



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

Forest genetics resources— seed stand and seed orchard schemes

Brian Clifford

Forestry Inspector

Forest Sector Development Division, DAFM

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Overview



- Forest genetic resources and why they are important
- FGR in Forest policy
- COFORD - Sustainable Development and Conservation of Forest Genetic Resources 2020-2030 published December 2020
- FRM demand
- National Register of Forest Basic Material (Seed stand register)
- Seed stand and seed orchard scheme – key elements
- Concluding remarks and sources of further information

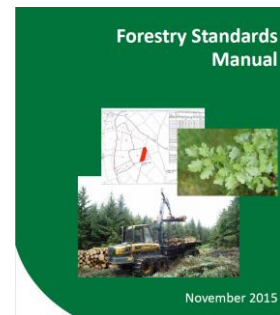
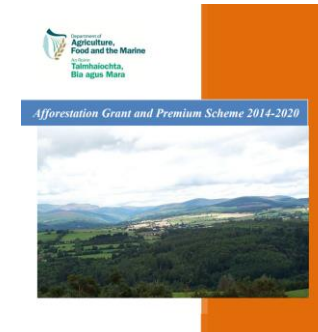
Forest genetic resources - why they are important



- FGR is the basis of selection and breeding programmes that produce forest reproductive material (FRM), which is used in forestry to generate and regenerate forests.
- FRM & climate change
 - FRM has a role in enhancing the production of biomass – inc. volume / ha
 - Increased timber quality = increased likelihood of volume going into long lived wood products
 - Balance – gain vs diversity - need to maintain diversity and ability of forests to adapt to uncertain threats.
- Large amounts of FRM needed. Demand for broadleaf FRM likely to increase.

Policy drivers

- Climate Action Plan
- Climate Adaptation framework – Agriculture, Forest and Seafood – Climate Change Sectoral Adaptation Framework
- EU Forest Strategy
- Forestry Programme 2014 -2020 (extended 2022)
 - Diversity of species - increased grant and premium rates
 - Appropriate use of FGR – list of accepted species, provenance and origin.
 - **Forest Genetic Resources: Forest Reproductive Material.**
- New Forest Strategy in development – new programme January 2023



The COFORD Council Working group on forest genetic resources produced its report in 2020

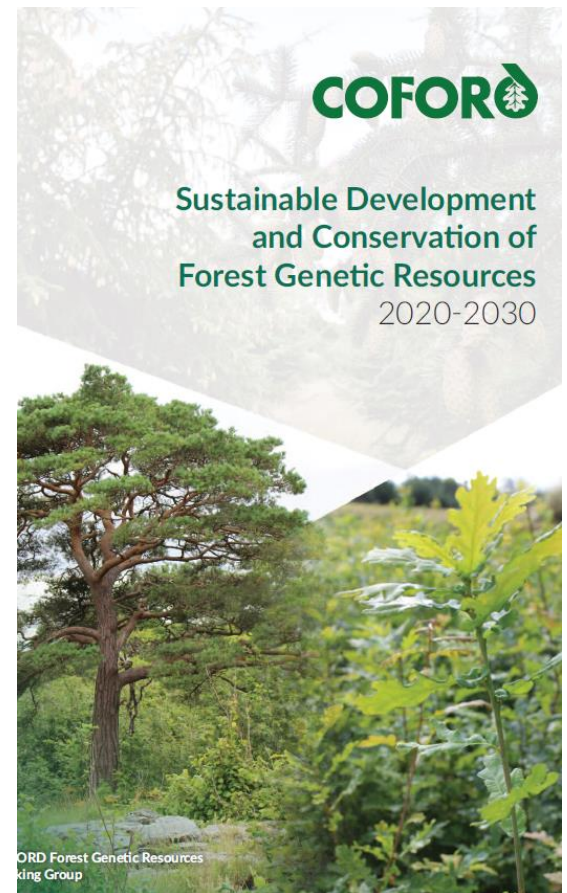
**Sustainable Development and Conservation
of Forest Genetic Resources 2020-2030 published
December 2020**

Recommendations made grouped under four headings, with associated actions and key stakeholders

- Strategy implementation and co-ordination
- Genetic options for climate change adaptation
- FGR development requirements
- Gene conservation requirements

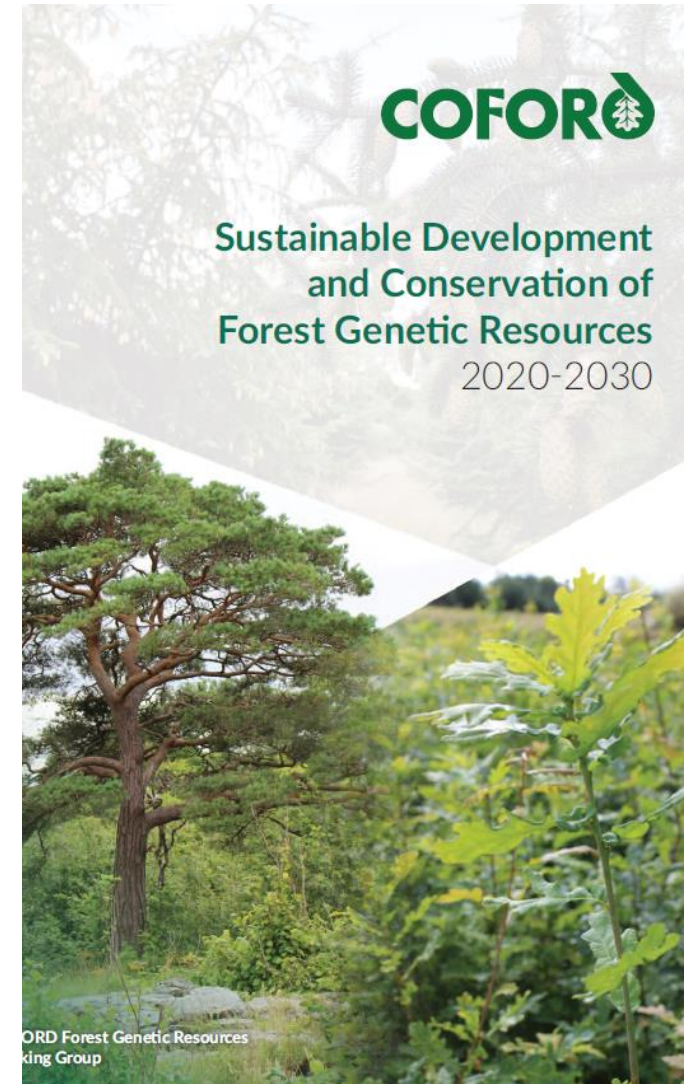
available on coford.ie

<http://www.coford.ie/news/cofordreport-developmentandconservationofforestgeneticresources2020-2030.html>



FGR Development Requirements

- Maintain programme of seed stand registration
- Seed stand activation programme
- Management of forest stands *for* seed collection
- Training needs
- Orchards – continued investment in tree selection and breeding programmes and establishment of orchards
- Forest Genetic Resources Reproductive Material: Seed Stand & Seed Orchard Scheme



Broadleaf FRM demand and the National Register of Forest Basic Material

Broadleaf Seed utilisation 2017-2021

Table 44: Main broadleaf species sown (kgs seed & number of plants ('000)) in forest nurseries (2017-2021)

Species	2017		2018		2019		2020		2021	
	kg	Plants ('000)	kg	Plants ('000)	kg	Plants ('000)	kg	Plants ('000)	kg	Plants ('000)
<i>Acer pseudoplatanus</i>	153	214	15	21	95	133	50	70	50	70
<i>Alnus glutinosa</i>	113	3,387	92	2,754	118	3,525	134	4,023	67	1,998
<i>Betula pendula</i>	7	204	8	227	8	225	6	193	6	185
<i>Betula pubescens</i>	54	2,439	52	2,343	60	2,700	55	2,490	38	1,689
<i>Fagus sylvatica</i>	1,041	832	683	546	870	696	1,170	936	31	25
<i>Fraxinus excelsior</i>	-	-	-	-	-	-	6	15	-	-
<i>Prunus avium</i>	-	-	-	-	-	-	-	-	59	47
<i>Quercus petraea</i>	5,363	429	4,269	342	1,400	112	27	22	5,683	455
<i>Quercus robur</i>	20,663	2,066	25,302	2,530	15,406	1,541	2,530	202	19,614	1,961

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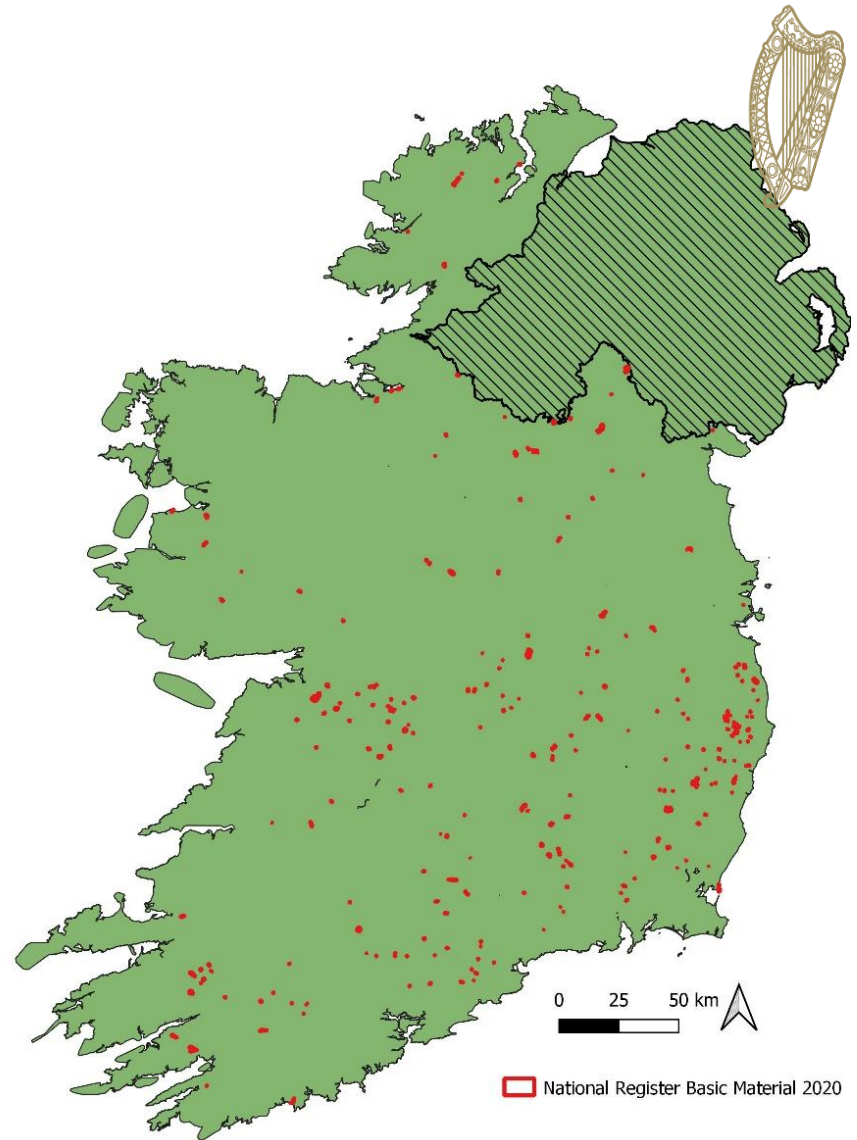
Forest Statistics Ireland 2021

Prepared by the Department of
Agriculture, Food and the Marine
agriculture.gov.ie

Data on seed utilisation were sourced from Coillte and None-So-Hardy (Forestry) LTD. Data inclusive of subsequent sales to horticulture sector and plants for export.

National Register of Forest Basic Material

- The National Register of Forest Basic Material is the source of all information on approved basic material.
- All EU Member States are required to have a National Register.
- DAFM maintains the register for Ireland and approves all material.



Summary of seed stands & seed orchards by area (ha) & Category

Source Forest Statistics 2021
(DAFM)

Species	Source Identified	Selected	Qualified	Tested	Total
<i>Abies procera</i>	-	13	-	-	13
<i>Acer pseudoplatanus</i>	-	54	3	-	57
<i>Alnus cordata</i>	-	1	-	-	1
<i>Alnus glutinosa</i>	113	0	2	-	115
<i>betula pubescens</i>	30	13	0	-	44
<i>Castanea sativa</i>	-	8	2	-	10
<i>Chamaecyparis lawsoniana</i>	-	3	-	-	3
<i>Cryptomeria japonica</i>	3	-	-	-	3
<i>Cupressus macrocarpa</i>	-	1	-	-	1
<i>Fagus sylvatica</i>	3	79	-	-	82
<i>Fraxinus excelsior</i>	136	22	4	-	162
<i>Larix decidua</i>	-	17	-	-	17
<i>Larix kaempferi</i>	-	37	-	-	37
<i>Larix x eurolepis</i>	-	-	3	-	3
<i>Mixed Species Stands</i>	53	-	-	-	53
<i>Picea abies</i>	-	290	-	-	290
<i>Picea sitchensis</i>	-	469	7	3	480
<i>Pinus contorta</i>	-	105	2	-	108
<i>Pinus nigra var. maritima</i>	-	63	-	-	63
<i>Pinus radiata</i>	-	19	-	-	19
<i>Pinus sylvestris</i>	37	162	5	-	204
<i>Prunus avium</i>	-	-	0.8	-	0.8
<i>Pseudotsuga menziesii</i>	-	233	-	-	233
<i>Quercus petraea</i>	1,064	541	-	-	1,605
<i>Quercus robur</i>	536	384	-	-	920
<i>Sequoia sempervirens</i>	1	-	-	-	1
<i>Taxus baccata</i>	34	-	-	-	34
<i>Thuja plicata</i>	-	19	-	-	19
<i>Tsuga heterophylla</i>	-	28	-	-	28
Total	-	13	-	-	13



Forest Genetic Resources Reproductive Material: Seed stand and seed orchard scheme

Grant scheme for use and conservation of FGR

The Forest Genetic Resources Reproductive Material measure of the Forestry Programme aims to increase the availability and quality of forest tree seed through supporting the management of seed stands, and the establishment of new seed orchards.

Objectives

- increase the resilience, productivity and quality of Irish forests;
- increase self sufficiency in tree seed production;
- provide for in-situ and ex-situ conservation of forest genetic resources;
- provide breeding populations of designated broadleaf species (e.g., birch, oak and sycamore).

Scheme made up of two elements

- Element 1 seed stand management.
- Element 2 seed orchard establishment



Ref: Measure 10-FS.10.1

Forestry Programme 2014 - 2020

Forest Genetic Resources Reproductive Material: Seed Stand & Seed Orchard Scheme



Forest Service

Department of Agriculture, Food
and the Marine

27/5/2015



Seed Stand Element-Key Points

- The scheme is open to private and public forest-holders
- Broadleaf and minor conifer seed stands
- Stands must be registered on the national register of basic material as Selected
- Source identified stands of sessile or pedunculate oak may be considered for the purposes of gene conservation.
- 100 % of eligible costs to a maximum of €750
- Additional €300 for preparation of Forest Management Plan
- maximum area eligible for funding is 5ha (10 ha for oak)



Seed Orchard Element-Key Points

- Support for the establishment of outdoor seed orchards shall be 50% of the eligible costs of establishment, up to a maximum of €10,000/ha for a maximum of 5ha.
- In the case of indoor seed orchards 50% of vouched eligible costs will be supported up to a maximum of €50,000 per application per applicant.
- Outdoor seed orchards are eligible for a premium towards the cost of maintenance of €500/hectare each year for 7 years following establishment.
- The maximum eligible area for outdoor seed orchards will be 5ha; the seed orchard area can be larger but only up to 5ha will be eligible for funding.
- Applicants already in receipt of support for a seed orchard may apply for support in respect of establishing another seed orchard or an extension to an existing seed orchard once the subsequent application is not made in the same year as the completion date of the earlier seed orchard application.
- For areas susceptible to deer damage and where deemed appropriate by the Forest Service additional support for deer fencing may be provided.
- All payments of grants and premiums will be conditional on the seed orchard being successfully established and maintained in compliance with the conditions of approval and in the case of outdoor seed orchards standards as outlined in the *Forestry Standards and Procedures Manual*.

Concluding Remarks



- Importance of FGR embedded in forest policy – recognised as important to climate mitigation and adaptation
- Demand for quality indigenous FRM to meet forestry objectives
- COFORD Report on the Sustainable Development and Conservation of Forest Genetic Resources 2020-2030 list recommendations for the sustainable use and conservation of FGR
- Further information available by contacting frm@agriculture.gov.ie
- Forest Genetic Resources: Forest Reproductive Material scheme in place to support development of FGR
- More information available at <https://www.gov.ie/en/service/a3c9b6-seed-stand-scheme/>