achieve this production on the same site.

6.3 Access

6.3.1 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.

6.3.2 Adequate Access

It is essential that a landowner is aware that he/she will require adequate access from a public road to the proposed plantation to establish, manage and harvest the crop and 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 road standard at

harvesting stage. Exits /entrances to the main road should be developed within the property. In a situation where there are no proposals for a road, the land should be accessible by forwarders and other terrain vehicles.

Figure x: Good access is required to facilitate the transport of timber off site by timber trucks

6.4 Minimum Area

Conifer plantations:

- A conifer plantation must not be less than 1 hectare in total.
- Where conifer plantations adjoin existing forests then a minimum plantation size of 0.25 hectare applies.
- A conifer plot must not be less than 0.25 hectare.

Broadleaf plantations:

- A broadleaf plantation must not be less than 0.1 hectare.
- A broadleaf plot must also not be less than 0.1 hectare.

6.5 Minimum Width

The minimum width applies to the actual planted area and does not take into account areas of the plantation left unplanted (e.g. buffers along roads, rivers, streams etc.). The minimum width of any plantation and plot (broadleaf and conifer) should not normally be less than 40 metres measured from planted tree to planted tree. Where sites do not meet this requirement but are in the following categories they may be submitted for approval:

- Plantations and plots where more than 50% of the proposed plantation will exceed 40 metres in width.
- Plantations and plots where more than 50% of the proposed plantation will exceed a width of 30 metres adjoining an existing woodland.
- Broadleaved plantations and plots where the proposed width exceeds 20 metres for small plots.

CHAPTER 7

Unplanted Areas, Biodiversity and Setback distances

Areas for Biodiversity Enhancement (ABEs) as described in the Forest Biodiversity Guidelines are comprised of 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 ABEs would comprise approximately 15% of individual grant aided afforestation projects which are greater than 10 hectares. In sites less than 10 hectares in area, the open space element of ABEs should be designed in conjunction with neighbouring land use and may be reduced.

7.1 Eligibility as an ABE

The following table outlines areas left unplanted in forest plantations and indicates which are eligible as ABEs in individual projects and their eligibility for grants and premiums.

Table 3 Eligibility of Areas for ABE's, grants and premiums

Areas	ABE	Grant	Premium
Open space for landscape and biodiversity	Yes	*	**
Hedgerows	Yes	*	**
Scrub	Yes	*	**
Buffer zones along aquatic zones	Yes	*	**
Archaeological sites and their exclusion zones	Yes	*	**
Created lakes/reservoirs	Yes	*	**
Former REPS habitats	Yes	*	**
Public road setback areas	Yes	*	**
Railway setback strip	Yes	*	**
Ridelines and drains	Yes	*	**
Internal roads and turning bay setback areas	Yes	*	**
Unplantable areas	***	No	No
Shallow, rocky soils	***	*	**
Rock and scree	***	No	No
Aquatic zones (area occupied by lake/ river)	***	No	No
Forest. (Conifer High Forest and Broadleaf High Forest - this includes newly planted areas with conventional stocking densities.)	No	No	No
Dwelling house/associated building setback area	Yes	*	**
Rights of way held by third party	No	No	No
Areas with turbary or grazing rights held by a third party	No	No	No
Major water mains	***	No	No
Power line corridors	***	No	No
Gas line	***	No	No
Public road	No	No	No

* *An ABE of plot size is eligible for grant aid if it has been subject to work and legitimate costs in the afforestation of the project.*

** *An ABE is subject to premium if it adheres to the definition of utilised agricultural area (Commission Regulation (EC) No.1750/1999) prior to the commencement of the associated afforestation.*

*** *These areas can be included as ABEs if in the view of the Forest Service it has sufficient biodiversity value but is not subject to grant aid or premium.*

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

$$\text{Payment area} = \text{Actual planted area} \times \frac{100}{85}$$

For example, a 10 hectare application adjacent to a river has a combined unplanted area of 4 hectares. The 4 hectare area comprises the setback distance from the river, areas associated with internal hedgerows and a 60 metre setback distance from a dwelling. In this example the formula is applied as illustrated

$$\textit{Payment area} = \textit{Planted Area of 6 ha} \times \frac{100}{85} = \textit{7.06 hectares}$$

In this case the eligible claimed area is 7.06 hectares and **not** 10 hectares. Over declaration of area will result in grant and premium recoupment and can result in additional penalties being applied

Criteria for Eligibility

Areas chosen as ABEs should represent the best areas for biodiversity enhancement within a forest. While protecting biodiversity outside of the forest area is desirable and encouraged, it is not within the scope of the afforestation schemes to grant aid in excess of 15% of the eligible and planted area. The clarification below attempts to explain the Forest Biodiversity Guidelines to help maximise the biodiversity benefit of ABEs.

- ABE's are areas suitable for planting where the potential for a commercial forest crop is foregone for the purpose of retaining open spaces and habitats for biodiversity.

- The area occupied by linear features (e.g. hedgerows, public road setbacks etc.) or point features (e.g. archaeological sites) 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.

- ABE's must be an integral part of the proposed forest area.

- ABE's must be situated where they provide the best opportunity for enhancing the biodiversity within the forest area while also protecting watercourses and archaeological sites through the use of buffer and exclusion zones.

- Existing forests (conifer and broadleaf), or parts of existing forests, may not be used as ABEs. To be deemed a forest it must have a minimum area of 0.1 hectare and a minimum width of 20m. Other tree covered areas with smaller dimensions to a forest may be included as ABE.

  Note: In the FEPS scheme, and in SPAs designated for the protection of the Hen Harrier, the biodiversity requirement can increase to 20%, subject to approval.

7.2 Mapping and recording ABE Features

The Forestry Schemes Mapping Standards (2011) describe the requirements for mapping ABE areas.

It is often not practical to map linear or spot features such as hedgerows or individual trees on maps of scale 1:5000. However, where practical, features should be lettered and recorded on the map legend. For grant and premium purposes these features follow normal practice of adopting the Grant and Premium Category (GPC) in which they are situated. Features that may be

incorporated as part of the ABE, but are not subject to grant aid or to premium, should be excluded from the plot area.

7.3 Mapping and recording ABE Plots

An ABE of plot size should be mapped and recorded as a plot in the map legend. In this instance a plot will have a minimum width of 30metres. The abbreviation "Bio" should be used in the species column on forms 1 and 2 and on the map legends. The GPC should be that of the largest adjoining planted plot.

7.4 Grant aiding ABE plots

An ABE of plot size, as defined above, is eligible to grant. The GPC of the ABE should be that of the largest adjoining planted plot.

7.5 Biodiversity Map Legend

The Forestry Schemes Mapping Standards (2011) describe the requirements for mapping ABE areas.

An ABE must be included as an intrinsic part of the individual grant aided afforestation project and must be protected and fenced as part of the project.

The maximum grant aided area of ABE in afforestation projects continues to be 15% of <u>total</u> area eligible for grant and premium.

If a site, such as an intensively farmed area, does not contain sufficient retained habitat, the planting of native trees and shrubs, either in widely spaced groups or at wide spacing, may fulfil the retained habitat obligation – see the section entitled "Open Space" in the Forest Biodiversity Guidelines.

7.6 Setback/corridor width Conventions.

The principle for setback distances differs between planting and existing trees.

<u>Existing trees;</u>
If existing trees did not breach the setback distances applicable at the time they were planted, the setback distances set out in this Manual do not apply to them. This does not preclude a special condition being made in relation to individual projects.

<u>Planted trees:</u>
Planting in this case refers to the planting of trees for all schemes whether Afforesation, FEPS, Native Woodland Establishment and Conservation, reforestation, woodland improvement, reconstitution etc. In these cases all the setback distances apply.

Failure to adhere to the appropriate setback distances may result in grant aid being refused and/or penalties being applied.

Public road setback strip

A setback strip of 10m for broadleaves and 20m for conifers, measured to the surfaced edge of the public road, applies. In conifer plantations the strip 10m to 20m from the road should be

planted with broadleaves and not left unplanted. This distance is an average distance for single applications and should vary to take account of good landscaping practices.

Dwelling Houses/associated buildings setback areas

The setback distance from dwelling houses and associated buildings is 60m, or 30m where written consent of the owner is granted prior to approval, must be observed. Set back distance is most critical when a building is surrounded by forest on two sides or more. Where adjoining properties are 0.2 hectares or less, planting should be kept back 30m from the property boundary.

Rights of way held by parties other than the owner

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

Major Water mains (Local Authority or Group Scheme)

A corridor of 15m applies.

Gas line

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

There is an agreement between Irish Farmers Association and Bord Gáis Éireann on compensation for gas pipeline wayleaves through forestry. For further information, contact Bord Gáis Éireann or Irish Farmers Association.

ESB corridors (see also Chapter 7)

The following corridors apply:

Power line type	**Corridor width (centred)**
Low voltage (230/400V)	none (clearance from branches and tree tops only)
10 kV and 38 kV	20 m
110 kV	61 m
220 kV	68 m
400 kV	74 m

Wind Turbines

A minimum 30m setback 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 wind turbines, permission of the Forest Service is required before any trees are removed. Forestry grants and premiums may have to be repaid in respect of areas deforested.

The Forest Service policy on the Granting of Felling Licences for Wind Farm Developments may also effect decisions in relation to afforestation.

Ridelines

Normally 6m wide.

Internal roads & turning bays etc.

Normally 15m corridor.

Drains, Hedges, Created lakes/reservoirs, Current REPS habitats

Varies.

Firebreaks

6m wide fuel free zone.

Railway setback strips

20 metres.

Points of Water Abstraction

If there are pump houses or substantial tank type reservoirs, then the setback distance should be 30m (as for buildings and permanent structures - it is not necessary to obtain the owner's consent). If they are wells or boreholes the minimum setback distance for all work should be as per the buffer zone width outlined in the Forestry and Water Quality Guidelines. Tree planting setback should be such that it is equal to the ultimate falling distance of the species (25m for commercial conifers and broadleaves 25m). Birch, rowan, sally etc. can be up to the buffer zone width.

CHAPTER 8

ESB Power Lines

This Chapter has been agreed with the ESB and complies with the IFA/ESB agreement of 7th September 1992. It gives guidelines on how to deal with ESB lines in forestry and allows for each case to be examined on an individual basis. Landowners reserve the right to negotiate their own deal with the ESB.

8.1 Unplanted Corridors

Where ESB power lines traverse a site proposed for planting, corridors of the dimensions indicated in Table 4 below must be left unplanted beneath the lines. Corridor areas do not qualify for Forest Service grant assistance but may be used to satisfy the 15 % biodiversity requirement.

Table 4. Corridor widths under ESB lines

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

The area suitable for afforestation which is left unplanted because of ESB power lines should be indicated and certified on the species map but not included in the claimed area for grant and premium. Areas not falling under the corridor because of the corridor cannot reach the minimum width or area for afforestation 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 38 kV, 20 kV, 10 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.

8.2 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:

1. Completed application form (Application for Compensation for loss of Tree Planting Rights, Appendix 12).
2. Proof of grant approval letter and Ordnance Survey map.
3. Proof of Forest Premium loss (available on request from the Forest Service).
4. Agreement to grant an easement on the lands in question.

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

8.3 Compensation levels

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

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

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 23, taking into account the premium rate, number of years and interest rate. Payment is capitalised as a once off payment.

8.4 Mapping of ESB lines

The Forestry Schemes Mapping Standards outline requirements for mapping power lines. All applications affected by power lines must be mapped as per these standards

CHAPTER 9

Silvicultural Standards

The maintenance of high silvicultural standards compatible with the protection of our environment is of paramount importance. The following standards and specifications indicate the minimum acceptable for grant aid under the various grant schemes and should be read in conjunction with the Code of Best Forest Practice and the suite of environmental guidelines.

Responsibility for the successful establishment and management of forests rests with the applicant. The Department will not be held liable for any issue that arises regardless of whether the site had received a Departmental Inspection or not.

9.1 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 (M^3/ha.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 5 and 6 are extracts from '*A Guide to Forest Tree Species Selection and Silviculture in Ireland"* (Horgan, Keane, McCarthy, Lally and Thompson), COFORD 2004. 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 Guide, they provide a sound basis for species selection.**

Table 5 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 6**.

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 5 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.

Table 5. Species choice by soil type

Species		Soil Type															
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**Q**
Alder	Common																	
	Grey*																	
	Italian*																	
Ash	Common																	
Beech	European																	
	Southern																	
Birch	Downey*																	
	Silver*																	
Cherry	Wild																	
Chestnut	Spanish																	
Hornbeam	Common*																	
Lime	Common																	
Maple	Norway																	
Oak	Pedunculate																	
	Red																	
	Sessile																	
Rowan*																		
Sycamore																		
Cedar	Western red	X																
Cypress	Lawson																	
	Monterey																	
Fir	Douglas	X																
	Grand																	
Hemlock	Western	X																
Larch	European	X																
	Hybrid	X																
	Japanese*	X	X															
Pine	Austrian	X	X		X													
	Corsican																	
	Lodgepole (NC)																	
	Lodgepole (SC)	X	X	X	X	X					X	X		X				
	Macedonian																	
	Monterey	X																
	Scots	X																
Redwood	Coast																	
Spruce	Norway																	
	Serbian																	
	Sitka																	
Mixture	SS/DF	X																
	SS/JL	X	X															
	SS/HL	X																
	SS/LP (NC)																	
	SS/LP (SC)																	

Optimal Unsuitable

** Trees species not currently on Forest Service approved species list. These species may be considered in certain circumstances after consultation*

Soil Types

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

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

- 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.

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

Table 6. Species Silvicultural Characteristics

Species		Characteristics								
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Alders:	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	
Beech:	European beech	2	4	3	4	3	4	1	1	1
	Southern beech	3	4	4	4	3	3	4	3	
Birch:	Downy birch	3	1	3	4	4	3	3	4	1
	Silver birch	3	2	4	4	2	4	5	4	1
Cherry:	Wild cherry	2	4	5	4	3	5	5	5	
Chestnut:	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
Maple:	Norway maple	2	2	4	2	3	4	4	2	
Oaks:	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	
Cedar:	Western red cedar	3	2	4	3	4	4	2	3	1
Cypress:	Lawson cypress	3	2	3	3	4	3	1	4	
	Monterey cypress	4	3	1	1	3	3	4	3	
Firs:	Douglas fir	3	3	5	5	2	3	4	2	1
	Grand fir	2	2	5	4	4	5	2	2	1
Hemlock:	Western hemlock	3	4	4	3	3	3	1	3	
Larch:	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
Pines:	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
Redwood:	Coast Redwood	2	5	5	2	3	5	3	3	
Spruces:	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	

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.

Conifers suit acid to neutral soils with a pH of 4.5 to 7 (assuming the soil is free draining with non fluctuating water tables, especially at higher pH levels).

Broadleaves suit 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.

Table 7. Acceptable Tree Species for Grant aid

Conifers	Botanic name	Abbreviation
Lawson cypress	*Chamaecyparis lawsoniana*	LC
Leyland cypress	*Cupressocyparis leylandii*	LeyC
Monterey cypress	*Cupressus macrocarpa*	CM
Western Hemlock	*Tsuga heterophylla*	WH
European Larch	*Larix decidua*	EL
Douglas Fir	*Pseudotsuga menziesii*	DF
Grand Fir	*Abies grandis*	GF
Austrian pine	*Pinus nigra (var. nigra)*	AP
Corsican pine	*Pinus nigra (var. maritima)*	CP
Lodgepole pine	*Pinus contorta*	LP
Monterey pine	*Pinus radiata*	MP
Scots pine	*Pinus sylvestris*	SP
Norway spruce	*Picea abies*	NS
Serbian spruce	*Picea omorika*	Serb S
Sitka spruce	*Picea sitchensis*	SS
Western Red Cedar	*Thuja plicata*	WRC
Coast Redwood	*Sequoia sempervirons*	CR
Broadleaves		
Common alder	*Alnus glutinosa*	Ald
Ash	*Fraxinus excelsior*	Ash
Beech	*Fagus sylvatica*	Be
Southern beech	*Nothofagus procera / N. obliqua*	SBe
Cherry	*Prunus avium*	Ch
Spanish (Sweet) chestnut	*Castanea sativa*	SC
Lime	*Tilea cordata / T.platyphllos*	Lime
Norway maple	*Acer platanoides*	NM
Sycamore	*Acer pseudoplatanus*	Syc
Pedunculate oak	*Quercus robur*	PO
Sessile oak	*Quercus petraea*	SO
Red oak	*Quercus rubra*	RO
Additional Broadleaves	-	Adb

Other species may be considered in certain circumstances after consultation with the Forest Service.

It is recommended to introduce up to 5% of other native species such as birch, rowan, crab apple and willow into plantations 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.

9.2 Soil Analysis

Each site being assessed for suitability should, amongst other things, undergo a preliminary soil investigation by a Registered Forester. 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. The full procedure for the collection of soil samples in Appendix 16 must be followed. A soil sample form must be supplied to the soil testing laboratory along with the maps described in Appendix 16. The testing laboratory should be independent of the contracting company.

For assessing the sensitivity of surface water to acidification refer to Appendix 18.

9.3 Provenance Selection

9.3.1 Accepted Seed Origins/Provenances

Accepted seed origins/provenances for planting material are listed in Table 8.

Where possible, home collected seed from registered seed stands should be used and applicants are encouraged to ask first for plants from Irish seed.

Only the origins/provenances in Table 8 will be approved for grant aid. 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". Otherwise full responsibility for replacement and compensation, including loss of increment, rests with the applicant, registered forester or forestry company.

Table 8. Accepted Seed Origins/Provenances

Conifers	
Sitka spruce ***Picea sitchensis***	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. On most sites (low to mid elevation sites of less than 300m, except low lying areas in the midlands) plant *South Washington and North Oregon origins.* On cold frost prone sites (above 300m elevation and low lying areas in the midlands) plant *Queen Charlotte Islands (QCI) origins.*
Norway spruce ***Picea abies***	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, north east and lowlands of south Poland.
Serbian spruce ***Picea omorika***	Irish and British stands and seed imports from Serbia.
Lodgepole pine ***Pinus contorta*** *- in mixture with Sitka spruce* *- exposed, infertile sites* *- less exposed, mineral soils*	Irish and British seed orchards and stands. *Alaskan and North Coastal (including QCI and Vancouver Island origins).* *QCI, Vancouver Island and Interprovenance hybrids.* *Interprovenance hybrids, Lower Skeena River (Terrace, Kalun Lake and Hazelton) and South Coastal seed orchard material.*
Scots pine ***Pinus sylvestris***	Irish and Scottish seed orchards and registered seed stands
Austrian pine ***Pinus nigra(var. nigra)***	Registered Irish and British seed stands.
Corsican pine ***Pinus nigra (var. maritima)***	Registered Irish, British and Corsican seed stands.
Monterey pine ***Pinus radiata***	Guadalupe Island (Mexico) or stands derived from this origin and home grown Irish healthy, non-yellowing trees
Douglas fir ***Pseudotsuga menziesii***	Registered Irish and British seed stands and seed imports under EU derogation from coastal Washington and northern Oregon.
Grand fir ***Abies grandis***	Irish and British stands and imports from Olympic peninsula, Puget sound (Washington), Washington and Oregon coast range mountains and Vancouver Island
Western hemlock ***Tsuga heterophylla***	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 ***Thuja plicata***	Irish and British stands and seed imports of seed from Vancouver Island (British Columbia) and coastal Washington and Oregon.
European larch ***Larix decidua***	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 ***Cupressus macrocarpa***	Irish and British stands and seed imports from coastal southern Oregon and northern California.
Coast redwood ***Sequoia sempervirens***	Irish and British stands and seed imports from coastal southern Oregon and northern California
Lawson cypress ***Chamaecyparis lawsoniana***	Irish and British stands and imports from coastal southern Oregon and northern California.

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

* Up to 5% of these species may be planted for a variety of environmental enhancing reasons

9.4 EU Forest Reproductive Material Regulations

On 1 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.

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 1) must be completed for all the species listed in **Table 8**. Only the origins/provenances listed in this table 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 (Table 8).

- 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.

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 difference 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.

9.5 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.**

9.5.1 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 11 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 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.

Plants of the 5 conifer genera and Sorbus plants require a special Protected Zone Plant Passport valid for the island of Ireland (see **Table 9**). This is normally issued using the codes indicated in Table 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 rowan *Sorbus aucuparia*. DAFM is an abbreviation for the statutory authority for plant health (Department of Agriculture, Food and the Marine), 1234 is a unique registration number for the producer. ZP B2 is the coding to indicate that the plants are free of fireblight disease 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. Sorbus aucuparia ZP B2

Table 9. Forest Plants requiring an EU Plant Passport

Conifers	**Protected Zone Code**	**Broadleaves**	**Protected Zone Code**
Abies	ZP Conf.	Sorbus	ZP B2
Larix	ZP Conf.	Prunus	Not applicable
Picea	ZP Conf.		
Pinus	ZP Conf.		
Pseudotsuga	ZP Conf.		

9.5.2 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.

9.6 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 10 shows the species which can be considered in mixture. Where alternative mixtures are proposed the Forest Service must be consulted for approval.

Table 10. Compatibility of Conifer Intimate and line Mixtures

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

Y = compatible/compatible on certain sites, otherwise not compatible
**= JL not currently on approved list of species*

9.7 Drainage

9.7.1 General Drainage Objectives

Drainage has a direct bearing on the economic, environmental and social potential of the forest for the full rotation and beyond. A site which cannot be adequately drained should not be submitted for pre-planting approval or payment.

- Conifers should have a minimum free draining rooting depth of 45-60cm throughout the year.
- Broadleaf species require a greater depth.
- Root structure should radiate in all directions on the horizontal plane.
- It is important not to impair harvesting efficiency by creating obstacles.
- Drainage should not impair site access and should be designed in conjunction with the road network.
- Traditional drainage routes must be respected and maintained.

The Ordinance Survey 6" 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.

Buffer zones and exclusion zones must be considered when designing a forest. A buffer zone is an area where forest operations are curtailed and which is managed for environmental protection and enhancement. Within a buffer zone, natural ground vegetation is allowed to develop with additional planting of suitable riparian tree species (pit planted). An exclusion zone excludes all operations (see, for example, the Forestry and Archaeology Guidelines).

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. However on flat sites, or those with low slopes, it will be necessary to connect drains into the aquatic zone. This may be done only where it will not result in sediment or any pollutants entering the aquatic zone.

9.7.2 'Flat' difficult to drain areas

All drainage channels, slope allowing, should taper out before entering the buffer zone. The objective is to ensure that sediment does not enter the aquatic zone. The 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 will be necessary that the drains would connect up to the aquatic zone, provided it can be assured that sediment will not enter the aquatic zone. There should be no erosion risk on these flat sites or, if there is, sediment traps will negate the risk. On some sites it may be feasible and desirable to close the drain either fully or partially after successful drainage and crop establishment

A drainage survey should be carried out in flat areas or where there are doubts about the drainability of a site and this should be submitted at Form 1 stage. This survey should be carried out by a qualified Surveyor or Engineer at the appropriate time of the year to take account of raised water tables. The Drainage Survey should include:

- A certified Species Map at a scale of 1:5000 indicating date of survey and clearly showing surface levels throughout site relative to outfall water levels. Design calculations and details, including longitudinal sections where necessary.
- A declaration by the Surveyor or Engineer that drainage of the site will achieve a water table which is continuously 45-60cm 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)
  K is the minimum continuous water table depth to be achieved (45-60cm)
  E is the minimum allowable elevation difference between the surface at point A and the outfall at point B.

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

- A declaration from the applicant that the site, to the best of the applicants knowledge, is not prone to flooding

9.7.3 Biodiversity Map

The Biodiversity Map must include drainage and cultivation proposals and should address the following, where applicable:

- Cultivation type and direction
- Appropriate exclusion and buffer zones.
- Number, type and location of sediment traps - ensure that they are on the more level part of the topography
- Location of any crossings of aquatic zones.
- Location and direction of collector drains/main drains/existing drains
- Clearance of vegetation prior to cultivation.

Please refer to the Forestry Scheme Mapping Standards for detailed guidance on the preparation of Biodiversity Maps.

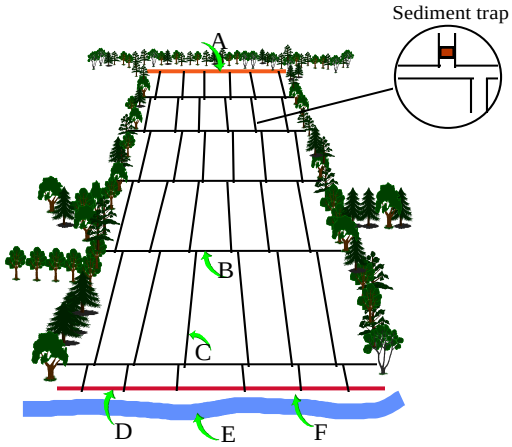
9.7.4 Drain types

Collector Drains
Collector drains (which collect water from mound drains, plough furrows, mole drains etc.) 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 degrees (1 in 30) on slopes greater than 3 degrees (1 in 20). They should be excavated to a depth not greater than10-15cm 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. They should discharge via sediment traps and/or an interceptor drain (see below) into the buffer zone or in flat sites into the aquatic zone via sediment traps.

Interceptor Drains
These are constructed along the edges of aquatic buffer zones. They collect the discharge from the drainage sub-catchment and allow it to overflow into the buffer zone.

Cut off Drains

These are constructed immediately up slope of a site and are designed to direct water away from the site.



A = Cut off Drain
B = Collector Drain
C = Mound Drain
D = Interceptor Drain
E = Aquatic Zone
F = Buffer Zone

Figure 1. Diagrams illustrating the use of sediment traps and different drain types.

Note that each site will have to be assessed individually to determine the appropriate drainage design. Designs similar to the one above may be suitable for steeper erodable sites.

9.7.5 Sediment Control and Management.

This can be achieved by minimising flow rate and flow volume. Riparian zone type vegetation of grasses, reeds and shrubs efficiently filters out sediment if the water flows over it.

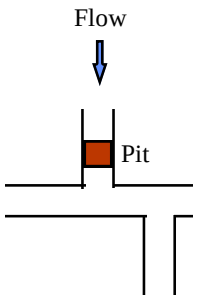
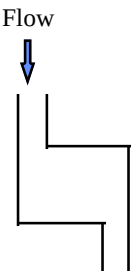
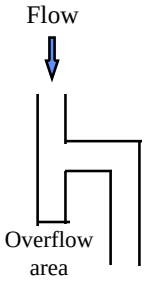
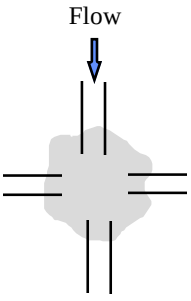
No. 1 (Pit)	No. 2 (Staggered Type)	No. 3 (Run Off Type)	No 4 (Swamp Type)
			
The end of the mound drain is slightly deepened for c. 0.3 metres before it enters the collector drain.	Forces water to slow down within the trap - more efficient than if the water ran straight through the trap. Minimum 1 metre long.	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.	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”.

Figure 2. Sediment Trap types (often referred to as ‘Silt Traps’).

A large number of small sediment traps (located throughout the site) are usually more efficient than a small number of big traps. 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 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 erodable sites (see **Table 11**). 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 made from straw, vegetation, timber or stone have been used with success to slow water flow and encourage the dropping of sediment.

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

Drains should be excavated prior to mounding.

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.

Flood events are inevitable - plan for them.

Buffer zones and exclusion zones must not be disturbed during the site preparation operation as this may lead to erosion channels being created.

Table 11. Rating scheme for soil erodability

	Slope Class					
Soil Type	**<3º** 1 in 20	**3º-6º** 1 in 20 to 1 in 10	**6º-8º** 1 in 10 to 1 in 7	**8º-17º** 1 in 7 to 1 in 3	**17º-30º** 1 in 3 to 1 in 2	**>30º** > 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

(L = low, M = medium, and H = high)

The more erodable the soil, the greater care needs to be taken on all the above points.

9.8 Woody Vegetation Clearing and Burning

The site may have a covering of dense woody vegetation such as gorse (furze) or bramble. The nature and extent of this will require a decision as to whether or not it should be removed. If mechanically removed, it should be pulled or, where it is dozed, particular care is required to ensure against topsoil damage, compaction or removal. Subsequent spraying will normally be also required. Pockets of broadleaf scrub and hedgerows should be maintained for habitat and biodiversity purposes.

Woody vegetation such as furze may need to be burned prior to planting. This is normally done in the season before planting. It may also be treated by flailing but the regrowth will need to be sprayed.

If essential for site development, hardwood scrub (birch, sally etc.) should be windrowed using an excavator. Where trees are required to be removed, a felling licence is necessary. Scrub areas can provide important areas for biodiversity enhancement and may be included as an ABE.

Burning and destruction of vegetation is regulated by the Wildlife Act 1976, as amended by the Wildlife 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 notice to the Garda, Local Authority and the forest owner. In addition, it is prohibited to light a fire which may ignite vegetation within one mile of a wood.

- Fines for breaches of the Act 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.

Landowners should also note that under Good Agricultural and 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.

More information on current legislation can be obtained at www.oireachtas.ie.

9.9 Ground Cultivation

9.9.1 Cultivation Methods

Soil Type	**Recommended Cultivation**
Carboniferous Surface Water Gleys derived from carboniferous drift and Peaty Gleys and Podsolised Gleys with less than 20cm 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 20cm peat and blanket peat	Mound
Peaty podsols, peat depth less than 20cm	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 permits
Suitable soil types and site conditions	Mechanical planting is considered

9.9.2 Mounding

Mound Drains

- Mound drains should be dug using a V-shaped bucket.
- Recommended Bucket Specification - conventional winged mounding bucket may be used for collector drains.
- On sites with slopes greater than 4^o (1 in 15) the mound drains should run in the direction of max slope and should be fed into collector drains spaced 50 - 80 m apart and aligned at a max slope of 2^o (1 in 30). This ensures the slow removal of water from the site avoiding erosion.
- Depth of mound drains is dependent on soil quality for mounding and should not be more than 45cm in depth in mineral soils and 60cm in peat soils.
- Mound drains should normally be spaced 12m apart, but can range from 8-16m depending on soil, hydrology and moisture condition and to an adequate depth to serve the drainage over the life of the crop.
- In exceptional circumstances, drainage spacing may be greater where soil depth permits and natural drainage is not a problem.
- Collector drains should be excavated to a depth and size capable of collecting water from mound drains (normally 40cm-60cm 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 1 and 2).
- Separate site and road drainage systems where possible.
- Use buffer zones between drain ends and watercourses.

Mounds

- Mound rows at 2 metre 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 45cm x 45cm x 15cm high to a maximum of 60cm x 60cm x 20cm high and clearly identifiable.
- Mounds should be placed at a minimum of 50cms from the drain edge.
- An intimate mix of soil should be used from top to bottom to ensure good planting medium for each mound.
- Avoid excessive subsoil, particularly on limestone derived soils.
- Inverted scrap mounds should be considered on steep slopes and 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 drain with scrap mounds taken from the side of the drains.

9.9.3 Ripping

- Rip at 2m spacing to 45cm depth using twin ripper tines.
- The tines should have wings fitted at bottom to ensure maximum disruption.
- In exceptional circumstances, deeper ripping may be necessary in order to break up consolidated soil layers or deep pans.
- Site collector drains should be excavated at spacing of 50m in order to collect water running in rips and to prevent risk of erosion and /or flooding of headland or adjacent land. In easily erodable sites, e.g. old red sandstone areas, closer drain spacing should be considered and be aligned at a slope of 2^o (1 in 30).
- Depth of collector drains should be 55-60cm.

9.9.4 Moling

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

9.9.5 Scarifying

- Scarifying should not be considered in shallow soils.
- Scarify to a depth of 10 to 20cm.
- Collector drains to be installed as required. On sites with slopes greater than 4^o (1 in 15), especially in ORS derived soils, space collector drains at 50m apart and align at a slope of 2^o (1 in 30).
- Planting area to be cleared of vegetation for an average width of 60cm.

9.9.6 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 20cm at 2m apart
- (Plough using a double furrow plough with a rip attachment has been shown to be effective)
- Planting area (double furrow) to be vegetation free for a width of 80cm.
- Plant on the sod furthest from the furrow or between the two sods, ensuring no air pockets
- Install collector drains as required at 80m apart on slopes greater than 4^o (1 in 15), especially on easily erodable soils.

9.9.7 Planting Machines

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

9.9.8 Pit Planting

Pit planting is suitable for mineral or old woodland sites. It may also be appropriate for steep slopes where other types of preparation may lead to sediment run off.

9.10 Stocking and Spacing

Table 12 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 12. Minimum stocking and spacing for conifers and broadleaves

Species	Spacing	Stocking/ha
LP pure	1.8m X 1.8m	3,100
All other Conifers	2.0m X 2.0m	2,500
Oak pure	2.0 m X 1.5m	3,300
Oak/nurse mix	10 lines of oak and one line of nurse species - Oak 2.0m X 1.5m - nurse 2.0m X 1.5m	3,300
Beech pure	2.0 m X 1.5m	3,300
Beech/nurse mix	10 lines of beech and one line of nurse species - Oak 2.0m X 1.5m - nurse 2.0m X 1.5m	3300
Ash, Sycamore and other broadleaves	2.0m X 1.5m	3,300
Alder	2.0 m x 2.0 m	2,500

9.11 Plant Quality

Transplants (planting stock) must have the characteristics of plants in accordance with the following definition:-
(a) A straight stem with a definite leader.
(b) A well balanced foliage with a good fibrous root system.
(c) A specified height to provide for size above ground when planted.
(d) A specified root collar diameter to provide for hardiness.
(e) Age must not exceed a specified maximum.

Transplants should be within the quality limits set out in **Table 13** and **14** below.

Table 13. Broadleaves - Quality limits for transplants

Species	Max. age (Yrs)	Min. Collar Diameter (mm)	Stem Height (cm)
Ash	3 4	7 12	50-75 60-90
Oak/Spanish chestnut/Beech	4 4 5	6 7 9	45 75 55-70 70-85
Sycamore	3	7	45-75
Alder	3	4	30-60
Other broadleaves	5	4	40-75

Table 14. Conifers - Quality limits for transplants

Species	Max. age (Yrs)	Min. Collar Diameter (mm)	Stem Height (cm)
SS	4	6 (4*)	31-65 (20-30*)
NS	4	6 (4*)	31-50 (20-30*)
LP	2	3	10-20
SP	3	4	20-40
CP	3	3	10-30
EL, HL	3	5	35-60
DF	4	8	40-60
WRC/WH/OC	4	4	25-45

(*) These are Size 2 Category Plants and apply only to SS and NS. They are suitable for sites without the potential for the vigorous growth of competing vegetation, provided the site is not liable to frost.

9.12 Plant Handling and Planting

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

9.12.1 General Plant Handling Issues

- Co-ordination and timing of plant deliveries from nursery to 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.

9.12.2 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. 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.

Litter warning

It is against the law to litter.
Do not submit an application for payment until all packaging including planting bags, fertiliser bags herbicide containers etc. are removed from the site and disposed of in an environmentally responsible manner. Burning of plastic containers and bags is not acceptable. Note Forest Service penalty for dumping.

9.12.3 Planting Methods

Trees must be planted correctly to provide optimum conditions for successful establishment. The main forms of planting are described below.

Slit planting

A spade is used to make a vertical slit in the ground. The trees roots are carefully positioned in 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 which can lead to poor development, e.g. J 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 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.

9.12.4 Planting Position

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- roots, basal sweep.

9.13 Lifting and Planting Dates

Provided that the handling guidelines listed above are adhered to, and morphological quality and size is 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 given in **Figure 3**.

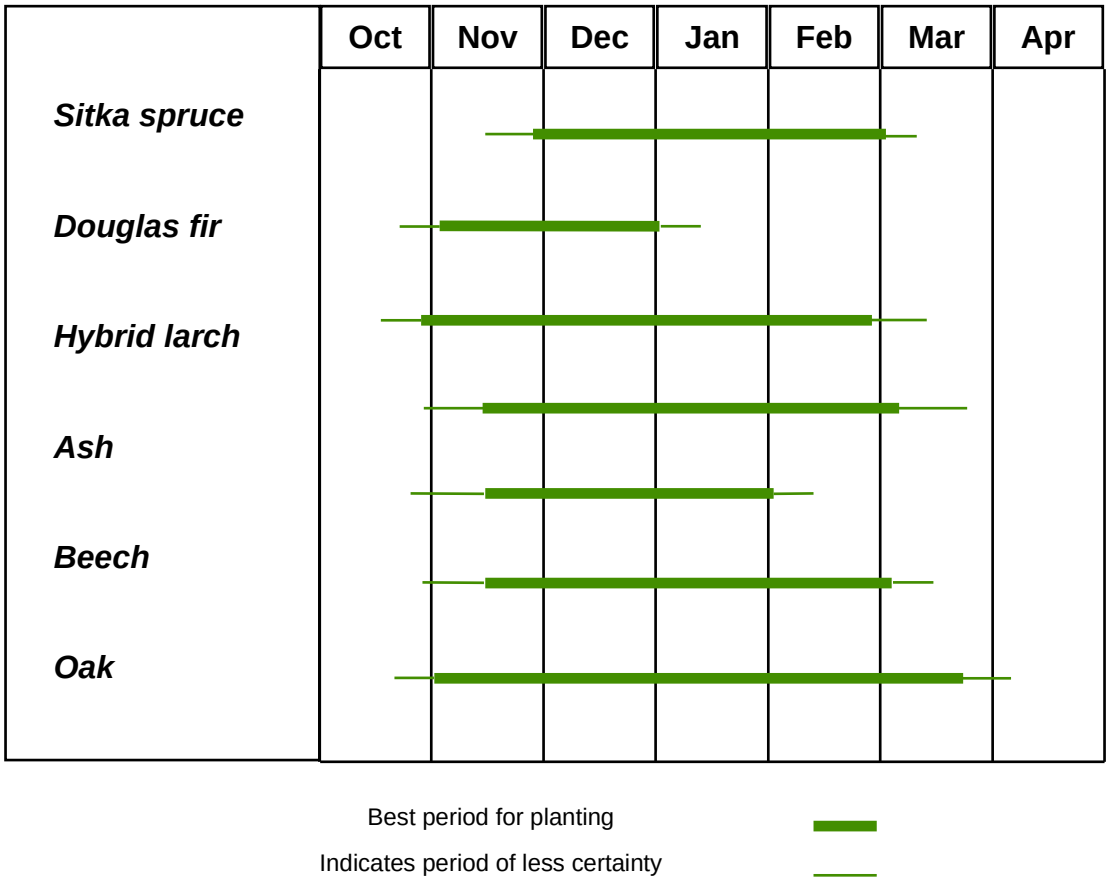
The success of transplants after planting depends on plant quality and post planting environmental conditions. During the period of '*Less certainty*' (see Figure 3 below) the likelihood of success will vary with plant dormancy level at the time of lifting and post planting conditions. Planting should be carried out soon after the plants arrive on the site to minimise these effects.

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 was reduced, especially for larch.

Photo 1 : Forest nurseries establish trees to required standards for planting out in the forest

Figure 3. Optimal dates for planting freshly lifted stock



9.14 Fertiliser Application

9.14.1 General.

- Apply fertiliser manually after cultivation to afforestation sites avoiding drains, buffer zones, areas within 20 metres of aquatic zones and waterlogged areas.
- Fertiliser should not be applied during or immediately after periods of heavy rainfall. It is best applied in early summer and not outside the period April to August.
- Subsequent application of fertiliser should be undertaken following a prescription resulting from a chemical analysis of foliar samples. Observe the Forestry and Water Quality Guidelines, in particular the section on Fertiliser Application and Storage (Page 7) and Forestry and Aerial Fertiliser Guidelines (where applicable).
- All fertiliser should be applied broadcast and evenly distributed.
- Correct time of application between the months of April to August inclusive.
- Apply after planting.
- Do not apply fertiliser to waterlogged soil.
- Do not apply during or after heavy rainfall.

9.14.2 Phosphate

Phosphorous applications in forestry must ensure that, while trees have sufficient phosphorus for sustainable growth, water quality or habitats are not damaged by phosphorous eutrophication. Forests are sometimes located in areas where naturally nutrient poor water bodies 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 can be characterised by

- Poor height growth
- Dull green colour on needles
- Reduced needle length
- Sparse foliage

Correct phosphorous management in forestry entails correct fertiliser application in terms of rate and timing and prevention of sedimentation of aquatic zones.

The following sets out phosphorous requirements for Sitka spruce at establishment time and should not be exceeded during the establishment of that species. It is a guide for other species.

Table 15: Phosphate Requirements

Site Type	**Rate of Application of Granulated Rock Phosphate (approx 11% P) Ungranulated Rock Phosphate (approx 14% P)**
Enclosed/Improved fields recently farmed	None
Former agricultural land not recently worked	250 kg./ha.
Unenclosed land	350 kg./ha. (on very poor sites, two applications may be necessary, 350 kg/ha. at establishment and a second application of 250 kg/ha. as required.)

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 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 application form for approval for afforestation, woodland improvement, reforestation and aerial fertilisation.

Photo 2 : Phosphorus and nitrogen deficiency on Sitka Spruce (red and white graduations of survey pole are 20 cm in length) on peat soils

Photo 3 : Phosphorus and nitrogen deficiency on Sitka spruce – peat soil

9.14.3 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 supplied as muriate of potash (50% K) at 250 kg per ha.

Photo 4 : K deficiency on Norway Spruce – Reclaimed Fen type peat (midlands)

Photo 5: K deficiency on Sitka spruce – Reclaimed Fen type peat (midlands)

Photo 6: K deficiency on Lodgepole pine – Reclaimed Fen type peat (midlands)

9.14.4 Broadleaves

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 if 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 17 for foliar sampling procedure. This will determine the type and rate of fertiliser required

9.14.4 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 determine the type and rate of fertiliser required

9.14.6 Prevention of sedimentation 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 past 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 and Water Quality Guidelines and the Forest Harvesting and the Environment Guidelines and the appropriate sections of this manual.

EXCLUSION ZONES

	Width of Exclusion Zone by Method of Application		
Feature	Manual*	Mechanical*	Aerial**
Aquatic Zone	20 metres or width of Buffer Zone whichever is the greater	50 metres	50 metres
Reservoirs & points of abstraction of drinking water	As above	As above	100 metres
Heritage areas	Consultation will take place with NPWS re applications for approval for grant aided projects.	Consultation will take place with NPWS re applications for approval for grant aided projects.	30 metres. Consultation will take place with NPWS re aerial fertiliser application.
Unforested lands	Nil	Nil	30 metres
Dwellings	30 to 60 metres at afforestation. Existing setback for later application-	30 to 60 metres at afforestation. Existing setback for later application.	30 metres
Roads, archaeology and old buildings	Exclusion zones per Forestry and Archaeology Guidelines and per road setback	Exclusion zones per Forestry and Archaeology Guidelines and per road setback	15 metres

**See Forestry and Water Quality Guidelines*
***See Forestry and Aerial Fertilisation Guidelines*

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

9.14.7 Storage of Fertiliser

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.

9.14.8 Aerial Fertilisation

Aerial fertilisation may be considered (a) for later fertiliser application on sites with a dense ground vegetation or branch growth where branches of adjoining trees are within 1 metre of

touching each other or, (b) for initial fertilisation of mineral sites which have no cultivation drains.

Prior approval must be obtained from the Forest Service for aerial fertilisation.

The European Communities (Aerial Fertilisation) (Forestry) Regulations 2006 (S.I. No. 592 of 2006), as amended, provide a statutory basis for licensing aerial fertilisation. Applicants may apply for a licence to the Forest Service. Details on the application procedure, the consultation process and the operational requirements, are described in the FORESTRY AND AERIAL FERTILISATION GUIDELINES and are available from the Forest Service.

9.15 Fencing

9.15.1 General

Plantations must be fully protected from the time of planting. Where fencing is involved, it must be to the Irish Standard 436:2001 to claim the higher rates of grant aid. Copies of this standard are available from the National Standards of Ireland (NSAI).

There is no requirement to duplicate existing stock proof fences, substantial walls, or other stock proof boundaries with additional fencing. 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 which 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 75cm high tree guards are sufficient)

Stiles must be erected at access points to all plantations and designed and maintained to allow safe access.

Electric fencing is not acceptable unless supplementing the specifications given in **Table 16**.

9.15.2 Fencing wire and netting

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 32mm (1.25”). 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 15cms x 20cms (6” x 8”).
- Plain wire of single strand mild steel should be 4mm in diameter.
- Barbed wire consists of two line wires of 2.5mm mild steel or two line wires of 1.6mm high tensile steel having 4 point barbs at intervals between 75mm and 85mm.
- Use galvanised staples made from 4mm diameter wire and 38mm (1.5”) long.

Table 16.Specifications for Forest Fencing (This table should be read in conjunction with IS 146 :2001)

Fence Type	Wire and Netting	Intermediate posts (stakes)	Turning posts	Strainer posts
Cattle	Barbed wire Public roads *etc*.- plain wire Number of strands: 3 Distance between strands: 18-23cms Top strand not less than 1 metre from ground.	Length: 1.5m Round stake: Top diameter 10cm Split stakes: Diameter 12.5cm Machined squared: Top dimension 10cm X 10cm Distance apart: Mild steel 4m High tensile 5m	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: 1.8m Top diameter: 12.5cm 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: 2.1m Top diameter: 17.5cm Usual distance apart: 100m Strut (length 1.8m diameter 10cm)
Cattle/Sheep	Ordinary sheep netting or rectangular mesh sheep netting. One strand of barbed wire. Barbed wire 10-12.5cm above the netting. Lowest line of the sheep mesh shall be between 50mm and 100mm above ground level. (The use of barb wire may be waived on application where there is no long term threat from cattle)			
Cattle/Rabbit	Rabbit netting. Three strands of barbed wire. One strand on top of rabbit netting and netting stapled to barbed wire. Second strand 1.05m above ground. Bottom of netting turned outwards and held down with sods, stones or pegs. One strand 15cm from the bottom.			
Rabbit/Hare	Rabbit netting. Two strands of barbed wire. One strand on top of rabbit netting with netting looped over barbs. Second strand 15cm above rabbit netting. Bottom 15cm of rabbit netting buried underground turned outwards and held down with sods. This will leave approximately 90cm 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 can be placed back on top.			
Deer	(a) Rectangular wire mesh, 1.9m high or two lengths of sheep wire, one over the other. (b) Alternative fencing specifications /post arrangements approved on request on a case by case basis e.g. In very uneven terrain, on exceptionally stony ground, or where post-holes cannot be dug or augured, non-tensile suspended fencing may be approved.	Length: 3m (driven 1m into ground) Diameter : 12.5 cm Distance apart : 8m	Turning posts for angles less than 30°. Length: 3.0m Top diameter : 20cm Distance apart : as required	H Frame only, Strut (length 1.8m diameter 10cm) to be fixed to strainer posts using either galvanised steel rod or rebated joint (See IS 146:2001) Length: 3m (driven 1m into ground) Top diameter : 20cm Distance apart : 80m

Fixed Grant System – IS436 Fencing Certified

To qualify for the higher IS436 grant rates, all fencing posts claimed in the 100 metre per hectare allowance must be certified to this standard. Where part of the 100 metre per hectare allowance claim contains non IS436 material the entire allowance will be assessed at the non IS436 grant rate.

An IS436 Fencing Post Certificate must be completed in full and attached to the Form 2. A sample certificate is attached in Appendix 24 for your information, with explanatory notes.

Mapping

All applications for grant aid must be clearly identified, outlining the location of each fence type and with measured length erected in metres on a separate "Fencing Map" as described in the revised Mapping Standards. The map must clearly state which grant is being claimed, i.e. "Certified IS 436" **or** "Non Certified IS436". The post and wire arrangements for Forest Fencing is outlined in **Table 16**, applies to all fences erected on afforestation sites.

9.16 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 6m 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 on the forest boundary. However they are an intensive form of soil disturbance so it is important to depart from the boundary when constructing them if archaeological, water quality, biodiversity or other issues demand. In these instances, the appropriate buffer and exclusion zones must be observed and the firebreak must be made the required distance back from the features. Landscape considerations may also dictate that part or all of the firebreak should depart from the forest boundary and be made inside the forest.

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 (5000 Gallons).

A reservoir should be fully operational during fire danger periods and easily accessible to vehicles. All reservoirs should be adequately fenced.

NOTE: 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 a breach of contract and 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

Procedure for reporting fire damage to forest plantations
In the springs of 2010 and 2011 significant damage was caused to the national forest estate as a result of wildfires. Many forest owners incurred considerable losses as a result of these fires, which destroyed valuable timber resources.

Obligation of Forest Owners
Beneficiaries of afforestation grants and premiums are obliged to maintain and protect their forest for a period of up to 20 years from the date the grant was paid. This means that there is an obligation on the beneficiary to replant where the forest is damaged by fire.

Failure to adequately protect and maintain a grant aided forest can result in cessation of premium payment and may, ultimately, result in recoupment of all grant and premium monies received, unless remedial work is satisfactorily carried out.

If your forest is damaged by fire you must follow the procedures set out below.

1 Submit a **Reconstitution Notification Form 1: Application for Approval** form as quickly as possible. This form is used (i) to inform the Department 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 Forester. A map of the site clearly identifying the damaged area, along with any proposed changes in species, prepared and signed by the Forester, must accompany the 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.

2 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 Forester. A certified Species Map, prepared and signed by the Forester, must accompany the Form 2.

3 The forest will be liable for further inspection by the Department 4 years after the reconstitution works are completed and a **Form 3: Reconstitution Notification Form** will be posted to the forest owner for completion and return, in advance of the inspection.

<u>The Forest Service strongly recommends that the following cost effective steps should be implemented in order to address the risk of fire damage to your forest:</u>

- Consider the financial consequences of fire damage – it is the responsibility of each forest owner to ensure that adequate insurance, including for reconstitution costs, is in place
- Firebreaks should be well maintained and checked at least once a year
- Have a Fire Plan 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 1 March and 31 August each year
- Landowners who set fires to burn vegetation are obliged to give you (and the Gardaí) written notice if they intend to burn within a mile of your forest and you are entitled to object by counter notice (within three days)
- Take responsibility by reporting any suspicious activity to the Gardai

The prompt reporting of forest fires is essential and for this purpose a dedicated email address report.fires@agriculture.gov.ie has been allocated. You can also report fires during normal working hours by phoning lo-call number 1890 200 509 or in writing to Forestry Division (Forest Fires), Department of Agriculture, Food and the Marine, Johnstown Castle Estate, Wexford.

Any information submitted will be treated in the strictest confidence. However, it should be noted that the Department is subject to the provisions of the Freedom of Information (FOI) Acts.

For further information on to http://www.agriculture.gov.ie/forestservice/landandforestfires

9.17 Weed Control

Weeds reduce both the survival and height growth of trees by competing for light, moisture and nutrients. It has been demonstrated that the most effective and efficient means of controlling weeds is by the use of herbicides**. By controlling vegetation in a 1m diameter spot (or 1m wide band) around the base of trees in the initial 4 years, successful establishment to Forest Service standards should be achieved.**

Weed control should be undertaken in accordance with the booklet '*Guidelines for the use of Herbicides in forestry*' published by Coillte Teoranta on behalf of the Forest Service.

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

9.18 Standards

9.18.1 General

Applications submitted for pre-approval and grant payment must adhere to standards outlined in the following documents and guidelines, which are a condition of approval;

- Forestry Schemes Manual
- Current Scheme Document
- Forestry Schemes Mapping Standards
- Forestry and Water Quality Guidelines
- Forest Biodiversity Guidelines
- Forestry and the Landscape Guidelines
- Forest Harvesting and the Environment Guidelines
- Forestry and Archaeology Guidelines
- Forest Road Manual: Guidelines for the Design, Construction and Management of Forest Roads (COFORD, 2005)
- Code of Best Forest Practice - Ireland
- Forestry and Freshwater Pearl Mussel Requirements: Site Assessment and Mitigation Measures

Registered Foresters and applicants must ensure that applications are complete and are within the scope of the scheme. A site inspection by Registered Foresters is mandatory at all stages, i.e. Form 1, 2 and 3. 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 Scheme Documents available on the Department's website.

Pre-approval (Form 1)

Applications submitted for approval must include and adhere to the following

- Application form fully completed
- Species proposed are silvicultural and environmentally suited to the site
- Applicants declaration completed, dated and signed
- Registered Foresters declaration completed, dated and signed
- Certified Species Map and species plot table completed in accordance with Forestry Schemes Mapping Standards
- Biodiversity Map completed in accordance with Mapping Standards
- Fencing Map
- Forest Road Map (Roads Scheme)
- Forest Road Specification (Roads Scheme)
- Inventory Details (Road Scheme)
- Scheduled of Proposed Costs/Operations (Roads, Reconstitution, Native Woodland Conservation Schemes)
- All areas ineligible for aid excluded from claimed area, e.g. areas of shell marl
- GPC categories correctly identified and mapped, e.g. GPC1
- Calcium carbonate test results submitted (if applicable)
- Drainage Survey Report attached (if applicable)
- Soil Analysis Report attached (if applicable)
- Environmental Impact Statement attached (if applicable)

Payment (Form 2)

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

- Application form fully completed
- Applicants declaration completed, dated and signed
- Registered Foresters declaration completed, dated and signed
- Planted forest complies with the Forestry Schemes Manual, environmental guidelines, schemes documents outlined above, approval letter and additional specific approval conditions, if applicable
- Certified Species Map and species plot table completed in accordance with Forestry Schemes Mapping Standards
- Forest Road Map (Roads Scheme)
- Biodiversity Map completed in accordance with Mapping Standards
- Fencing Map and claimed length in accordance with Mapping Standards and requirements
- Provenance Declaration forms completed for all species, as required
- Tax Clearance Certificates
- Valid Mandate (if applicable)

- All plots have at least 90% of the original planted trees spread evenly over the site, and are free from competing vegetation
- Mapped boundaries and species plot table completed in accordance with Forestry Schemes Mapping Standards
- All areas ineligible for aid excluded from claimed area, e.g. areas of shell marl, buildings, etc.,
- All plots and plantation boundaries have been verified on the ground and mapped accurately
- GPC categories correctly identified and mapped, e.g. GPC1
- Site boundaries are adequately fenced to protect crop
- Fire breaks correctly installed, if applicable
- Scheduled of Costs/Operations (Roads, Reconstitution, Native Woodland Conservation Schemes)

Photos 7 and 8 : Plantations established correctly will optimise conditions for successful timber production

Payment (Form 3)

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

- Application form fully completed
- Applicants declaration completed, dated and signed
- Registered Foresters declaration completed, dated and signed
- Planted forest complies with the Forestry Schemes Manual, environmental guidelines, schemes documents outlined above, approval letter and additional specific approval conditions, if applicable
- Certified Species Map and species plot table completed in accordance with Forestry Schemes Mapping Standards
- Forest Management Plan (required for broadleaved plantations >5ha and for all plantations >10ha in Afforestation schemes)
- 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, and are free from competing vegetation and are free growing.
- Any nutritional deficiencies identified have been remediated and the crop is now established and free growing.

- Broadleaves shaped as described in this manual (see section 9.18.5)
- Mapped boundaries and species plot table completed in accordance with Forestry Schemes Mapping Standards
- All areas ineligible for aid excluded from claimed area, e.g. areas of shell marl, buildings, etc.,
- All plots and plantation boundaries have been verified on the ground and mapped accurately
- GPC categories correctly identified and mapped, e.g. GPC1
- Site boundaries are adequately fenced to protect crop
- Installed fire breaks and silt traps maintained

Only when the entire plantation is established satisfactorily should a Form 3 be submitted for payment. 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.

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

	
Photo 9 : Norway spruce (4 year old)	**Photo 10 : Ash (4 year old)**
	
Photo 11 : Oak (4 year old)	**Photo 12 : Douglas fir (4 year old)**

9.18.3 Fences, Roads, Firebreaks, Drains, Sediment traps, etc.

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

9.18.4 Formative shaping

Formative shaping of broadleaves is an ongoing integral part of a plantations maintenance. It is necessary to have this operation complete at 2nd instalment stage for ash and sycamore.

It may be necessary to shape oak and beech prior to 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 declaration that formative shaping to Forest Service Standards will be carried out at a specified time period at the forestry companies expense.

Formative shaping should occur when the trees are between 1m and 2m in height and, when completed, should give a minimum of 60% of Grade 1 and Grade 2 plants evenly distributed throughout the plantation.

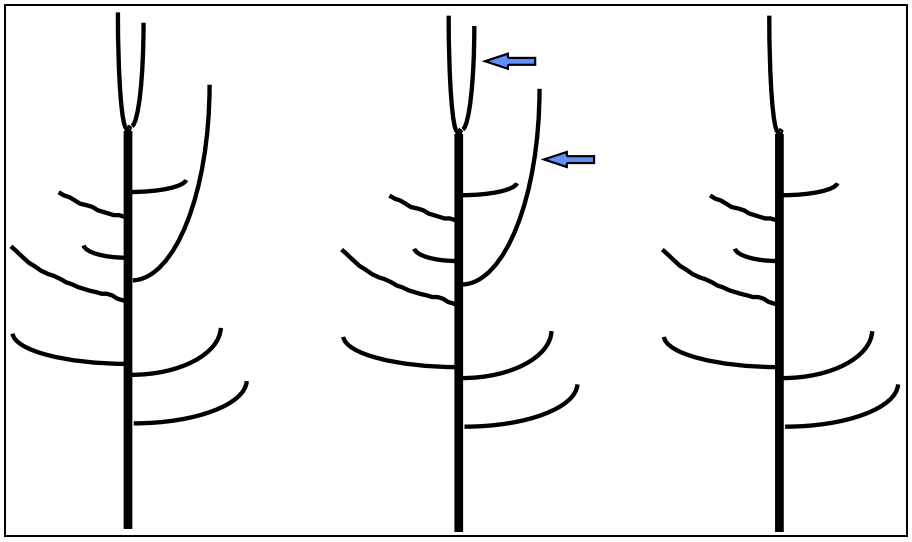
Conifers after suffering a late spring frost attack may produce multiple leaders. It is important that rather than replacing these trees that they are formatively shaped to leave one leader on each stem. If only a small proportion of the crop <5% is effected it may not be necessary to carry out this 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 (>50% of the main stem). All trees that can be readily shaped should be shaped. Trees that are very poorly formed should not be shaped and should be either stumped back or let grow in order to shade out the side branches of neighbouring better formed trees. Trees should only be shaped during the months indicated in **Table 17**.

Table 17. 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

The aim of the first shaping is to achieve over 60% grade 1 and grade 2 trees for most broadleaved species (see Figure 4). 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 broadleaved species.



A. **B.** **C.**

Figure 4
'A' shows a young broadleaf tree in need of formative shaping.
'B' identifies the branches that must be removed if the tree is produce a single straight stem.
'C' shows how the tree looks after shaping. Note the many side branches that are not competing to become the leading shoot are left on the tree.

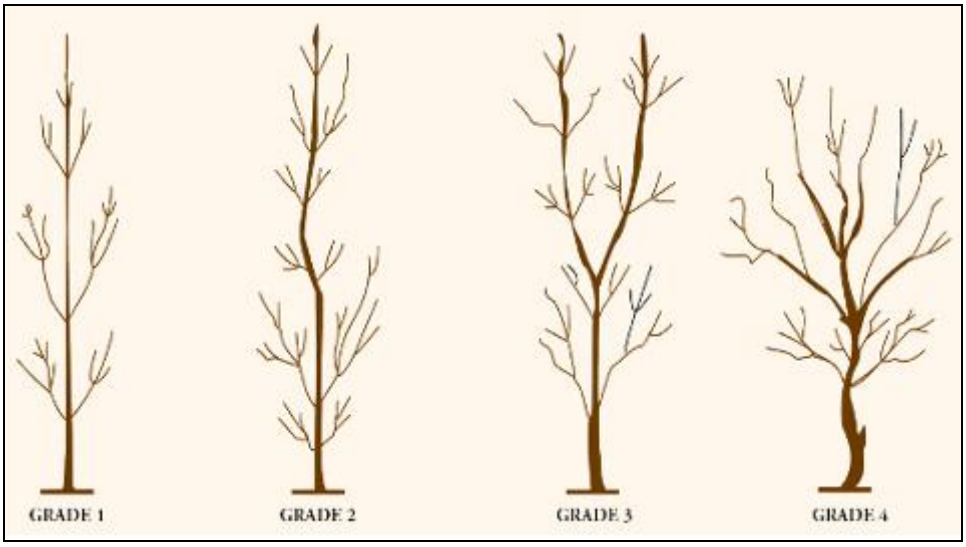


Figure 5 : Standard Quality Grades for broadleaved trees

Table 18 : Standard Quality Grades for broadleaved 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 1 heavy branch	1 or more heavy branches, 1 or more forks	Heavy branches, extensively forked
Shaping required	No shaping required	1 or at most 2 cuts to be converted into grade 1 tree	Numerous cuts to be converted into grade 1 or 2 tree	Shaping not likely on cost and crop balance grounds

9.18.5 Pests and Diseases

In addition to the Report of Registered Forester (page 3, Form 3), please contact your local Forestry Inspector immediately if any unusual pest or disease is observed.

Forest plantations should be adequately fenced to ensure that trespass does not occur from livestock. For comprehensive information on Forest Protection, see Forest Protection Guidelines published by the Forest Service.

CHAPTER 10

Mapping

Please refer to the Forestry Schemes Mapping Standards available on the Departments website - http://www.agriculture.gov.ie/forestservice/

CHAPTER 11

Environmental Protection and Controls - Consultation Process.

11.1 Overview

The Forest Service places great emphasis on a careful evaluation of the environmental implications of any afforestation proposal. Cases which 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 chapter. At development planning stage (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 and the Marine, has published the following set of guidelines:

- *Forestry and Water Quality*
- *Forestry and the Landscape*
- *Forestry and Archaeology*
- *Forestry Biodiversity*
- *Forestry and Aerial Fertilisation*
- *Forest Harvesting and the Environment*
- *Forest Protection*
- *Forestry and Freshwater Pearl Mussel Requirements*
- *Forestry and Otter*
- *Forestry and Kerry Slug*

The *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* (the Code) describes, 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 and the Guidelines (applicable at the time of approval) may result in grant 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:

- Planning and design of each project in accordance with the Code and the Guidelines.
- EIA sub-threshold screening process
- Appropriate Assessment Procedure
- Consultation process with prescribed bodies.
- Public consultation process
- Appeals procedure.
- Forest Service inspections

The European Communities (Forest Consent and Assessment) Regulations (S.I. No. 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** outlines the environmental considerations and the appropriate prescribed consultation bodies.

Table 19. Application form guidance (*This section refers to Form 1, Page 3, heading "Environmental considerations"*)

	Environmental Consideration	Afforestation Scheme		Referral for Other Schemes. Note: Public consultation only applies to Afforestation and Road schemes	
		Referral Body	Referral period	Roads	Recon*
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 >5.0 ha and sensitive for fisheries?	Inland Fisheries Ireland	4 weeks	4 weeks	4 weeks
1.3	Is the area non-sensitive for fisheries and >40.0 ha?	Inland Fisheries Ireland	4 weeks	4 weeks	4 weeks
1.4	Is the area >10.0 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 pNHA, NHA, SAC, SPA or National Park? Specify site code(s)**	NPWS*,	2 months	2 months	2 months
		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 NPWS) included?				
2.3	If the area is within a Hen Harrier SPA, will operations occur between the 1st April and 15th August inclusive?	NPWS*	2 months	2 months	2 months
2.4	If the area within a NPWS referral zones for NHA, pNHA, SAC or SPA?	NPWS*	2 months	2 months	4 weeks
2.5	Is the area within 3km upstream of a NHA, pNHA, SAC or SPA of National Park? Specify site code(s)	NPWS*	2 months	2 months	4 weeks
2.6	Is the area within a Freshwater Pearl Mussel 6km zone? If YES, the Forestry and Freshwater Pearl Mussel Requirement Forms A and B should be included with the application.	NPWS*	2 months	2 months	4 weeks
2.7	Is the area within a Freshwater Pearl Mussel catchment?	NPWS	2 months	2 months	4 weeks
2.8	Does the area contain a REPS Plan habitat?	DAFM			
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 mths	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 25.0 ha?	Local Authority	4 weeks	N/a	
6.	**Other Environmental Considerations**				
6.1	Specify	As necessary	4 weeks	4 weeks	

**** Forest Service will not approve an application in a designated site unless a response has been received from NPWS.***

Note: If present, all items listed may require the Forest Service to consult with prescribed bodies. Consultation is dependent on type and scale of 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.

Explanatory Notes in Relation to Form 1

Water quality

Q 1.1 Is the area designated potentially acid sensitive by the Forest Service?

Where proposed planting sites fall into areas designated as acid sensitive by the Department, the water sampling and testing protocol must be consulted and, where appropriate, question 1.1 should be ticked in the yes column. The 6'' Ordnance Survey (scale 1:10,560) map numbers that have been designated in this way are listed in Appendix 18.

Where a site is completely free draining with no aquatic zones and therefore cannot provide water samples for testing, it is necessary to establish whether there is an aquatic zone or zones on the same holding (area covered by same folio) down slope from the proposed planting site. If such an aquatic zone exists on the same holding, then sampling and testing for Calcium carbonate ($CaCO_3$) must be the carried out in that zone. If no aquatic zone exists on the holding down slope of the proposed planting site, the protocol does not apply and normal approval procedures apply for that site, subject to inspection and confirmation of such by the Forestry Inspector.

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

Where all three bullet points below are satisfied, Q1.2 should be ticked in the yes column

- one (or more) aquatic zone(s) (lake, river, or stream shown on a 6'' Ordnance Survey Map, scale 1;10560m or the rivers dataset on iNET) traverses or is adjacent to the proposed planting site
- the proposed planting site is in an area designated as sensitive to fisheries by Inland Fisheries Ireland
- 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. Areas which may be sensitive to fisheries are listed in Appendix 21.

Q 1.3 Is the area non-sensitive for fisheries and > 40.0 ha?

Where all three bullet points below are satisfied, Q1.3 should be ticked in the yes column

- one (or more) aquatic zone(s) (lake, river, or stream shown on a 6'' Ordnance Survey Map, scale 1;10560m, or the rivers dataset on iNET) traverses or is adjacent to the proposed planting site
- the proposed planting site does not fall into an area designated as sensitive to fisheries by Inland Fisheries Ireland
- 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 all necessary consultations.

Q 1.4 Is the area > 10.0 ha and within a catchment area of a Local Authority designated water scheme?

Where the proposed planting site falls within a catchment area of a water scheme designated as sensitive to forestry in the County Development Plan and is greater than 10 hectares, question 1.4 should be ticked in the yes column.

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

Designated habitats

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

Where the proposed planting site falls within a Natural Heritage Area (NHA), proposed Natural Heritage Area (pNHA), Special Area of Conservation (SAC), Special Protection Area (SPA) or National Park, question 2.1 should be ticked in the "yes" column. A note must be made of the site code or name associated with the NHA, pNHA, SAC, SPA or National Park.

The European Communities (Natural Habitats) Regulations, 1997, (S.I. No. 94/1997) (as amended) transposed the Habitats Directive (92/43/EEC) into Irish National law. These Regulations, and the European Communities (Birds and Natural Habitats) (Control of Recreational Activities) Regulations 2010, were consolidated in the recently published European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011).

The Habitats Directive provides for the establishment of Natura 2000 sites which are composed of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). Further information on designated sites in Ireland is available on the National Parks and Wildlife Service website (www.npws.ie).

All applications within areas designated as a NHA, pNHA, SAC, SPA or National Park must be referred to NPWS for their observations.

Q 2.2 If the area is within a NHA, is a completed Notifiable Action Form/Action Requiring Consent Form (consent from National Parks and 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 Q2.2 should be ticked in the "yes" column.

A dual consent process exists for the planting or cutting of trees within Natural Heritage Areas (NHAs). Therefore an applicant must obtain both the consent of the Minister of Arts, Heritage and the Gaeltacht and the Minister for Agriculture, Food and the Marine. The consent of the Minister of Arts, Heritage and the Gaeltacht is obtained by submitting a Notifiable Action Form/Action Requiring Consent Form (i.e. Application for

permission to carry out an operation or activity on a site to which the Wildlife (Amendment) Act 2000 (Section 19) applies) to National Parks and Wildlife Service, who complete the form and return it to the applicant. The Notifiable Action Form is available to download on the NPWS website (www.npws.ie).

Q2.3 If the area is within a Hen Harrier SPA, will operations occur between the 1st of April and the 15th of August inclusive?

The Hen Harrier nesting season is from the 1st of April to the 15th of August inclusive. Where the proposed planting will occur between those dates, question 2.3 should be ticked in the "yes" column.

If mechanical operations are to occur in this time period there is the potential to disturb nesting Hen Harriers and a habitat and/or bird survey maybe required.

Q2.4 Is the area within a NPWS referral zone for NHA, pNHA, SAC or SPA? Specify site code(s).

Where the proposed planting site is within a NPWS referral zone (0.5km referral zone or 3km referral zone - upstream and with hydrological connectivity) for a NHA, pNHA, SAC or SPA, question 2.4 should be ticked in the "yes" column. The Forest Service will refer these applications to NPWS for their observations.

Please note that it is an offence to contravene the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 477 of 2011) and a person may be liable;

- on summary conviction to a Class A fine or imprisonment for a term not exceeding six months or both or
- on conviction on indictment , to a fine not exceeding €500,000 or imprisonment for a term not exceeding three years or both.

See also Forest Service Penalty System Chapter 12.

Q2.5 Is the area within 3 km upstream of a NHA, pNHA, SAC, SPA, or National Park? Specify site code(s).

Where the proposed planting site falls within 3 km upstream of a NHA, pNHA, SAC, SPA, or National Park, question 2.5 should be ticked in the "yes" column. The answer to this question will help inform the answer to Q2.4 (i.e. determining whether applications within the NPWS 3 km referral zone are upstream).

Q2.6 Is the area within a Freshwater Pearl Mussel 6km zone? If YES, the Forestry and Freshwater Pearl Mussel Requirements Forms A and B should be included with the application.

The Forestry and Freshwater Pearl Mussel (FPM) Requirements were published in 2008 and apply to all impacting forest operations within the catchments of FPM populations in rivers designated Special Areas of Conservation for the species (27FPM populations, 19 SACs). Table 4 of the Requirements outlines various catchment sensitivities and specifies the correct element of the Requirements to be applied in each particular instance.

If an application is within a FPM 6km zone and the Requirements apply, Form A (FPM Site Assessment – Site Description) and Form B (FPM Site Assessment – Mitigation Measures) must be submitted with the application. The Forestry and FPM Requirements are available on the Forest Service website:
http://www.agriculture.gov.ie/forestservice/environmentalinformation/

Q2.7 Is the area within a Freshwater Pearl Mussel catchment?

If an application is within the FPM catchment, but not within the FPM 6km zone, the Forestry and FPM Requirements only apply if:

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

Q 2.8 Does the area contain a current REPS habitat?

Where the proposed planting site contains a current REPS habitat, question 2.8 should be ticked in the "yes" column. Please refer to Chapter 13 for further information.

Q 3.1 Does the area contain an archaeological site or feature with intensive public usage?

Where the proposed planting site contains an archaeological site or feature with intensive public usage, question 3.1 should be ticked in the "yes" column and the location of the site appropriately marked on the Biodiversity Map. Although not required, a speedier processing of the application may be facilitated if the archaeological site's Record of Monument and Places (RMP) number is included in the Biodiversity Map Legend or a photocopy of the original Record of Monument and Places (RMP) map included with the Form 1.

Q 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, question 3.2 should be ticked in the "yes" column and the location of the site appropriately marked on the Biodiversity Map. Although not required, a speedier processing of the application may be facilitated if the archaeological site's Record of Monument and Places (RMP) number is included in the Biodiversity Map Legend or a photocopy of the original Record of Monument and Places (RMP) map included with the Form 1.

Damage to archaeological sites is irreversible. The constraints relating to such sites are summarised in the Forestry and Archaeological Guidelines published by the Forest Service. Details of the public venues for inspecting Record of Monument and Places (RMP) maps identifying the locations of these sites are available from NMS, DAHG. See Appendix 22.

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

Landscape

Q 4.1 Is the area within a prime scenic area in the County Development Plan?

Where the proposed planting site falls within an area which (i) is subject to an Area of Special Amenity Order confirmed by the Minister for Arts, Heritage and Gaeltacht, and/or (ii) 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 the County Development Plan, question 4.1 should be ticked in the "yes" column.

Q 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, Question 4.2 should be ticked in the "yes" column and a brief note included stating the consideration.

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

Size for notification to Local Authority

Q 5.1 Is the area greater than 25 ha

If the gross area of the proposed planting site is greater than 25 hectares, Question 4.2 should be ticked in the "yes" column.

Other environmental considerations

Q 6.1 Specify

Where there are any other known local historical interests (i.e. old sport fields etc.) water, habitats, archaeology or landscape considerations, or any other environmental considerations not covered above, Question 6.1 should be ticked in the "yes" column. The details of the consideration should be specified.

Photo 13 : Environmental considerations such as archaeology, water and landscape must be identified on applications proposed.

11.2 Public Consultation Process

When the Minister receives an application for approval in respect of a proposed afforestation or forest road development, a notice of the application will be published on the Department's website. The information published will include the reference number, townland, D.E.D., and the nature and extent of the development. The non-personal information on the application form and the map of the site on which the development is proposed is made available for inspection free of charge in the Forest Service office in Johnstown Castle Estate in Wexford.

In addition to the public notice mentioned above, where the proposed development falls within any one of the categories at **2.1, 3.1, or 4.1** on Page 3 of Form 1, a notice of the application will be published in a newspaper circulated in the district where the land is situated.

Members of the public may make a submission or observation in relation to the application within four weeks of the date of publication of the notice. The Forest Service when considering the application will, *inter alia*, have regard to any submission received. When the Forest Service makes a decision on an application, any person who made a submission will be notified of the decision and the application is held for a further 21 days during which time the person who made the submission can appeal the decision.

11.3 Appeals Process

This procedure involves an Appeals Committee which considers appeals to Forest Service decisions on afforestation applications.

The Appeals Committee was set up on an administrative basis to coincide with the introduction of the enhanced consultation procedure referred to earlier.

Table 20. Other consultation / referral procedures

Areas	Consultation type	Consultation Period
Afforestation of areas of 50ha or more Forest road works exceeding 2,000 meters in length	Mandatory EIA required as per European Communities (Environmental Impact Assessment) Regulations 1989 (S.I. No. 349 of 1989), as amended Mandatory EIA required as per Planning and Development Regulations 2001 (S.I. No. 600 of 2001) as amended by Planning and Development Regulations 2008 (S.I. No. 235 of 2008)	N/A
Areas of all sizes within 60m of a dwelling or associated building	Applicant must consult with owner-occupier of a dwelling.	N/A
Airport	Applications are referred to appropriate aviation authority.	normally 1 month

11.4 Environmental Impact Assessment (EIA)

The EIA Directive (Directive 37/335/EEC) 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 which are covered by the EIA Directive are listed in the Annex I and II of the Directive and includes, inter alia, initial afforestation, deforestation and 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 deciding to approve the EIS or not, and the public response to that decision. (Note: 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 environmental impact assessment 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 and Assessment) Regulations 2010 (S.I. No. 558 of 2010) which designates the Minister for Agriculture, Food and 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 schemes:

- 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. No. 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 and, 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.

11.5 Appropriate Assessment Procedure

The Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC) set out various procedures and obligations regarding nature conservation management in EU Member States, with a strong focus on Natura 2000 sites, i.e. Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). A key protective measure required is to undertake an appropriate assessment to ensure that any possible nature conservation impacts on a Natura site arising from a plan or project are considered, before a decision is taken to grant (or refuse) consent for the plan or project.

There are four stages to the Appropriate Assessment Procedure namely:

- Stage 1 Screening
- Stage 2 Appropriate Assessment

- Stage 3 Alternative Solutions
- Stage 4 Imperative Reasons of Overriding Public Interest (IROPI)

The Forest Service Appropriate Assessment Procedure (AAP) applies to applications for Forest Service grant schemes, licences and consents in respect of forestry operations within Natura sites (SAC or SPA) or within the NPWS 0.5 km or 3 km (with hydrological connectivity) referral zone of Natura sites. Further information is available in the Forest Service Appropriate Assessment Procedure Information Note (see Forest Service website).

11.6 European Communities (Forest Consent and Assessment) Regulations 2010

The **European Communities (Forest Consent and Assessment) Regulations 2010 (**S.I. No. 558 of 2010) were signed into law with effect from **14th October 2010**.

The Regulations update and replace Part 5 of the European Communities (Environmental Impact Assessment) (Amendment) Regulations 2001 (S.I. No. 538 of 2001) (*which have been revoked*), to take account of Ireland's obligations under the Directive 85/337/EC (*EIA Directive*), as amended.

All persons operating in the forestry sector should familiarise themselves with the provisions of the 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. No. 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.

The main changes are summarised below:

a. Obligation to obtain approval

The obligation to obtain the prior approval of the Minister for Agriculture, Food and the Marine in respect of afforestation (*which was required under S.I. No. 538 of 2001*) has been extended to include "forest road works".

"*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 trees), but not where such construction consists of the provision of access to a public road"*.

"*afforestation*" is defined "*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"*

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.

Note: The Regulation has no impact on afforestation and forest road construction projects with prior approval under grant support schemes operated by the Department. The existing environmental assessment and approval procedures which are applied to those Schemes will satisfy the requirements of the Regulations.

Further guidance in relation to approval procedures for forest road projects is provided in section 11.7

b. Public Consultation

The Regulations place a statutory obligation on the Minister to notify the public of all applications received and allow the public a minimum of 4 weeks in which to make a submission.

c. Offences

The Regulation introduces a number of offences, including offences for undertaking afforestation or forest road construction projects without the approval of the Minister.

d. Penalties

A person who commits an offence under the Regulations is liable to prosecution and may face fines of up €5,000 on summary conviction or up to €250,000 on conviction on indictment

e. Directions in respect of certain work

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

Further information

Enquiries in relation to the operation of Regulations should be made in writing (by post of e-mail) to:

Approvals Section,
Forest Service,
Department of Agriculture, Food and the Marine,
Johnstown Castle Estate,
Co. Wexford
E-mail: forestservice@agriculture.gov.ie

11.7 Forest Road Approval System: Guidance for seeking approval for the construction of forest roads

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.

Forest Road Grant Scheme

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

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

Other Forest Road projects

Where no grant assistance is being sought in respect of 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 of non grant-aided forest road developments are being facilitated via the existing IFORIS iNET system.

Definition of "forest road works"

Under the Regulation,

- '***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 a grant 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, therefore, require the prior approval of the Minister:

a. Construction of forest roads (*including works ancillary to such construction*) where the works commenced before 14th October 2010,
b. Upgrade or repair to existing roads and works ancillary to such upgrade or repair,
c. 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 lorries*)
d. Construction of stacking areas (see note below)
e. Construction of turntables (see note below)
f. Construction of lay-bys (see note below)
g. Construction of culverts (see note below)
h. Tree felling to facilitate or enable road works - This felling is subject to the Forestry Act 1946
i. Construction of roads constructed for reasons other than to serve a forest (e.g. to serve a wind farm) Note: Permission under the Planning and Development Act 2000 may be required for such roads.

j. The extension of an existing forest road by up to one third of its length, provided any such extension does not exceed 90 metres, but excluding any extension that would be situated in an SAC, SPA, pNHA or NHA, 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 works listed d, e, f and g above will require approval if undertaken as part of the construction of a new forest road and are ancillary to such construction.

Definition of "works ancillary to road construction"

This definition includes:

- 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)
- Barrow 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.

Photo 14: Forest roads are required to transport timber to markets

CHAPTER 12

Penalty System

Guidelines for the imposition of penalties under the Afforestation Grant and Premium Schemes are outlined below. These penalties apply to plantations approved for grant aid on or after 1st January 2001.

12.1 Imposition of a Penalty

The decision to impose a penalty will be taken at Assistant Principal level by the Grants and Premiums Section of the Forest Service, following the recommendation of the Forestry Inspectorate at the level of Regional Inspector (Grade 1).

Such decision is final, but may be appealed to the Appeals Committee.

The Forest Service fully accepts the concept of partnership, co-operation, and consultation between the Forestry Inspectorate and the registered foresters and forestry companies to achieve best forestry practice. The Forestry Inspectorate will be delegated discretionary powers to allow minor defects, or any related matter, in respect of a plantation to be remedied and no penalty shall apply at that stage.

The applicant, or his or her agent, will be regarded as the principal person or body in respect of which a grant penalty will be imposed. The nominated recipient of the annual forestry premium will be regarded as the principal person or body in respect of which a premium penalty will be imposed.

As a general rule, in any case where a penalty has been imposed, it will be necessary to have remedial action taken, where possible, in respect of that element of the plantation which was the subject of the penalty.

The principle of proportionality will apply. Where practical, any penalty imposed will be in direct proportion to the alleged breach of the conditions of the scheme.

The Forest Service reserves the right to offset the amount of any penalty imposed against any subsequent payment due to the person against whom the original penalty was imposed. Such offsetting will only take place not earlier than 30 days following a written request for remission of the amount due in respect of the penalty and following, where appropriate, determination of the matter under the Forest Service appeals procedure.

Compliance with any letter of approval issued by the Forest Service will not result in the imposition of any penalty.

12.2 Appeals Procedure

The principle of transparency will apply to the imposition of penalties. Where the Forest Service decides to impose a penalty, the applicant/agent will be advised that it is proposed to impose a penalty and given full details. He or she will be afforded at least one month to make representations to the Minister as to why the penalty should not be imposed, and/or take remedial action where possible. If it is decided to impose the penalty, the applicant/agent has the right to appeal the decision to the Forest Service Appeals Committee whose decision will be binding, subject to any further recourse to the Office of the Ombudsman and/or normal legal recourse. Records relating to decisions taken in respect of the imposition of penalties may be available for

examination subject to the terms of the Freedom of Information Act 1997. The Appeals Committee was set up on an administrative basis to coincide with the introduction of the enhanced consultation procedures described in Chapter 11.

12.3 Schedule of Penalties

Area over-declared

Detailed procedures regarding the imposition of penalties with regard to area over-claimed are available from the Forest Service.

Penalty as % of Afforestation Grant

Failure to exclude areas which are ineligible for aid

-unplanted areas	up to 20%
-ESB lines	up to 20%
-gas mains	up to 20%

Failure to identify unenclosed and enclosed area correctly	up to 20%

Failure to comply with environmental guidelines	up to 100%

Failure to comply with specific supplementary environmental conditions	up to *25 %*
-water/fisheries	up to 25%
-NHA's/SAC's	up to 25%
-sites and monuments	up to 25%
-scenic areas	up to 25%
-distance from roads/dwellings	up to 25%
-other	up to 25%

Failure to comply with conditions/governing	
-chemical application	up to 20%
-fertiliser application	up to 20%
-disposal of waste/rubbish	up to 20%
-hazardous fencing	up to 20%
-mounding	up to 20%
-silt traps	up to 20%

Incorrect species selection	up to 100% or replacement

Failure to maintain plantation	***as % of 2nd Instalment Grant***
-at first inspection	up to 20%
-at second inspection	up to 100%

Failure to maintain fences beyond	***as % of Annual Premium***
the second instalment stage	up to 20%

Domestic Stock damage	up to 20%

Failure to control invasive scrub/furze past 2nd instalment stage	up to 20%
Dumping	up to 10%
Over declaration of eligible road length greater than 20%	up to 100%
Failure to comply with conditions of approval letter	up to 100%
Provision of a false statement, false information or false claim	up to 100%

Details regarding the above penalties are explained below.

12.3.1 Area over-declared

Detailed procedures regarding the imposition of penalties with regard to area over claim are available from the Forest Service.

12.3.2 Failure to exclude areas which are ineligible for aid

Unplanted areas
ESB Lines
Gas mains

Where it is found that there has been a failure to exclude those areas and where the Forest Service has established the mapping and ground supervision was not carried out by the approved forester or company in a professional manner, the scheduled penalty shall apply.

12.3.3 Failure to identify unenclosed and enclosed lands correctly

The Forest Service is satisfied that it can be clearly indicated when a site has been improved. The climax vegetation and undisturbed soil profile will clearly indicate unenclosed land. The Forest Service is satisfied that it is only in rare cases where a misinterpretation between enclosed and unenclosed land could occur and that such cases should, in the normal course, have been the subject of consultation with the Forest Service. Where land has been incorrectly classified on a grant claim as a result of the registered forester or company not acting in a professional manner, the scheduled penalty shall apply. No penalty shall apply where, the Forestry Inspector having identified an apparent wrong classification, the forester amends the application immediately.

12.3.4 Failure to comply with environmental guidelines

In any situation where failure to comply with environmental guidelines results in permanent or serious damage to the environment, particularly, but not exclusively, in respect of archaeological sites and monuments or aquatic habitats, the scheduled penalty of non payment of grant or premium payments will apply.

12.3.5 Failure to comply with specific supplementary environmental conditions

The guidelines referred to above set out specific conditions, breaches of which could possibly be remedied. Examples of these breaches include :

- failure to maintain the correct buffer zone from watercourses in respect of both ground preparation and planting
- failure to maintain the correct buffer zone from boundaries of NHA's, SAC's , SPAs and archaeological sites and monuments
- failure to apply the requisite planting set-back distances from roads and dwelling houses
- non adherence to the development plan or species plan submitted with the original application, or disregarding specific environmental conditions imposed in the Forest Service letter of approval.

Where the Forest Service has established that any of the above, or similar breaches of environmental conditions, occurred as a result of the registered forester or company not acting in a professional manner, the scheduled penalty shall apply.

12.3.6 Failure to comply with conditions governing the following:-

Chemical application

Chemicals should be applied according to the manufacturer's instructions and in accordance with the Forest Service Forestry and Water Quality Guidelines.

Fertiliser application

Fertiliser application should be in accordance with the Forest Service Forestry and Water Quality Guidelines.

Disposal of Waste/Rubbish

The disposal of, for example, plastic fertiliser bags, plastic plant bags and oil containers, must be to the standard as specified in the Rural Environment Protection Scheme (REPS) as administered by the Department of Agriculture, Food and the Marine.

Hazardous Fencing

Fencing wire should be below head height or below neck height in respect of barbed wire. All tiebacks should be placed inside the planting site.

Mounding

Mounding should be in accordance with the submitted cultivation plan or in accordance with good forestry practice in terms of direction, spacing density and depth as set out earlier in this Manual.

Silt Traps

Silt traps must be laid down as specified earlier in this manual and should not be left in a dangerous condition or placed in an inappropriate location.

Where the Forest Service has established that failure to comply with any of the conditions governing the above was as a result of incorrect or negligent practice by the applicant/agent, the scheduled penalties will apply.

12.3.7 Incorrect Species Selection

The capability of a site to produce a commercial crop should not be extended. There should not be any deviation from the species as set out in Chapter 9, unless approved in advance by a Forestry Inspector. In any situation where an incorrect species has been selected as a result of the approved forester or company not acting in a professional manner, the scheduled penalty of no grant or premium payments will apply to that area.

12.3.8 Failure to maintain Plantation

If, in the opinion of the Forest Service, the plantation has not been maintained to the standard as set out in this document, the scheduled penalty of up to 20% of the second instalment grant will apply. However, the Forest Service will allow for the Form 3 to be resubmitted where a specific period of time is required to allow for establishment and no penalty will apply. If remedial action is not carried out after an appropriate time, the scheduled penalty of up to 100% (i.e. non-payment of the appropriate 2nd instalment grant) will apply.

12.3.9 Premium Penalties

Any penalties imposed in cases where the second instalment grant has already been paid, will be applied to the annual premium.

In any case where the Forest Service is of the opinion that the landowner has failed to maintain fences, thereby causing damage by stock, or where the landowner has failed to control invasion of scrub and/or furze, the scheduled penalty will apply to the annual premium until such time as the deficiency has been corrected. The scheduled penalty will similarly apply where the Forest Service is of the opinion that the landowner has been responsible for dumping, or allowing the dumping, of waste on the site.

If, for the purposes of obtaining aid under the Scheme, an applicant or person acting on their behalf, knowingly makes a false or misleading statement or withholds information, the aid given shall be reimbursed or withheld. The Minister reserves the right to exclude such a person from further participation in grant aided schemes.

12.4 Cross Compliance Checking Procedures and Premium and Grant Payment

As an accredited EU paying agency, the Department of Agriculture, Food and Marine is obliged to carry out checks and controls on all applications. Detailed documents setting out the requirements and penalties applicable for each area based scheme is available from the relevant section of the Department. Contact details and further information are available on the Department's website.

CHAPTER 13

Interaction of Afforestation Scheme with Agriculture Schemes

13.1 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 remains an option for these participants for as long as they remain in REPS.

A REPS participant is free to plant land without incurring any REPS penalties. However he/she will not receive REPS payments on the planted lands but will be entitled to afforestation grants and premiums. A change in land use to forestry during the period of the REPS plan will necessitate a revision of the REPS Plan. REPS payments will not be made for the calendar year in which the land is planted.

13.2 Application for approval of sites containing REPS habitats

If the site proposed for afforestation contains a REPS habitat (Question 2.3 on page 3 of Form 1 is ticked 'yes') the registered forester must state type of habitat and provide a copy of the REPS Plan map. The Department's REPS section must agree that a habitat can be planted before the area can be considered for afforestation.

Further information regarding REPS may be obtained from REPS Section, Department of Agriculture, Food and the Marine, Johnstown Castle Estate, Co. Wexford (053-9163400).

13.3 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 4.6 for further information on change of ownership).

13.4 Single Farm Payment 2011 and Forestry

Following changes to EU Regulations governing the Single Payment System, 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 wish to benefit from the Single 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 to 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 Single Payment on afforested land must be the person or persons in joint management of receipt of afforestation premium. This applies to members of the same family.
- The afforested land meets all the requirements of the Afforestation Grant and Premium Scheme, FEPS or the Native Woodland Establishment Scheme;
- Eligible forestry parcels that are declared on SPS applications to activate entitlements will also be subject to cross-compliance requirements.
- Consolidation of newly afforested land is no longer required.

CHAPTER 14

Forestry Schemes

The Forest Service provides a number of schemes targeted at expanding and developing the forest estate. These schemes are described on the Department of Agriculture, Food and the Marine's website and must be read in conjunction with this Manual, Code of Best Forest Practice, associated guidelines and industry circulars, which are a requirement of approval and grant aid.

The Department's website can be accessed from the link below

http://www.agriculture.gov.ie/forestservice/

The level of funding available for each scheme will be determined by the budgetary allocation provided in any particular year. Information on the current funding status for each scheme is available from the Department.

The following schemes documents are available on the Department's website which you must read prior to making an application;

- Afforestation Scheme
- Forest Environment Protection Scheme (FEPS)
- Native Woodland Establishment Scheme*
- Forest Roads Scheme
- Woodland Improvement (Thinning and Tending only)
- Reconstitution Scheme
- NeighbourWood Scheme*
- Native Woodland Conservation Scheme*

***Scheme documents for these schemes are available in the form of a manual which is available on the DAFM website**

APPENDIX 1 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 Nationa 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 Service *Forestry Schemes Manual* and/or the *Native Woodland Scheme Manual* , and that where applicable the original Supplier's 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 original is available for inspection.

Applicant's signature: _____
or
Name of Contractor: _____

Contractor's Authorised Person: _____

Authorised Person's signature: _____

Date: _____

Contractor Stamp (where applicable)

Version: 21/2/03

APPENDIX 2

MANDATE OF GRANTS

Mandates /assignments of payments to Registered Foresters / Forestry Companies must comply with the following:

1 All mandate / assignment forms 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 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:- "*This mandate / assignment in favour of 'X' applies only on the satisfactory completion of the work by 'X'.*"

7 The mandate / assignment must state clearly whether one or both instalments of the grant is referred to.

8 The grant applicant should be independently advised as to the nature and extent of the mandate / assignment and the following sentence included:- "*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."

APPENDIX 3

MANDATE/ASSIGNMENT OF GRANT TO REGISTERED FORESTER / FORESTRY COMPANY (Sample)

Forest Service Contract No. ☐

1. 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.

2. 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)*

3. 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.

4. This Authorization is irrevocable without the prior written consent of _____(*the Company*)

5. This Mandate / Assignment in favour of _____ (*the Company)* applies only on

   satisfactory completion of the work by _____(*the Company aforementioned)*

6. I have been independently advised as to the nature and extent of this mandate / assignment and I am aware of its contents.

7. 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:

Company Seal

BANK ACCOUNT NO:_____

BANK NAME: _____

BANK SORT CODE:_____

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

Name(Block Capitals)_____

APPENDIX 4 - Sample management plan Year 5 to Year 10

APPLICANT DETAILS	PLANTATION LOCATION
Name: *Mr Joe Bloggs*	**Contract No:** *CN1234*
Address: *Farm House* *Co Wexford* **Contact No:** *053 9112345*	**Townland:** *Ballymote* **County:** *Wexford* **O.S 6"MapNo:** *WX 24*

Current Plantation Plot Details*

Plot	Area Ha	Land Use Type	Species	Species Canopy %	Mixture Type	Planting Year	Est. Yield Class	Avg Height (m)	Estimated Year of First Thinning/ Respacing	Est. Clearfell age	Excl Area	Excl Type
1	*8.5*	*CHF*	*DF*	*100*	*P*	*2001*	*18*	*3.8*	*2020-2023*	*2047 (46yrs)*	*-*	*-*
2	*2.0*	*MHF*	*PO*	*50*	*R*	*2001*	*6*	*1.9*	*2016-2020*	*2131 (130yrs)*	*-*	*-*
			SP	*50*	*R*	*2001*	*12*	*2.0*	*2016-2020*	*-*	*-*	*-*
Total	*10.5*											

* In order to update the above details, all plots must be accessible in the plantation. Access to all plots will facilitate future management and Department inspections. The above plot details and plot boundaries on the current certified species map must accurately reflect the forest on the ground.

Certified Species Map

Revised Map dated and signed by Forester ☐

No revisions required ☑
(Forester must sign and date existing map to certify that no revisions are required)

Inspection Paths

Present every ~ 100 m ☐

Existing access adequate ☐

Harvesting Road Present

Yes ☑

No ☐

Road required for harvesting ☐

Fire Plan Map attached

Yes ☑

No ☐

MANAGEMENT CHECKLIST YEAR 5 to 10

The following management operations and decisions should be addressed over the next 10 years	***Yes***	***No***	***N/A***
• Check weed growth on established sites and control if necessary	✔		
• Maintain fences, drains and silt traps	✔		
• Maintain firebreaks and access tracks	✔		
• Vermin Control	✔		
• Monitor crops for signs of insect and fungal damage and take appropriate action if necessary	✔		
• Carry out foliar analysis and apply fertiliser if necessary	✔		
• If access is not adequate, install and maintain inspection paths at 100m intervals to monitor crops performance	✔		
• Formative shaping of broadleaves where required	✔		
• Monitor growth rates of conifers in broadleaves mixtures.	✔		
• Assess stocking rates and volume of crop and prepare for thinning. First thinning usually takes place between 18 and 25 years of age, depending on species.	✔		
• Apply to the Forest Service for a general felling license before tending/thinning	✔		
• Remember to revise management plan and resumit for years 10 - 20	✔		
• Other	✔		

GENERAL COMMENTS

- *Deer culling is taking place in surrounding fields to prevent browsing damage which is currently localised in northern section of crop*
- *I have joined a local timber producer group with the aim of marketing timber in the future and to explore certification to a recognised forest management standard*

Declaration by Registered Forester

I declare that I have carried out a field assessment to prepare this management plan and have correctly recorded and updated all species, areas and plot boundaries on the attached certified species map.

Foresters Name	John Forester BAgrSC Goodtrees Ltd	**Date of Field Assessment**	*1/11/2005*
Foresters Signature	*John Forester*	**Date of Report**	*3/11/2005*
Forest Owners Name	John Farmer		
Forest Owners Signature	*John Farmer*	**Date**	*4/11/2005*

APPENDIX 5 - Sample management plan Year 10 to Year 20

APPLICANT DETAILS	PLANTATION LOCATION
Name: *Mr Joe Bloggs*	**Contract No:** *CN1234*
Address: *Farm House* *Co Wexford* **Contact No:** *053 9112345*	**Townland:** *Ballymote* **County:** *Wexford* **O.S 6"MapNo:***WX 24*

Current Plantation Plot Details*

Plot	Area Ha	Land Use Type	Species	Species Canopy %	Mixture Type	Planting Year	Est. Yield Class	Top Height (m)	Estimated Year of First Thinning/ Respacing	Est. Clearfell age	Excl Area	Excl Type
1	*8.5*	*CHF*	*DF*	*100*	*P*	*2001*	*18*	*6.2*	*2020-2023*	*2047 (46yrs)*	*-*	*-*
2	*2.0*	*MHF*	*PO*	*50*	*R*	*2001*	*6*	*3.8*	*2016-2020*	*2131 (130yrs)*	*-*	*-*
			SP	*50*	*R*	*2001*	*12*	*6.1*	*2016-2020*	*-*	*-*	*-*
Total	*10.5*										*-*	*-*

* In order to update the above, details all plots must be accessible in the plantation. Access to all plots will facilitate future management and Department inspections. The above plot details and plot boundaries on the current certified species map must accurately reflect the forest on the ground.

Certified Species Map

Revised Map dated and signed by Forester ☑

No revisions required ☐
(Forester must sign and date existing map to certify that no revisions are required)

Inspection Paths

Present every ~ 100 m ☑

Existing access adequate ☑

Harvesting Road Present

Yes ☑

No ☐

Road required for harvesting ☐

Fire Plan Map attached

Yes ☑

No ☐

MANAGEMENT CHECKLIST YEAR 10 to 20

The following management operations and decisions should be addressed over the next 10 years	***Yes***	***No***	***N/A***
• Maintain fences, drains and silt traps	✔		
• Maintain firebreaks and access tracks	✔		
• Monitor crops for signs of insect and fungal damage and take appropriate action if necessary	✔		
• Carry out foliar analysis and apply fertiliser if necessary	✔		
• If access is not adequate, install and maintain inspection paths at 100m intervals to monitor crops performance	✔		
• Monitor growth rates of conifers in broadleaves mixtures. Decide to remove or partly remove conifers from mixtures before broadleaves are suppressed. Tending of broadleaves may also be required.	✔		
• Assess stocking rates and volume of crop and prepare for thinning. First thinning usually takes place between 18 and 25 years of age depending on species.	✔		
• Apply to the Forest Service for a general felling license before thinning	✔		
• Market timber for sale and monitor volume removed. Owners should consider a cooperative approach when thinning. Larger volumes will improve the sale and marketing of timber. Advice is available from a number of organisations. Contact Forest Service for more details	✔		
• Assess need for a harvesting road and construct if necessary	✔		
• Repair Roads after harvesting	✔		
• Other	✔		

GENERAL COMMENTS

Broadleaved/ conifer mixtures will be monitored over the next 10 years. Where Scots pine is competing with and suppressing oak, the mixture will respaced favouring the oak.
A General Felling Licence covering all potential tree felling over the next 10 years has been received from the Forest Service and is valid for 5 years.

Declaration by Registered Forester

I declare that I have carried out a field assessment to prepare this management plan and have correctly recorded and updated all species, areas and plot boundaries on the attached certified species map.

Foresters Name	John Forester BAgrSC Goodtrees Ltd	**Date of Field Assessment**	*20/11/2011*
Foresters Signature	*John Forester*	**Date of Report**	*30/11/2011*
Forest Owners Name	John Farmer		
Forest Owners Signature	*John Farmer*	**Date**	*30/11/2011*

APPENDIX 6 - Sample management plan Year 5 to Year 10

APPLICANT DETAILS	PLANTATION LOCATION
Name:	**Contract No:**
Address: **Contact No:**	**Townland:** **County:** **O.S 6"MapNo:**

Current Plantation Plot Details*

Plot	Area Ha	Land Use Type	Species	Species Canopy %	Mixture Type	Planting Year	Est. Yield Class	Avg Height (m)	Estimated Year of First Thinning/ Respacing	Est. Clearfell age	Excl Area	Excl Type
Total												

* In order to update the above, details all plots must be accessible in the plantation. Access to all plots will facilitate future management and Department inspections. The above plot details and plot boundaries on the current certified species map must accurately reflect the forest on the ground.

Certified Species Map

Revised Map dated and signed by Forester ☐

No revisions required ☐
(Forester must sign and date existing map to certify that no revisions are required)

Inspection Paths

Present every ~ 100 m ☐

Existing access adequate ☐

Harvesting Road Present

Yes ☐

No ☐

Road required for harvesting ☐

MANAGEMENT CHECKLIST YEAR 5 to 10

The following management operations and decisions should be addressed over the next 10 years	***Yes***	***No***	***N/A***
• Check weed growth on established sites and control if necessary			
• Maintain fences, drains and silt traps			
• Maintain firebreaks and access tracks			
• Vermin Control			
• Monitor crops for signs of insect and fungal damage and take appropriate action if necessary			
• Carry out foliar analysis and apply fertiliser if necessary			
• If access is not adequate, install and maintain inspection paths at 100m intervals to monitor crops performance			
• Formative shaping of broadleaves where required			
• Monitor growth rates of conifers in broadleaves mixtures.			
• Assess stocking rates and volume of crop and prepare for thinning. First thinning usually takes place between 18 and 25 years of age depending on species.			
• Apply to the Forest Service for a general felling license before tending/thinning			
• Remember to revise management plan and resumit for years 10 - 20			
• Other			

GENERAL COMMENTS

Declaration by Registered Forester

I declare that I have carried out a field assessment to prepare this management plan and have correctly recorded and updated all species, areas and plot boundaries on the attached certified species map.

Foresters Name		**Date of Field Assessment**	
Foresters Signature		**Date of Report**	
Forest Owners Name			
Forest Owners Signature		**Date**	

APPENDIX 7 - Sample management plan Year 10 to Year 20

APPLICANT DETAILS	PLANTATION LOCATION
Name:	**Contract No:**
Address: **Contact No:**	**Townland:** **County:** **O.S 6"MapNo:**

Current Plantation Plot Details*

Plot	Area Ha	Land Use Type	Species	Species Canopy %	Mixture Type	Planting Year	Est. Yield Class	Avg Height (m)	Estimated Year of First Thinning/ Respacing	Est. Clearfell age	Excl Area	Excl Type
Total												

* In order to update the above, details all plots must be accessible in the plantation. Access to all plots will facilitate future management and Department inspections. The above plot details and plot boundaries on the current certified species map must accurately reflect the forest on the ground.

Certified Species Map

Revised Map dated and signed by Forester ☐

No revisions required ☐
(Forester must sign and date existing map to certify that no revisions are required)

Inspection Paths

Present every ~ 100 m ☐

Existing access adequate ☐

Harvesting Road Present

Yes ☐

No ☐

Road required for harvesting ☐

Fire Plan Map attached

Yes ☐

No ☐

MANAGEMENT CHECKLIST YEAR 10 to 20

The following management operations and decisions should be addressed over the next 10 years	***Yes***	***No***	***N/A***
• Maintain fences ,drains and silt traps			
• Maintain firebreaks and access tracks			
• Monitor crops for signs of insect and fungal damage and take appropriate action if necessary			
• Carry out foliar analysis and apply fertiliser if necessary			
• If access is not adequate install and maintain inspection paths at 100m intervals to monitor crops performance			
• Monitor growth rates of conifers in broadleaves mixtures. Decide to remove or partly remove conifers from mixtures before broadleaves are suppressed. Tending of broadleaves may also be required.			
• Assess stocking rates and volume of crop and prepare for thinning. First thinning usually takes place between 18 and 25 years of age depending on species.			
• Apply to the Forest Service for a general felling license before thinning			
• Market timber for sale and monitor volume removed. Owners should consider a cooperative approach when thinning. Larger volumes will improve the sale and marketing of timber. Advice is available from a number of organisations. Contact Forest Service for more details			
• Assess need for a harvesting road and construct if necessary			
• Repair Roads after harvesting			
• Other			

GENERAL COMMENTS

Declaration by Registered Forester

I declare that I have carried out a field assessment to prepare this management plan and have correctly recorded and updated all species, areas and plot boundaries on the attached certified species map.

Foresters Name		**Date of Field Assessment**	
Foresters Signature		**Date of Report**	
Forest Owners Name			
Forest Owners Signature		**Date**	

APPENDIX 8

CERTIFICATION OF LAND TRANSFER

(to be completed by a Solicitor)

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

Solicitor Stamp

Name of Solicitor _____

Name of Firm _____

Date: _____

APPENDIX 9

CERTIFICATE OF TITLE
for forestry lands transferred within a family

(To be completed by a Solicitor)

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

Contract No. ☐

Name(s) of Clients: _____

Address: _____

Location of Property: Townland(s): _____

County: _____

I hereby certify that:

1. All the lands indicated on the attached map, which I have signed and stamped, with **boundaries marked in red** are

Registered in Folio no(s)_____
Or
Registered with the Registry of Deeds _____

2. Folio / Ownership registration is presently in the name/s of _____

Relationship of named landowner to client _____

3. The lands are not subject to Turbary or Grazing rights or Rights of Way ☐

4. My Client (s) _____ is (are)

(i) the registered owner(s) of the lands; ☐

(ii) the person(s) entitled to be registered as owner(s) of the lands; ☐

Please tick appropriate box

I hereby undertake to furnish evidence of Title to the Department of Agriculture, Food and the Marine (Forest Service) when it becomes available, if requested.

My/Our firm currently holds Professional Indemnity Insurance Cover with a qualified Insurer as defined under Statutory Instrument No. 312 of 1995.

I/we give this certificate for the benefit of the Forest Service only.

Signature of Solicitor:_____

Name of Solicitor: _____

Name of Firm: _____

Date: _____

Solicitor
Stamp

APPENDIX 10

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 11

JOINT MANAGEMENT CONSENT FORM

Department of Agriculture, Food and the Marine **J M C 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 / FEPS/ 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

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 12
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 _____

Solicitor's stamp

APPENDIX 13
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 _____

Solicitor's stamp

APPENDIX 14

LAND TYPES FOR AFFORESTATION

Introduction

Forest Service afforestation schemes (Afforestation Scheme, Forest Environment Protection Scheme and Native Woodland (Establishment) Scheme) provide premiums to incentivise the planting of agricultural land. The different rates of premium available under these schemes reflect differences in existing levels of agricultural output associated with land quality.

Agricultural land in Ireland can be broadly divided into two types: (i) enclosed/improved land and (ii) unenclosed/unimproved land. While most land will clearly be in one type or the other, borderline cases will arise. These borderline cases must be ascribed to one or the other type, based on which of the following definitions most applies.

Enclosed/Improved (E/I) land

The E/I land type generally includes land that is enclosed and improved for agricultural use by cultivation and manuring, and which is completely surrounded by man-made boundaries. These lands are usually shown as being enclosed on 6 inch Ordinance Survey maps (1:10,560), and this can be indicative of existing agricultural use.

E/I land includes land that has been under intensive agricultural use since prior to 1st January 2004 and carries vegetation predominately of pasture grasses and herbaceous plants. On wet soils, there may be a high proportion of rushes. E/I land is typically associated with fertile soil types suitable for a wide range of tree species, and will normally have a plough layer in the soil profile, i.e. a distinctive dark surface horizon in which organic matter has been incorporated with mineral matter. Vegetation on E/I land will typically be that associated with commercial agricultural use, e.g. pasture, grass-herb, grass-rush, tillage crops.

This land type may also include grass lands which have partly reverted to bracken and furze. Recent tillage land would also be included in this type. E/I land type does not normally require phosphorus fertiliser for successful tree growth. Enclosed agricultural land on midland fen peats currently in grass may require an application of potassium and is eligible to be considered as E/I land.

E/I land can be considered for Grant & Premium Categories (GPCs) 2 to 8. The higher rates of premium associated with these GPCs reflect the existing levels of agricultural output forgone if these lands were afforested.

Unenclosed/Unimproved (U/U) land

U/U land is normally associated with peat soils or other poor soils and includes areas that have not been cultivated or brought under intensive commercial agricultural use successfully over a sustained period. These lands are generally used for extensive grazing and have low levels of existing agricultural productivity. In practice, almost all land not classifiable as E/I will be U/U land.

The U/U land type generally includes sites with natural vegetation associated with heath land or peat land, e.g. Purple Moor Grass (*Molinia caerulea*),Cross Leaved Heath (*Erica tetralix*), Ling heather (*Caluna vulgaris*), Moss (*Sphagnum* and *Hylocomium* spp.), Cotton grass (*Eriophorum*

vaginatum), Deergrass (*Trichophorum caespitosum*), Black bog rush (*Shoenus nigricans*), Bilberry (*Vaccinium* spp.), Sedge (*Carex* spp.), Bog Myrtle (*Myrica gale*). The presence and distribution of certain species are indicative of a site's low fertility. Land which met the definition of E/I above at some point in the past but which has since reverted or is reverting to the original natural vegetation (excluding rushes / bracken / gorse in fields enclosed by banks, walls or ditches) in most of the sward will also be classified as U/U land.

As phosphorus is often deficient on U/U land, this land type will normally require an application of phosphorus fertiliser at establishment for successful tree growth.

Former U/U land that has been modified (e.g. by ploughing, re-seeding, fertilising, by enclosing by fencing) since 1st January 2004 may not be classified as E/I land for the purpose of the Department's afforestation schemes.

U/U land can be considered for GPC 1. The premium rate associated with GPC 1 reflects the current low levels of agricultural output forgone if these lands were afforested.

Lands not eligible for grant aid (under GPC 1 to 8)

For the purposes of the afforestation schemes, E/I land or U/U land generally not eligible for grant aid under any GPC on silvicultural or environmental grounds include the following:

- High elevation areas over 300 m above sea level in the west and over 400 m above sea level in the east of Ireland
- Infertile blanket and midland raised bogs, e.g. vegetation predominately consisting of heather (*Calluna vulgaris*), bog cotton (*Eriophorum vaginatum*), deergrass (*Trichophorum caespitosum-formerly called Scirpus cespitosus)* and sphagnum, and also vegetation – often pool studded. Also containing sundews (*Drosera rotundifolia*) and Bog asphodel (*Narthecium ossifragum*)
- Unmodified raised bogs.
- 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 Schemes Manual as being ineligible for grant aid, e.g. shell marl or sites which cannot be adequately drained.
- Sites not capable of producing a commercial crop of timber. The land must be capable of producing at least yield class 14 for Sitka spruce. The use of Sitka spruce as an indicator species recognises that other conifers may not achieve the same level of production on the same site.
- Very poor U/U sites where a standard application of phosphorus fertiliser (e.g. 350 kg/ha GRP) at the time of establishment is unlikely to provide sufficient phosphorus input to bring the forest to full rotation. (A split application not exceeding a total of 400 kg /ha GRP would be acceptable instead, within the establishment period).
- Sites where it is not practical to access or construct forest roads to facilitate the harvesting of timber to a suitable public road network. Cooperative roads and shared access routes may allow difficult sites to be considered for approval on application.
- Non-agricultural land (e.g. golf courses, turbary).

Mapping conventions

The Forest Service mapping conventions apply to all afforestation applications submitted for consent or grant aid. Any U/U area 0.2 ha or greater must be mapped and numbered as a

separate plot and claimed as GPC 1. For example, a 2.0 ha area containing a section of 0.2 ha of U/U land and 1.8 ha of E/I land must be mapped as two separate plots. Areas of a land type less than 0.2 ha should be ascribed the neighbouring land type.

APPENDIX 15.

NOTE ON SHELL MARL

Marl and Calcareous Soils

Deposits of marl and calcareous mud in flat area 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.

Marl is recognised when moist by its olive to pale olive colour, ranging through light grey to white, and its softness. 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). Marl varies in depth from around one centimetre to two 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.

Marls and calcareous muds were formed in lime-rich post-glacial fresh water lakes through the precipitation of calcium carbonate by species of Characeae (stoneworts) and Potamogeton (pondweed). The plants became coated with calcium carbonate and, with their death and decay, the calcareous material accumulated on the lake bottom.

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, but is easily seen and identified in stream-banks, drains or other excavations.

Other mineral horizon, not being marl or calcareous mud, but which are to a greater or lesser extent calcareous, may be found under peat, or under various mineral soils. If such material, displaying vigorous effervescence when treated with 10% HCL, occurs within the rooting zone (50 cm approximately), then the surface and sub-surface horizons should be assessed for pH and $CaCO_3$. Soil samples should be collected by a registered forester and assessed by an accredited forest soils laboratory. Sampling should distinguish between visibly different soil horizons, and each sample for the laboratory should be made up of at least 12-15 sub-samples and should be fully representative of the site and horizon being sampled. A careful description of all aspects of the sampling procedure should be recorded. Consult the laboratory before collecting the samples. Subsequent selection of species should reflect the laboratory results.

Figure x Soil core displaying vigorous effervescence with 10% HCL

APPENDIX 16

SOIL SAMPLING PROCEDURES

1. The area to be sampled should be divided into homogeneous soil sampling units (SSU) based on soil type, distinct differences in vegetation or obvious site boundaries. Note that each SSU should be sampled separately.
2. The total area under the proposal should be marked on an 6 " OS map or 1:5,000 scale, clearly indicating the pattern of sampling and which samples are representative of the SSU(s) sampled.
3. For each SSU, if there are clearly defined soil horizons evident, sample each horizon separately. Otherwise, take separate samples from the layers 0-20cm (surface) and 20–40cm (sub- surface).
4. 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.
5. Record the depth of any apparent calcareous layer in the soil profile.
6. Collect the sub- samples by travelling across the area to be sampled using a zigzag or "S" shaped route. All sampling locations should be identified on ½ " OS map, if available.
7. 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 bags with an indelible black marker. Repeat this process for each horizon or layer sampled.
8. For each horizon or layer, take a portion of the mixed sub-samples, at least 100g, and submit to the laboratory with the completed sample background form (see below).
9. The samples should be assessed in the laboratory for at least pH (in water), calcium (after extraction with 2.5 % acetic acid and reported on a dry weight basis @ 105 degrees C) and free CaCO3.
10. Sampling should be done preferably by a registered forester, who is fully acquainted with the recognised and accepted forestry soil sampling techniques.
11. A brief interpretative and advisory report is required, based on the laboratory test report received on the submitted samples, assessing site suitability for commercial forest planting, species recommendations and site cultivation/drainage requirements signed by a professional forest nutrition & soil expert.
12. The following information must be forwarded to Forest Service, Johnstown Castle, Co Wexford;
    - A copy of the fully completed soil sampling form and the soil sampling map showing the sampling areas or units. Each sample must be related to a plot number and each zone of sampling clearly identified.
    - A copy of the laboratory soil analysis report plus advisory report.
13. The procedures, as outlined above, do not cover highly disturbed soil types, e.g. land fill, or where there has been extensive reclamation, levelling, drainage or disturbance of some kind. In such instances, the sampler will need to consult with a forest soil and nutrition expert on the best soil sampling procedures to be adopted. Contact details for specialist consultancy services on forest soils and nutrition are provided below.

Explanatory 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 land owner, the site developer, soil sampler and the soil analysis laboratory. Because of the possibility of crop failure, it is recommended that an independent third party take the initial soil samples.

Where considered necessary, the Forest Service may conduct its own independent site investigation, including soil sampling and testing of the problematic site. Should the review findings be at variance with the initial assessment conducted by the land owner, he/she will be advised by the Forest Service.

The "*Terms &Conditions For the Registration of Foresters and Forestry Companies"* detail various sanctions which may be applied if an application, and accompanying information, was not in accordance with scheme requirements, guidelines and procedures.

Furthermore if, in the opinion of Forest Service, the land does not have the potential to produce a crop of minimum YC 14 Sitka Spruce, grant aid and premiums will have to be refunded to the Department.

The following forest soil laboratory offers a soil analysis service.

Coillte Laboratories
Church Road
Newtownmountkennedy
Co Wicklow
Tel: 01-2011111

The Forest Service will accept other accredited laboratories which carry out analysis soils using the preferred Macaulay Extraction method i.e. extraction using with 2.5% Acetic Acid and reported on a dry weight basis @105 degrees C.

Specialist Consultancy Services on Forest Soils and Nutrition are available from the following contacts:

Dr. Michael Carey, M.S.I.F.
Forestry & Management Consultant
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 & Environment
31 Sidmonton Gardens
Bray
Co. Wicklow

Tel: 01 2867902
Mob: 086 2481847
Fax: 01 2811217
E-mail: richmac20@gmail.com

Other specialist consultants' in Forest Soils and Nutrition can contact the Forest Service for inclusion in subsequent editions of this 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 [ ] Grass/Rush [ ] Sedge rush [ ] Bracken/Briar [ ] Molinia/Calluna [ ] Eriophorum/Heather [ ] Other [ ]	
Aspect: (facing N,S,E,W, or flat)		Elevation: (1) ft or (2) m

PREVIOUS LAND USE

Farming Practices before		
Previous Crop		
Fertilised/limed Yes/No	Year	Type/Rate
Reclaimed Yes/No	Year	Type

SOIL SAMPLING DEPTHS

Topsoil depth: (cm)		SUBSOIL DEPTH: (CM)
Situation 1. Depth to *Calcareous* material in mineral (i.e. absence of peat) soils (cm)) 1___2___3___4___5___6___7___8___9___10___11___12___13___14___15___16___.		
Situation 2. Depth of Peat over *Calcareous* material Depth to *Calcareous* material (cm) 1___2___3___4___5___6___7___8___9___10___11___12___13___14___15___16___.		

ANY OTHER COMMENTS

SITE DETAILS: (TICK AS APPROPRIATE)

TOPOGRAPHY		SOIL TYPE		CALCAREOUS MATERIAL		EXPOSURE	
Flat		Brown Earth		Shell Marl		Very exposed	
Concave		Brown Podsolic		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
	Present	Potential	
Class A [ ]	[ ]	Poor [ ]	Flooding [ ]
Class B [ ]	[ ]	Mod. [ ]	
Class C [ ]	[ ]	Good [ ]	Frost [ ]
Class X [ ]			
	Out fall? Yes [ ] No [ ]		

***EXPLANATION OF SITE FERTILITY**

Class A: *Fields and ornamental ground*. These are areas, which have been in intensive agricultural use up to relatively recent times, so that they carry characteristic agricultural vegetation (pasture grasses and herbaceous plants, often with high proportion of rushes. They are among the most fertile site types.

Class B:*Furze or whin*. These are sites that were once enclosed by banks, walls or ditches. This indicates that at one time they were considered sufficiently fertile to justify bringing them under agricultural use, and were probably cultivated. The class would include all long-abandoned agricultural land (indicated by the presence of Ulex or bracken). It might also be extended, on the basis of local knowledge, and experience, to include unenclosed areas on mineral soils derived from parent materials of shale, mica-schist or granitic origin.

Class C:*Rough pasture, with or without cropping rock*. These are areas of unenclosed ground, which have never been cultivated or brought under any form of intensive agricultural use. Sites to include are those on unenclosed land, usually upland or bogland, carrying typical unimproved heath land or peat land vegetation.

Class X:*Woodland*. Sites to be included are coniferous, broadleaved and mixed woodland.

LABORATORY TESTS: TICK THE TEST THAT YOU REQUIRE ON YOUR SOIL SAMPLE

pH, Calcium, Free Lime test: For the purpose of determining site suitability and species selection for forestry	☐
pH, Calcium, Magnesium, Potassium, Phosphorus, Free Lime test: For the purpose of determining growth problems and preparing fertiliser prescriptions	☐
pH, Calcium, Magnesium, Potassium, Phosphorus, Free Lime Test, % Organic Matter: For the purpose of screening nursery soils.	☐
Do you require a consultation report?	☐

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

SEND SAMPLES TO: Coillte Laboratories
Church Road
Newtownmountkennedy,
Co. Wicklow.
Tel: 01 2011111

APPENDIX 17

SAMPLE COLLECTION FOR FOLIAR ANALYSIS

Foliage nutrient levels vary with the season of the year and position of foliage in the crown. Therefore sampling should follow rigid guidelines.

1. Conifer foliage samples should be collected during the dormant season, ideally in the period from mid-November to the end of December but can be extended to the end of February at the very latest.

2. Broadleaves and deciduous conifers should be sampled in August after shoot growth has terminated and before the onset of colour change.

3. Foliage samples should be collected from the current season's growth on secondary branches and from the upper third of the tree.

4. Collect sub-samples from at least 20 trees that are representative of the area proposed to be fertilised.

5. Combine the sub-samples to form a single sample for analysis.

6. Place sub-samples in a clean, labelled, plastic bag and send to a professional laboratory specialising in foliar analysis.

7. The foliage should be tested for at least nitrogen, phosphorus and potassium content.

8. Growers should use the same laboratory over a stands rotation, as laboratories use differing analytical tests and report results in different ways.

9. A fertiliser prescription, based on the laboratory test report, must be prepared by an experienced forestry consultant advising on the most suitable fertiliser and application rate required.

10. The following information must be sent to the Forest Service

    - Copy of Foliar sampling form completed
    - Results of Foliar Analysis for N, P and K
    - Recommendation
        - Type of fertiliser(s)
        - Concentration of fertiliser
        - Rates of application per hectare (ha)

11. Foliar Analysis in support of an application for an Aerial Fertilisation Licence must also include supporting documentation as outlined in the Forestry and Aerial Fertilisation Guidelines and the European Communities (Aerial Fertilisation) (Forestry) Regulations (S.I. No. 592 of 2006), as amended.

FOLIAGE SAMPLING SITE/CROP FORM

ONE FORM TO BE COMPLETED PER SAMPLE

CLIENT DETAILS(client receiving report/Invoice)

Surname					
First Name (s)					Mr [ ] Ms [ ]
Address *(postal)*					
Telephone No.		Mobile No.		E-mail Address	
Contract No.		Area (ha)			
Name of Registered Forester			Name/Address of Landowner (if different):		

SAMPLE/SITE DETAILS

County		Townland(s)			O.S. 6" Map No.		
Species for analysis		Year planted			Forest type	Mixed [ ] Pure [ ]	
Mixtures (if applicable)	1st Species		2nd species		Intimate [ ] Non Intimate [ ]		
Dominant Ground Vegetation		Grass [ ] Grass/Rush [ ] Sedge rush [ ] Bracken/Briar [ ] Molinia/Calluna [ ] Eriophorum/Heather [ ] Other [ ]					
Aspect	N [ ] S [ ] E [ ] W [ ] Neutral [ ]				Elevation (m)		

CROP HISTORY

Herbicide/fertiliser	Yes [ ] No [ ] N/A [ ]	YEAR(S)		TYPE	
				RATE	

Suspected cause(s)

Herbicide [ ] Frost [ ] Nutrient [ ] Aphid [ ]

other (specify) [ ] _____

ANY COMMENTS

FILL IN AS APPROPRIATE, TICK AS APPROPRIATE

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

EXPLANATION OF SITE FERTILITY

Class A: *Fields and ornamental ground*. These are areas which have been in intensive agricultural use up to relatively recent times so that they carry characteristic agricultural vegetation (pasture grasses and herbaceous plants), often with high proportion of rushes. They are among the most fertile site types.
Class B:*Furze or whin*. These are sites that were once enclosed by banks, walls or ditches. This indicates that at one time they were considered sufficiently fertile to justify bringing them under agricultural use, and were probably cultivated. The class would include all long-abandoned agricultural land (indicated by the presence of Ulex or bracken). It might also be extended, on the basis of local knowledge and experience, to include unenclosed areas on mineral soils derived from parent materials of shale, mica-schist or granitic origin.
Class C:*Rough pasture, with or without cropping rock*. These are areas of unenclosed ground, which have never been cultivated or brought under any form of intensive agricultural use. Sites to include are those on unenclosed land, usually upland or bogland, carrying typical unimproved heath land or peat land vegetation.
Class X:*Woodland*. Sites to be included are coniferous, broadleaved and mixed woodland.

LABORATORY TESTS: TICK THE TEST THAT YOU REQUIRE ON YOUR FOLIAGE SAMPLE

1. Nitrogen, Phosphorus & Potassium, e.g. for the purpose of determining growth problems and preparing fertiliser prescriptions. [ ]
2. Nitrogen, Phosphorus, Potassium, Calcium & Magnesium, e.g. for nutrient assessment of Christmas Trees. [ ]
3. Nitrogen, Phosphorus, Potassium, Calcium, Magnesium & Trace elements, e.g. for nursery plant production. [ ]

SEND DETAILS TO: Coillte Laboratories
Church Road
Newtownmountkennedy,
Co. Wicklow.
Tel: 01 2011111

APPENDIX 18

Protocol for the determination of the acid sensitivity of Surface water in the context of Afforestation

Applications for grant aid for afforestation in areas outlined on maps of acid-sensitivity as being acid-sensitive, and included in the list of County O.S. maps scale 1: 10560, require an assessment of acid sensitivity for all areas which are the subject of grant aid applications. These procedures also apply to afforestation applications received for approval / consent under the European Communities (Forest Consent and Assessment) Regulations, 2010 (S.I. No. 558 of 2010).

This sensitivity of the water to acidic inputs is to be determined by the measurement of alkalinity.

Sampling and analysis shall be carried out on a minimum of four occasions at intervals not greater than four weeks in the period February to May inclusive. The analysis will be carried out by a Laboratory, independent of the applicant, and participating currently in relevant national or international inter-comparison exercises. Samples to be taken from, and measurements to be made on, all watercourses shown on Ordnance Survey 6" Maps within the area of the proposed afforestation.

Sampling procedures are outlined below.

Alkalinity to be measured using the Gran Titration Method.

The minimum acid-sensitivity measured will determine the overall sensitivity of the site.

There will be no afforestation in areas where the minimum alkalinity of the run-off water is <8 mg $CaCO_3\,l^{-1}$.

Where the minimum alkalinity of the run-off water is in the range 8–15mg $CaCO_3\,l^{-1}$, full, partial or no afforestation may be allowed, following discussion and agreement between the Environmental Protection Agency, the Forest Service of the Department of Agriculture, Food and the Marine and Inland Fisheries Ireland (*formerly the Regional Fisheries Board*).

Afforestation may be approved in areas where the minimum alkalinity of the run-off water, measured in the above manner, is >15 mg $CaCO_3\,l^{-1}$.

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 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 and the Marine, Inland Fisheries Ireland, the appropriate Local Authority and Environmental Protection Agency.

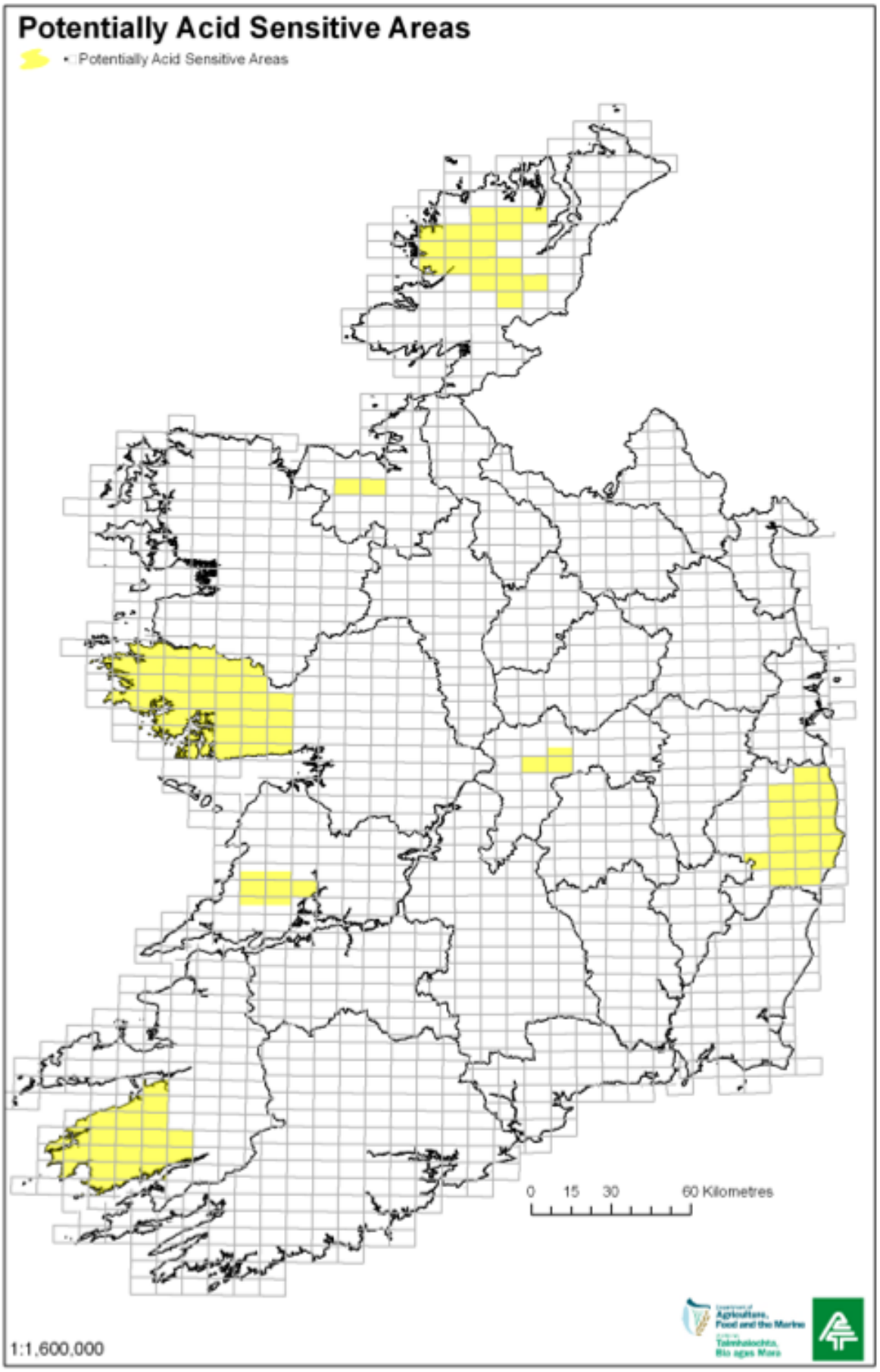
Persons taking water samples must notify the Forestry Inspector prior to sampling stating the location, proposed date and time of sampling. The Forest Service may take additional samples to compare with alkalinity results submitted with each application. Water samples submitted without prior notification will not be accepted and repeat sampling will be required.

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

Potentially Acid Sensitive Areas.

The following list of 6 inch O.S. sheet reference areas have been identified as acid sensitive.

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


Potentially Acid Sensitive Areas
Potentially Acid Sensitive Areas
0 15 30 60 Kilometres
1:1,600,000

Sampling procedure for Rivers and Streams

Equipment Required

1. Six inch (6") map, or 1:5000 of area to be sampled.
2. Waterproof notebook and record sheets.
3. GPS, if available.
4. 2 L HDPE Plastic Sample bottles. The number of bottles determined by the number of sampling points plus some additional spare bottles. For the initial sampling, the sampler should examine the 6" map outlining the proposed development 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.
5. Sampling bucket with rope.
6. Funnel.
7. Disposable gloves.
8. Waterproof markers.
9. Adequate protective clothing and footwear.
10. Coolbox.

Before leaving the work station or laboratory ensure that you:

1. Have sufficient information on the location of sampling area to ensure that sample(s) is/are taken from correct watercourses at exact location.
2. Have a map of the area to be sampled, of an adequate scale and sufficient detail to ensure easy direction to the exact location where water sampling is to be carried out.
3. Request permission of land-owner to enter onto land and inform landowners of your purpose to take samples.
4. Have an adequate number of new sampling bottles, including some spare bottles.
5. Have enough field sheets to record details of sampling site.
6. Are familiar with safety regulations and procedures dealing with the taking of water samples.

On arrival at the sampling Area

1. Confirm correct location
2. Advise landowner of your presence and request permission to sample.
3. Confirm, with landowner(s), the area of the proposed plantation.
4. Advise landowner of approximate time of return.

On arrival at the sampling location

1. Observe area of proposed plantation, compare with map and identify sampling locations.
2. Proceed to first sampling location.
3. Record co-ordinates with GPS, if available, otherwise mark clearly on map.
4. Label sample bottle with the Stream/River name, sample number, location, date and time using a permanent water-resistant marker.
5. Using a plastic bucket (and rope to lower the bucket into the river where necessary) take up a sample. Rinse the bucket with the sample and empty it. Repeat this procedure at least twice, more times when necessary.
6. Facing upstream and **in mid-channel** where river/stream in shallow (less than 50cm deep), otherwise at side of stream or off a bridge, lower the bucket into the water and take up a sample of the water. Make sure that water flowing into bucket does not contain sediment from river disturbed by feet. Sample should be taken upstream of point of their entry to river.

7. Rinse the (2-litre) sample bottle and funnel thoroughly (three times) with the water from the bucket, then fill the bottle with the water remaining in the bucket. Ensure you fill the bottle leaving only 1 – 2 cm headroom.
8. Place lid tightly on the bottle. Squeeze the bottle to ensure there are no leaks present.
9. Recheck that the labelling on the bottles is correct.
10. Place the sample bottles into their relevant crates.
11. Each time a water sample is taken, a field sheet should be completed (see sample below). Note the Stream/River name (if any, otherwise mark clearly on map), sample number, location, date and time that the sample was taken on the field sheet.
12. Between sampling and dispatch, 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 samples together with field sheet(s) to laboratory for immediate analysis.

At all times use common sense.

Primarily use a course of action to ensure personal safety.

Be mindful not to contaminate sample by allowing sedimentary or material other than the water flowing in the river into the sampling bucket and the sample bottle. No smoking is allowed on site.

At all times avoid body contact with water intended for analysis.

Alkalinity Testing Laboratories

BHP Laboratories Ltd. New Road Thomond Gate Co. Limerick Tel: 061-455399	Coillte Teoranta Coillte Laboratories Church Road Netownmountkennedy Co. Wicklow Tel: 01-2011111
Southern Scientific Services Ltd Dunrine Killarney County Kerry Tel: 064-33922	TMS Environment L.td 53 Broomhill Drive Tallaght Dublin 24 Tel: 01-4626710
Fitz Scientific Unit 35 Boyne Business Park Drogheda Co Louth Tel: 041-9845440	Other laboratories : Water samples can be submitted to any laboratories accredited by the Irish National Accreditation Board to undertake water testing in compliance with the International Standard ISO/IEC 17025:2005.

Water Sampling Field Sheet

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

Sample No.	Date collected	Tome of collection	Water temperature C^{o}	Remarks

Weather conditions on date of collection
General weather, recent conditions

Comments

Samples collected by: _____

Signature

State Name: _____

BLOCK CAPITALS

Date: _____

APPENDIX 19

STATEMENT OF TOTAL COSTS

There is no requirement to submit a statement of costs under the Fixed Grant Scheme for the Afforestation Scheme, Forest Environment Protection Scheme (FEPS) and Native Woodland (Establishment) Scheme. The fixed grant scheme also applies to the tending and 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 scheme documents for more detail. The following schemes are cost based

- Reconstitution Scheme
- Forest Roads Scheme
- Native Woodland Conservation Scheme
- NeighbourWood Scheme
- Woodland Improvement Scheme (excluding thinning and tending element)
- Reforestation Scheme
- High Pruning of Conifers

APPENDIX 20

STATEMENT OF COSTS
(Applicant's costs)

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.

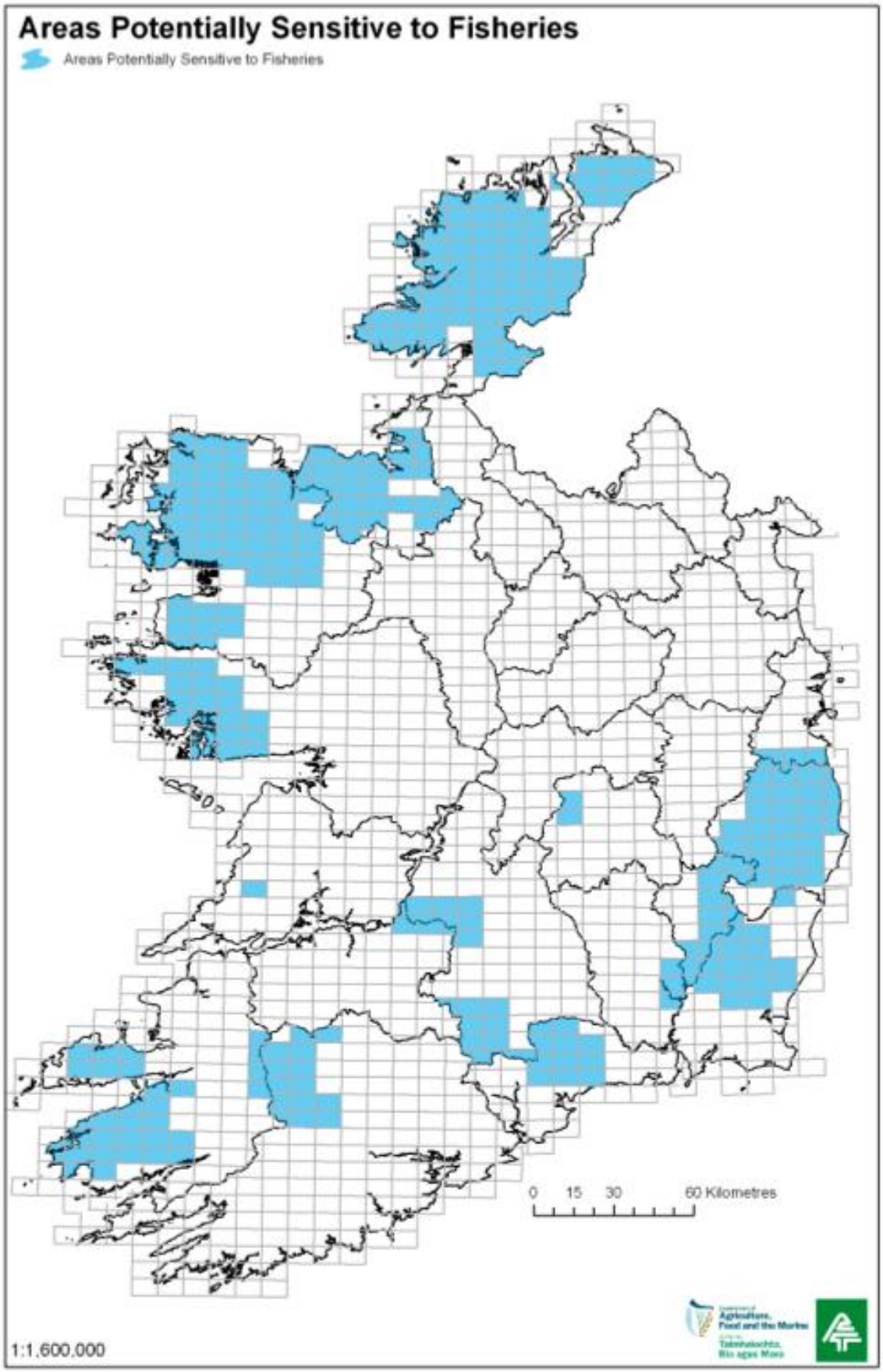
APPENDIX 21

AREAS POTENTIALLY SENSITIVE TO FISHERIES

Carlow	O.S sheet nos	3 to 5 inclusive 8 to 10 inclusive 13 to 14 inclusive 17 to 18 inclusive 20 to 26 inclusive
Clare	O.S sheet nos	39
Cork	O.S sheet nos	5 and 6 12 to 14 inclusive 21 and 22 inclusive 29 and 30 inclusive 38 to 40 inclusive 47 to 49 inclusive
Dublin	O.S sheet nos	24 to 28 inclusive
Donegal	O.S sheet nos	10 to 12 inclusive 18 to 21 inclusive 23 to 26 inclusive 29 to 31 inclusive 32 to 36 inclusive 40 to 45 inclusive 48 to 53 inclusive 56 to 71 inclusive 73 to 92 inclusive 94 to 98 inclusive 100 to 102 inclusive 104 to 105 inclusive
Galway	O.S sheet nos	22 to 25 inclusive 37 to 39 inclusive 51 to 53 inclusive 64 to 67 inclusive 78 to 80 inclusive 90 to 92 inclusive
Kerry	O.S sheet nos	32, 34 to 36 inclusive 41, 43 to 45 inclusive 50, 56 and 57 60, 62 to 64 inclusive 69 to 72 inclusive 78 to 83 inclusive 87 to 92 inclusive 96 to 98 inclusive
Kilkenny	O.S sheet nos	29 , 33, 37
Limerick	O.S sheet nos	1, 6 to 8 inclusive
Laois	O.S sheet nos	6 and 11
Mayo	O.S sheet nos	4 to 6 inclusive 11 to 13 inclusive 18 to 22 inclusive 25 to 32 inclusive

		34 to 39 inclusive 42 to 49 inclusive 54 to 61 inclusive 65 to 71 inclusive 78 to 80 inclusive 86 96 to 98 inclusive 106 to 108 inclusive 115 and 116 inclusive
Waterford	O.S sheet nos	1, 2, 5 to 7 inclusive 13 to 15 22 to 24
Wexford	O.S sheet nos	1,2,4, 8 to 10 inclusive 13 to 15 inclusive 18 to 21 inclusive 24 to 27 inclusive 31 to 32 inclusive
Wicklow	O.S sheet nos	1 to 8 inclusive 10 to 13 inclusive 16 to 19 inclusive 21 to 30 inclusive 32 to 35 inclusive 38 to 40 inclusive 44
Sligo	O.S sheet nos	8 to 25 28 to 38 40 to 42
Tipperary	O.S sheet nos	31 to 33 37 to 39 44 to 45 73 to 75 80 to 81 86 to 87 89 to 91

(Forest Service 1992 - Areas potentially sensitive to fisheries as agreed by the Forest Service and Regional Fisheries Boards.)


Areas Potentially Sensitive to Fisheries
Areas Potentially Sensitive to Fisheries
0 15 30 60 Kilometres
1:1,600,000

APPENDIX 22

ARCHAEOLOGY

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.

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 and the Gaeltacht, or the subject to 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 National Monuments Service directly:

National Monuments Service,
Department of Arts, Heritage and the Gaeltacht,
Room G50,
Custom House,
Dublin 1.

Email: nationalmonuments@ahg.gov.ie
Phone: +353 (0)1 888 2178
Fax: +353 (0)1 888 2689
Web: http://www.ahg.gov.ie/en/Heritage/Archaeology-NationalMonumentsService/

APPENDIX 23

STANDARD ANNUITY TABLE

FACTORS FOR CALCULATING PRESENT VALUE OF AN ANNUITY

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**
YEARS													
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

Example:

Use of Ready Reckoner for making lump sum payments

Annual Payment (€)	120.00
Number of Years	20.00
Discount Rate	7%
Total Lump Sum (Capitalised) : €120 X 10.59	1,270.80

APPENDIX 24

IS436 Fencing Certificates

A sample IS436 Fencing Certificate is provided below.

Only companies that are certified by the National Standards Authority of Ireland (NSAI) to produce IS436 are entitled to reproduce this certificate.

The certificate is to be produced in duplicate, with the stake IS436 registration holder holding the original copy, and supplying the second copy to the person/company purchasing the posts. Manufactures of NSAI fencing materials shall obtain numbers for each certificate directly from the Department of Agriculture, Food and the Marine, Specialist Unit, Specialist Farm Services Environment and Evaluation Division, Pavilion A, Grattan Business Centre, Dublin Road, Portlaoise, Co. Laois. This replicates the same process as administered by the DAFM Farm Fencing Scheme.

All NASI registered suppliers of timber certified to IS436 will contact DAFM directly for certificate numbers.

Registered suppliers of IS436 timber fencing are available on the National Standards Authority of Ireland's website www.nsai.ie/Our-Services/Certification/Company-Registration-Search.aspx

SAMPLE IS436 FENCING POST CERTIFICATE

Cert No: (Numbers to be obtained from DAFM)

Section A: (To be completed by post manufacturer)

Manufacturer's Name:	Manufacturer's Registration No:
Manufacturer's Address:	
Name of company post supplied to:	
Address of company post supplied to:	

Bale No.	No. of posts in bale	Post dimensions (mm)	Bale No.	No. of posts in bale	Post dimensions (mm)

Signed: _____ Date: _____ Status: _____	Company Stamp:

Section B: (To be completed by Fencing contractor / supplier of post to farmer)

Suppliers Name:
Suppliers Address:
Farmers Name:
Farmers Address:
Site address

Bale No.	No. of posts in bale	Post dimensions (mm)	Bale No.	No. of posts in bale	Post dimensions (mm)

Signed: _____ Date: _____ Status: _____	Company Stamp: