

# The value of native provenance trees and hedging stock and how to reduce health risks to them

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10 December 2021



**Hedgerows link to native woodland**

Woodlands of Ireland, a charity founded in 1998 to promote native woodland conservation and the creation of new native woodland, is funded by the Forest Service, NPWS and the Heritage Council. Company number: 499781 Charity number: CHY 20013



An Roinn Tithíochta,  
Rialtais Áitiúil agus Oidhreachta  
Department of Housing,  
Local Government and Heritage

An Chomhairle Oidhreachta  
The Heritage Council



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





# The presentation includes reference to:

Woodlands of Irelands' interest in the hedge habitat conservation

The list of tree species that are considered native to Ireland

Why is it important to source seed for hedge stock locally?

What is meant by provenance or origin?

Is there a broad species diversity in Irish hedge types?

What can the County Hedgerow Surveys tell us about the location of native provenance?

How might planting stock issues be resolved?

# Woodlands of Irelands' interest in hedge habitat conservation

Hedges on agricultural field boundaries are forms of linear semi-natural woodland/agroforestry and often provide refuge for woodland species and sources of seed and/or cuttings.

The hedge measures in CAP/ REAP draw from the same pool of plant supply as the Native Woodland Scheme measures

The Hedgerow Appraisal System- HAS (Foulkes et al 2014) was refined in a Technical Advisory Panel group of Woodlands of Ireland.

Heritage Council are providing support to us for an experimental hedge project aimed at moving towards a national hedge inventory integrated into the National Forest Inventory

Emergent woodland often develops from expanding 'escaped' hedges

Hedges on ancient boundaries may contain remnants of ancient woodland

Ireland's native trees and selected shrubs as presented by Dr. Jenni Roche NPWS  
in Woodlands of Ireland webinar on *Setting the context for native tree seed  
collection* 5/11/2021

Holly ( <i>Ilex aquifolium</i> )
Alder ( <i>Alnus glutinosa</i> )
Downy birch ( <i>Betula pubescens</i> )
Silver birch ( <i>Betula pendula</i> )
Hazel ( <i>Corylus avellana</i> )
Elder ( <i>Sambucus nigra</i> )
Guelder rose ( <i>Viburnum opulus</i> )
Spindle ( <i>Euonymus europaeus</i> )
Strawberry tree ( <i>Arbutus unedo</i> )
Sessile oak ( <i>Quercus petraea</i> )
Pedunculate oak ( <i>Quercus robur</i> )
Ash ( <i>Fraxinus excelsior</i> )
Scots pine ( <i>Pinus sylvestris</i> )
Yew ( <i>Taxus baccata</i> )
Alder buckthorn ( <i>Frangula alnus</i> )
Buckthorn ( <i>Rhamnus cathartica</i> )
Wych elm ( <i>Ulmus glabra</i> )
Hawthorn ( <i>Crataegus monogyna</i> )

Rowan ( <i>Sorbus aucuparia</i> )
Whitebeam ( <i>Sorbus aria</i> )
Irish whitebeam ( <i>Sorbus hibernica</i> )
Rock whitebeam ( <i>Sorbus rupicola</i> )
English whitebeam ( <i>Sorbus anglica</i> )
Devon whitebeam ( <i>Sorbus devoniensis</i> )
Crab apple ( <i>Malus sylvestris</i> )
Wild cherry ( <i>Prunus avium</i> )
Bird cherry ( <i>Prunus padus</i> )
Blackthorn ( <i>Prunus spinosa</i> )
Aspen ( <i>Populus tremula</i> )
Black poplar ( <i>Populus nigra</i> )
Grey willow ( <i>Salix cinerea</i> )
Eared willow ( <i>Salix aurita</i> )
Goat willow ( <i>Salix caprea</i> )
Bay willow ( <i>Salix pentandra</i> )
Purple osier ( <i>Salix purpurea</i> )
Almond willow ( <i>Salix triandra</i> )

Why is it important to source seed for hedge planting stock locally?

*The ability to source planting material of a known genetic provenance is important..because..*

*The origin of plants or seeds determines their adaptability, quality, and wildlife value.*

*More information is needed on the status and production capacity of the hedgerow nursery sector in Ireland.. Foulkes and Murray 2005 (Offaly County Hedgerow Survey)*

# Minister Hackett tightens controls on high risk plants and plant product imports

- Published on 8 July 2021
- Last updated on 14 July 2021
- ..the introduction of new legislation setting out notification requirements on the arrival of certain plants and plant products from other European Member States - European Union (Plant Health Controls) Regulations 2021 (S.I. no. 310 of 2021).
- *Erwinia amylovora* is Fireblight which effects Whitethorn, Blackthorn and Rowan – these will be difficult to imported from Britain currently and import from other European states have stricter controls since July.

1.Plants for Planting	Harmful Organism
<i>Quercus</i>	<i>Thaumetopoea processionea</i>
<i>Cotoneaster</i> <i>Crataegus</i> (Hawthorn) <i>Malus</i> (Apple) <i>Pyrus</i> (Pear) <i>Sorbus</i> (Mountain Ash)	<i>Erwinia amylovora</i>
<i>Castanea</i> (chestnut)	<i>Dryocosmus kuriphilus</i> and <i>Cryphonectria parasitica</i>
<i>Coffea</i> (Coffee) <i>Lavandula</i> (lavender) <i>Nerium oleander</i> <i>Olea</i> (Olive) <i>Prunus</i> <i>Rosmarinus officinalis</i> (Rosemary) <i>Polygala myrtifolia</i> <i>Vitis</i> (grape vine)	<i>Xylella fastidiosa</i>
<i>Prunus</i>	<i>Xanthomonas arboricola</i> pv. <i>Pruni</i>
<i>Pinus</i>	<i>Thaumetopoea pityocampa</i>
2.Plant Products	
Cut Christmas trees over 3m in height	
*Wood of conifers that is not bark free (except sawn wood that has been kiln-dried to below 20% moisture content and where the wood or its wrapping has been marked KD or kiln-dried)	<i>Ips typographus</i> , <i>Ips amitinus</i> , <i>Ips sexdentatus</i> , <i>Ips cembrae</i> , <i>Ips duplicatus</i> , <i>Dendroctonus micans</i>
*Isolated bark of conifers	
*Fuel wood	Wood boring insects, bark beetles

# What is meant by provenance or origin?

The location from which a seed lot (or cuttings) used to produce planting material was collected.

- Forestry Commission PRACTICE NOTE
- Using Local Stock for Planting Native Trees and Shrubs
- BY ROGER HERBERT, SAM SAMUEL & GORDON PATTERSON, 1999

## Provenance and origin

Forestry has exploited population differences effectively over many years by paying attention to the *provenance* and *origin* of reproductive material (seed, plants, parts of plants). The term provenance is used to describe the location of the stand from which the reproductive material was collected. In practice, the origin of the material is more important since this term is used to describe that part of the natural range from which the material originally derived. However the origin of planted stands is often not known. In such cases local provenance is normally considered sufficient on the assumption that collections are made from stands which appear well adapted.



# Provenance value

- Trees of the same species, adapted to different regions of Europe, can bud burst, flower and seed at different times as illustrated in part by this Forestry Commission image
- Birds, mammals, insects have co-adapted with their local tree species

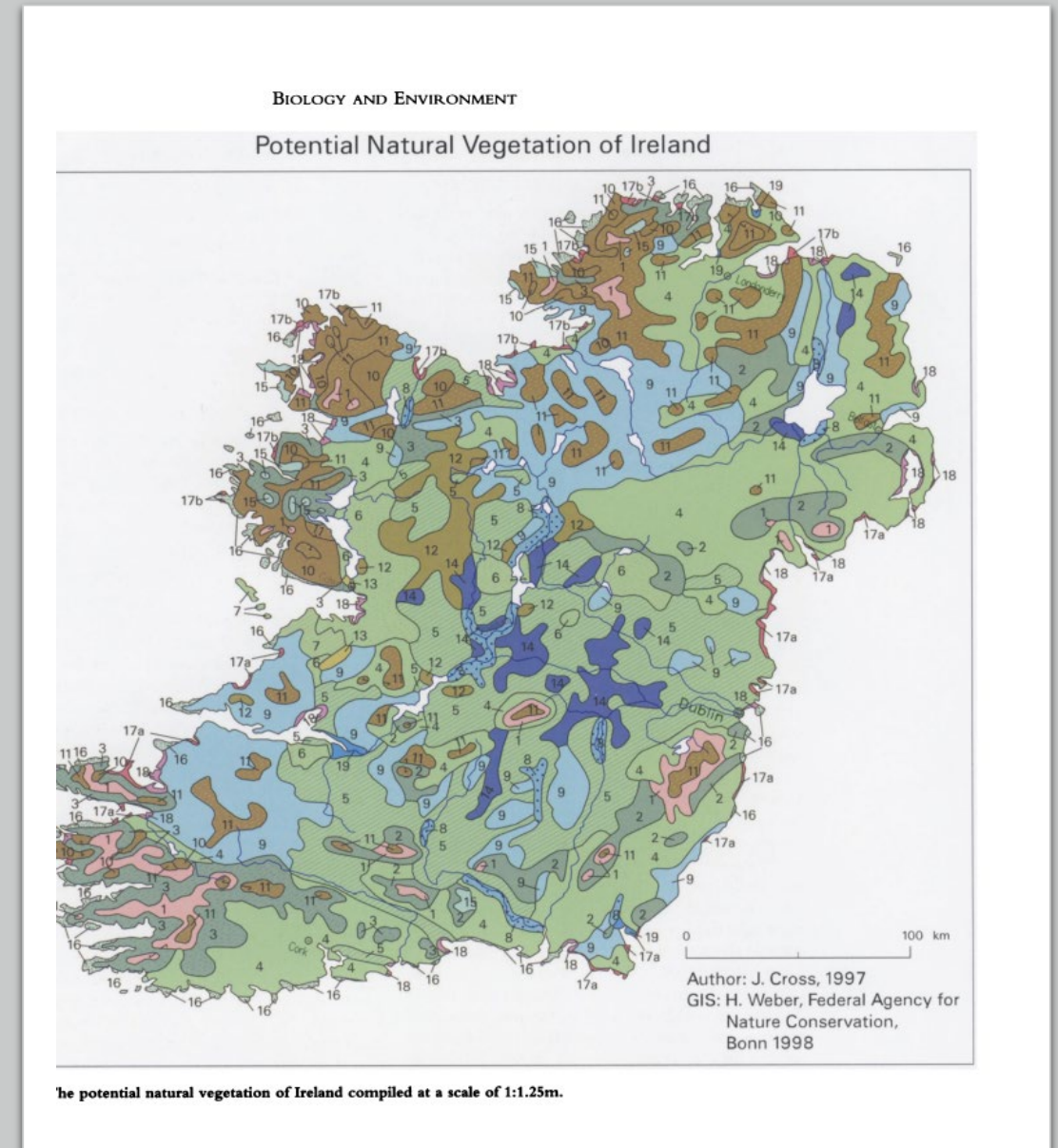
**Figure 1**

Birch seedlings of Norwegian and French provenance raised in the same nursery showing the importance of provenance for determining bud burst.



# Is there a broad species diversity within hedge types around Ireland?

- *‘An indication of the potential natural vegetation is obtained from remnants of semi-natural vegetation (including hedges, scattered trees or shrubs) ‘*
- *‘The boundaries of the vegetation units were added using maps of field boundary vegetation (hedges) .., anthropogenic grasslands.. and peatlands ..’*
- John Cross 1997



# Key to vegetation types on the map

The areas covered by  
woodland types 5 to 9 are  
where most of our hedge  
habitats occur

## THE POTENTIAL NATURAL VEGETATION OF IRELAND

	1 Montane birch forests		10 Atlantic blanket bogs
	2 Species-poor sessile oak forests		11 Montane blanket bogs
	3 Sessile oak forests rich in bryophytes and lichens		12 Atlantic raised bogs
	4 Sessile oak forests with <i>Hyacinthoides non-scripta</i>		13 Calcareous fens
	5 Pedunculate oak-ash forests with hazel and <i>Circaea lutetiana</i>		14 Degraded raised bogs with alder carrs, ash-alder and birch forests
	6 Hazel-ash forests on shallow calcareous soils		15 Montane heaths
	7 Hazel-ash scrub in complex with <i>Sesleria</i> grassland and <i>Dryas</i> heath		16 Coastal heaths
	8 Alluvial forests		17 Sand dune vegetation complexes
	9 Alder-pedunculate oak-ash forests with <i>Salix cinerea</i> ssp. <i>oleifolia</i>		18 Salt marsh vegetation complexes
			19 Polder vegetation complexes



# What can the County Hedgerow Surveys tell us about the location of native provenance stock?

- Each county survey contains data showing the frequency that different tree species occur at in a range of hedge locations across the counties.
- These species list could be used to select species that are well adapted to local conditions for gapping up or new planting of hedges.



## Monaghan Hedgerow Appraisal Survey, 2021.

*A decade of change.*





West County Galway  
Hedgerow Survey

and

County Galway Townland  
Hedgerow Survey



For the Heritage Office  
Galway County Council  
2007

Giorria Environmental Services  
www.giorria.com

Table 5: Percentage frequency occurrence of species in county hedgerow surveys as a comparison with west Galway

Species recorded in hedgerows surveyed	Frequency Occurrence %			
	West Galway	East Galway	Cavan	Roscommon
Bramble	75	90	85	*
X Hawthorn	<u>56</u>	<u>90.3</u>	<u>96</u>	<u>99</u>
X Willow	<u>50</u>	<u>16.4</u>	<u>30</u>	<u>19</u>
Gorse	40	22.8	40	27
Hazel	33	11.1	14	7
X Holly	<u>29</u>	<u>12.0</u>	<u>32</u>	<u>20</u>
Blackthorn	25	55.3	51	53
X Ash	<u>23</u>	<u>15.2</u>	<u>66</u>	*
Fuchsia	21	*	*	*
Honeysuckle	17	13	14	*
Alder	15	*	*	*
Rowan	13	*	12	0
Oak	13	*	*	*
Ivy	13	64	59	*
Cotoneaster	10	*	*	*
Birch	8.3	1.2	9	0*
Elderberry	4.2	26.5	7	26
Guelder Rose	4.2	*	*	*
Traveller's Joy	4.2	*	*	*
Wild Privet	2.1	10.8	11	24
Dog / Wild rose	2.1	24	34	*

\* Not recorded, or recorded in another category (climber or tree species)

..the possibility of using optimal species combinations and FRM (Forest Reproductive Material) which is both adapted to site conditions and genetically diverse is often limited by what is available in nurseries.'

- 'Seed collectors and nurseries (private and public) are driven by economic considerations and produce what they expect to sell. Nurseries often minimize the number of species they grow for reasons that may relate to the accessibility and availability of seed sources, strategies to simplify management, to minimize the risk of unsold production
- To avoid being subject to the vagaries and practicalities of supply, ideally project-specific nurseries should be set up.
- Restoration practitioners who plan to obtain FRM from existing nurseries should communicate early on with nursery managers to provide sufficient time for propagation of the desired species and to allow seed collection standards for genetic diversity to be met.
- ..it is important to strengthen the capacity of local people in seed collection strategies to ensure the genetic diversity of planting stock'.
- [Forest Ecology and Management Volume 333](#), 1 December 2014, Pages 66-75
- **The plant supply situation in Ireland is common and ongoing in many other states.**

CAP 2023 is an  
opportunity for  
DAFM to  
promote  
Sustainable  
Hedge  
Management

- Support native tree nursery start ups and expansion of existing nurseries
- With training on seed and propagation
- With stakeholders – develop a code of best practice from planting to maintenance
- Spread take up of CAP hedge planting measures over several years so that nurseries can gear to meet the increasing demand
- Learn from the Native Woodland process over the last twenty years in terms of inventory, classification and development of management guidelines for the diverse range of hedge types to be conserved.





Go raibh maith agaibh!

