

# The use of trees and woodland in early medieval Ireland

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## Introduction

Trees and woodland are peripheral to the main concerns of early medieval historical studies today. In a sense, this is an outcome of the contemporary image created by medieval urban writers who rejected woodlands as dark, wild places, full of beasts and unknown dangers. Ironically, modern archaeologists tend to have much the same opinion. In many archaeological studies, woodland is only seen as a kind of economic 'black hole', being a place in the landscape that first needed to be cleared before it could be useful for agriculture. The use of woodland resources continues then to be seen as only of marginal importance for economic history.

It is not the purpose of this paper to over-emphasise the importance of woodland, a position that would be at variance with well-established evidence. The wealth of early medieval Dublin, for example, was based on a regional and maritime trade of hides, leather, wines, fine metalwork, amber jewellery and slaves. It is also clear that the early medieval Irish agricultural economy was highly structured with roadways, field-systems and settlements distributed throughout a landscape hardly more forested than today's. There is no room in such models for vast tracts of dark, primeval woods, populated by mythical Irish squirrels wandering large distances

from leaf to branch. It has been said that wood was the oil of the middle ages. Archaeological excavation has abundantly illustrated that wood provided fuel for warmth, the underwood and timber for houses, pathways and waterfronts and the raw material for an array of domestic and industrial crafts (O'Sullivan, 1990). The importance of woodland resources as an aspect of a complex economy in both rural and urban landscapes needs to be assessed.

## Pollen evidence

A reconstruction of the role of woodland in early medieval Ireland (6th-12th century AD) can best be carried out through a combination of historical, archaeological, palynological and dendrochronological evidence. In terms of assessing the actual character and extent of woodland, of primary importance is the analysis of pollen cores taken from raised bogs and lake muds. Pollen evidence from such sites as Garrandrean, Co. Wexford has been taken to indicate large scale clearance in woodland cover between the fifth and eighth centuries AD, due to increased tillage and agriculture (Culleton & Mitchell, 1976). Thereafter, the landscape would have been generally open, with only scattered oak-woods (*Quercus* sp.). Ash (*Fraxinus excelsior*) and hazel (*Corylus avellana*) would have been common in hedgerows and secondary woodland.

Willow (*Salix sp.*) and alder (*Alnus sp.*) would have been present on wetland margins, while other trees such as yew (*Taxus baccata*), holly (*Ilex aquifolium*), elder (*Sambucus nigra*), hawthorn (*Crataegus spp.*), blackthorn (*Prunus spinosa*), birch (*Betula sp.*) and rowan (*Sorbus aucuparia*) would also have been widespread (Mitchell, 1986, 165-166). Scots pine (*Pinus sylvestris L.*) may have survived in isolated pockets throughout the period, while elm (*Ulmus sp.*) seems to have nearly disappeared as a timber tree. Such species as beech (*Fagus sylvatica*), lime (*Tilia europaea*), hornbeam (*Carpinus betulus*) and sycamore (*Acer pseudoplatanus*) were absent from medieval Ireland.

#### Cartographic and placename evidence

Yet if we turn to placename and literary evidence, paradoxically we receive a picture of more extensive woodland cover. The Old-Irish word “*doire*”, denoting oakwood, is a very common element in Irish placenames. Placenames with the roots “*doire*”, “*eo*”, and “*beith*” are widespread signifying the presence at these places in the early medieval period of either single trees or woods of oak, yew and birch. Idiomatic historical phrases can also be intriguing. We could take for example the fourteenth-century “*Caiithréim Thoirdehealbhagh*” which describes cattle being hidden from raiding armies in Slieve Aughty’s “dense woods of lofty foliage”, a region in Co. Clare which has a great number of townland names derived from “*doire*”. Thence some regions may well have retained a largely woodland character into the late medieval period. One Tudor map completed in c.1563 shows the midland counties of Laois and Offaly and depicts named woodland in river valleys, on isolated bog

islands and lower mountain slopes (Smyth, 1982, viii-ix). In contrast, cartographic research by Oliver Rackham on the more reliable Civil Survey maps indicates that by 1654 the percentage of woodland cover had fallen in some counties to as low as 2.1 per cent (Rackham, 1986, 116).

#### Woodland in the landscape

Whatever their extent, the exploitation of these woodlands can still be traced for the earlier period in the historical annals, saints’ lives and early Irish law-texts that were being compiled by contemporary monastic scholars in the eighth and ninth-centuries AD. These record, as incidental detail, an immense wealth of social and economic history. It is clear from these texts that woodland could be owned, exchanged and managed in a variety of ways and was treated as a distinct, valuable zone within a highly structured agricultural landscape (O’Sullivan, 1992). According to one seventh-century law-text beginning with the words “*cis lir fodla tire*” the presence of ‘legal standard woodland’ (defined as being enclosed by a ditch or fence) could increase the value of agricultural land (Mac Niocaill, 1971, 85). A type of fence used in enclosing such woodland was described in the late seventh-century “*Bretha Comaithchesa*” as the “*dairime*” or oak-fence. This may have been made by partially felling young trees in a line and bending them over to create a laid hedge. Such a dense construction would be more efficient at keeping out browsing animals and may be indirect evidence for the practice of woodland management (O’Corrain, 1983, 250).

The presence of ash trees, which prefer well-drained, medium quality soils, was one means of recognising

land as 'upland cultivable land'. Overgrown land that needed an axe in its clearance formed another category of land type (Mac Niocaill, 1971, 85). In this context, it is interesting that the "boaire", as described in the eighth-century "*Crith Gablach*", must own a hatchet, an adze, saw and augur (MacNeill, 1923, 291). In common with other types of land, woodland was typically owned by the family kin-group but all law-abiding members of the "tuath" had certain rights within the wood. These included rights to the collection of firewood or nuts and the cutting of a certain amount of rods for wattling.

An insight into the relative values of different species can also be seen in the seventh-century tree list preserved in the "*Bretha Comaithchesa*". This lists twenty-eight different native species and classifies them into four groups (Kelly, 1976). Significantly these classifications are based on economic rather than botanical properties. The first grade, the "*airig fedo*" or the 'nobles of the wood' includes oak because of its acorns, its size and appearance, hazel for its nuts and rods, holly possibly for the use of its leaves for winter fodder, yew for the production of fine or 'noble' wooden artifacts and apple for its fruit and bark. There is also evidence of the symbolic importance of some individual trees, especially oak and yew (Lucas, 1963). These sacred trees or "*bile*" could be associated with tribal groupings at royal inauguration sites. Their destruction during the frequent cattle raids of the time by neighbouring rivals was seen as a gross affront. Named sacred trees could also be associated with individual monastic centres or saints. Thus the value of trees was not always an economic one.

### Pannage and wood-pasture

It is also likely that animals were maintained in selected areas of woodland. The medieval Irish annals typically provide a dry, laconic account of various battles, deaths and ecclesiastical or political successions. But references are also included to climatic or other natural phenomena. Between AD 672 and 1155 there are as many as twenty-three separate annalistic references to prodigious annual harvests of acorns (mast). For example in AD 836 the crop of mast was so heavy it blocked streams, in AD 969 eight bags were collected from beneath each tree. In AD 985 the crop was so great it lasted until the following year, while in AD 1038 the annals record that the crop was so abundant that even the runts of the swine were fattened. It has traditionally been believed by historians that these crops of mast were primarily used for fattening pigs, although the unpredictability of the harvests must have occasionally presented problems (Rackham, 1980, 119). Certainly pig-meat in the form of fresh pork and salted bacon was very popular amongst the medieval Irish. Cattle were also occasionally kept in woodland for winter grazing or for protecting them from cattle-raiding expeditions.

### Fruit and nuts

A reference in the Annals of the Four Masters for the year 1031 AD gives a clue to another likely use of the yearly harvests of woodland fruit and nuts. It reads as follows; "*a measure of oaten grain, or a third of black-red sloes, or of the acorns of the brown oak, or of the nuts of the fair hazel hedge, was got without stiff bargaining, at Armagh for one penny*" (O'Donovan, 1856, 823). It may be that such berries and nuts were

being used as a cash crop to be sold at town markets. Certainly apples were particularly highly valued, monasteries had their own orchards and secular tenants who moved from their property could be compensated by law for the apple trees that they had sown (O'Corráin, 1972, 53). Despite the perception of the value of woodlands, there seems to be little other evidence for the deliberate plantation of trees, the origins of modern forestry. This contrasts with later evidence from medieval England, where impyards for the nursing of seedlings and small saplings were established at least by the 12th century AD. For example the wood of Beauforest, near Winchester, was planted in 1276 AD with a bushel of nuts bought for 8d while 2,000 hazelnut plants were bought for 4s 1d in 1335 AD in Oxford (Harvey 1981, 15, 86). After the establishment of towns proper in the tenth century, the bulk of trade in most woodland materials must have been with the major centres such as Dublin, Cork, Waterford and Limerick. Excavations in early Dublin have discovered large quantities of blackberries, apples, sloes and hazelnuts (Bradley, 1988, 52) while the species of mosses that were used for personal hygiene in latrines could only have been specially gathered from the shaded tree-trunks, rocks and soils of deciduous woodlands (Dickson & Dickson, 1987, 29).

### Underwood

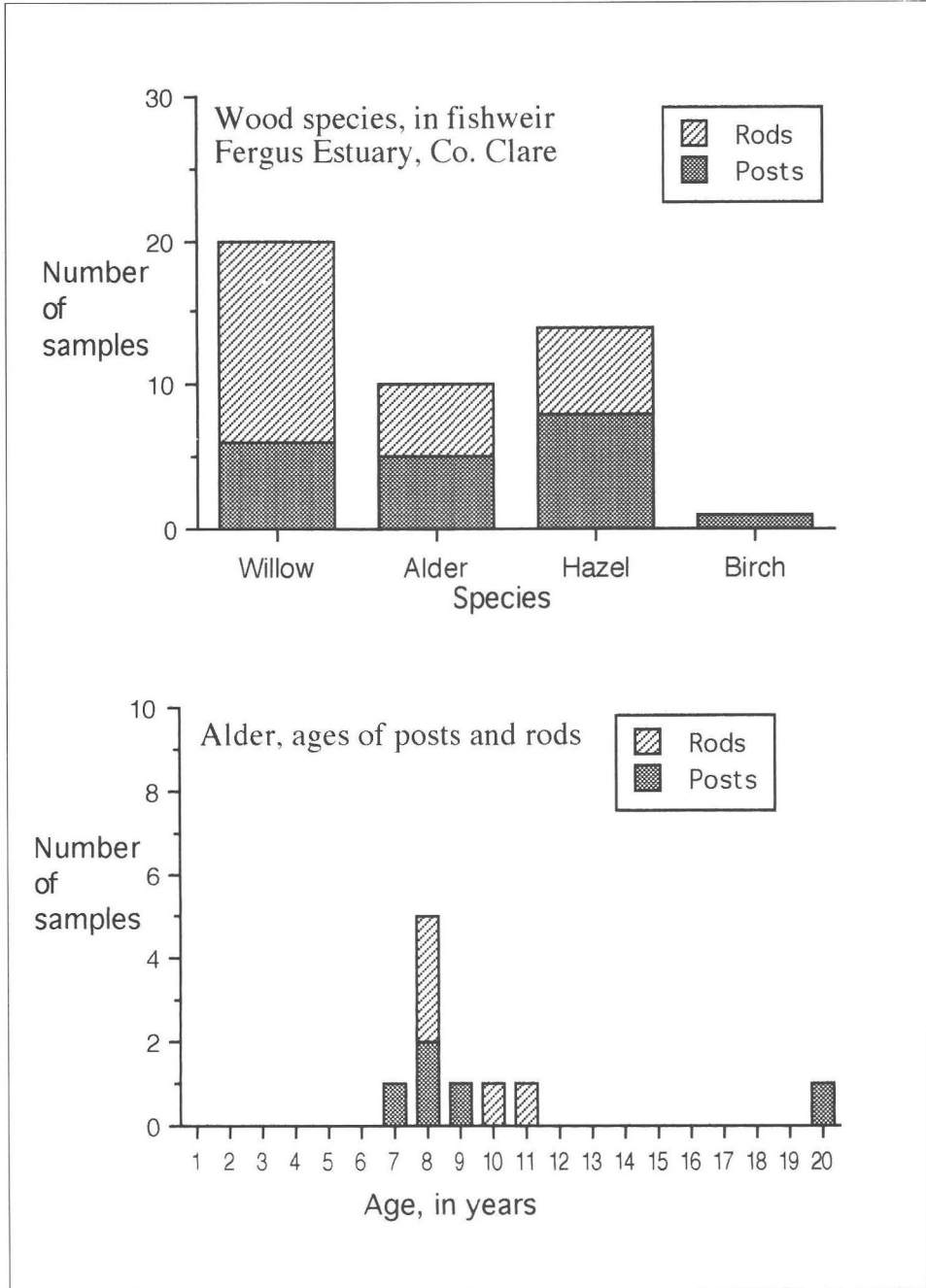
The house walls, property fences and wooden pathways of early medieval Dublin were typically of woven hurdle panels and these would have required vast amounts of straight, narrow rods for their construction. Indeed it has been estimated that over

the life-span of these houses (10-15 years) these walls would have been renewed several times (Wallace, 1988, 147). This would have required huge amounts of underwood, a fact that itself demands systematic coppicing rather than exploitation of areas of ordinary scrub. Such underwood could have been valued in areas of land, indirectly related to the labour required to crop it. As late as 1340 AD the Holy Trinity Priory in Dublin paid two men a shilling a day to crop underwood in the woods of Clonken only five miles south of Dublin (O'Neill, 1987, 100; Mills, 1891, 64). However increasing attention is being paid to the actual wood itself, recovered by archaeological excavation in areas of waterlogging.

### *Deer Park Farms, Co. Antrim*

The most important recent archaeological research on this subject has been carried out by Marie Neill on the wood found in an excavation at Deer Park Farms, Co. Antrim. The site was an early medieval ringfort or settlement, at the base of which waterlogging had preserved a number of circular wooden houses dated to the seventh-century AD. These had double walls of post-and-wattle in which a highly complex basketry-like weave was used. This technique would have required about six thousand rods for the largest house, with varying amounts for the other structures. The upright posts were simply chosen for size from mixed woodland, with alder, birch, ash, oak and holly all being used. In contrast the horizontal rods were entirely of hazel and tree-ring analysis has shown that these were possibly being taken at eight year intervals. It is probable that small areas of scrubby woodland at the margins of the farm would have provided the

**Figure 1**  
*Fergus estuary*



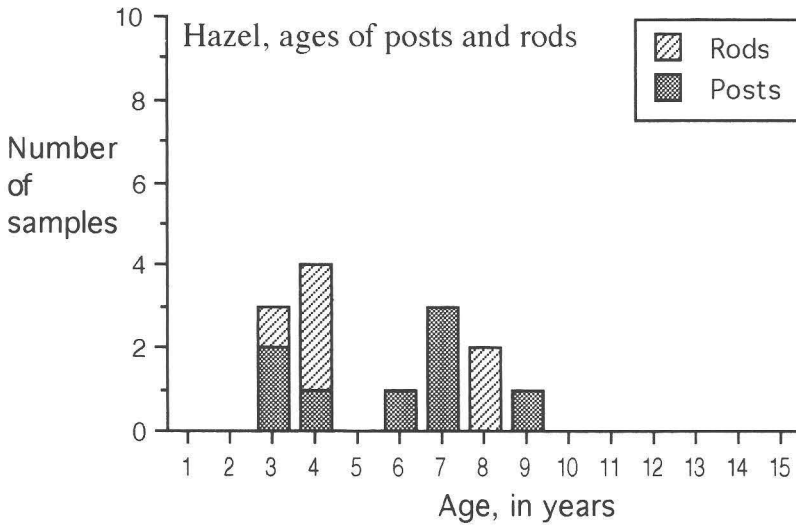
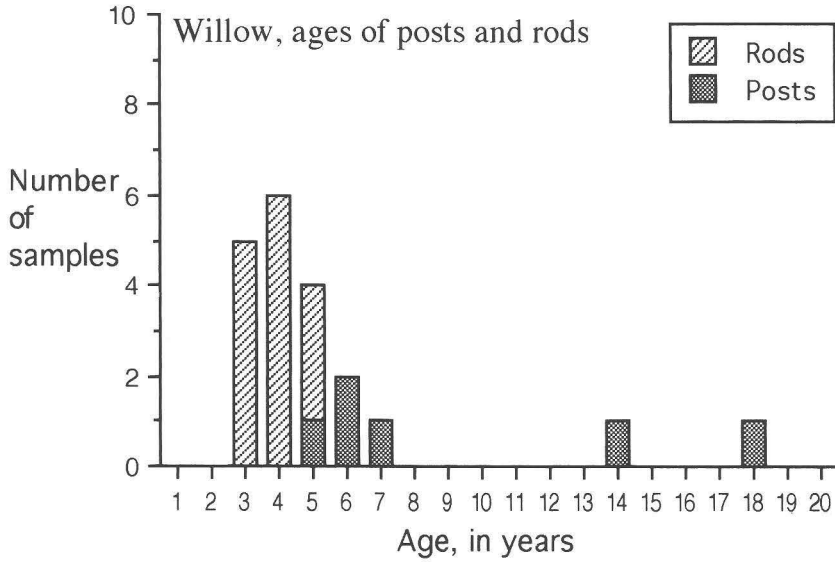
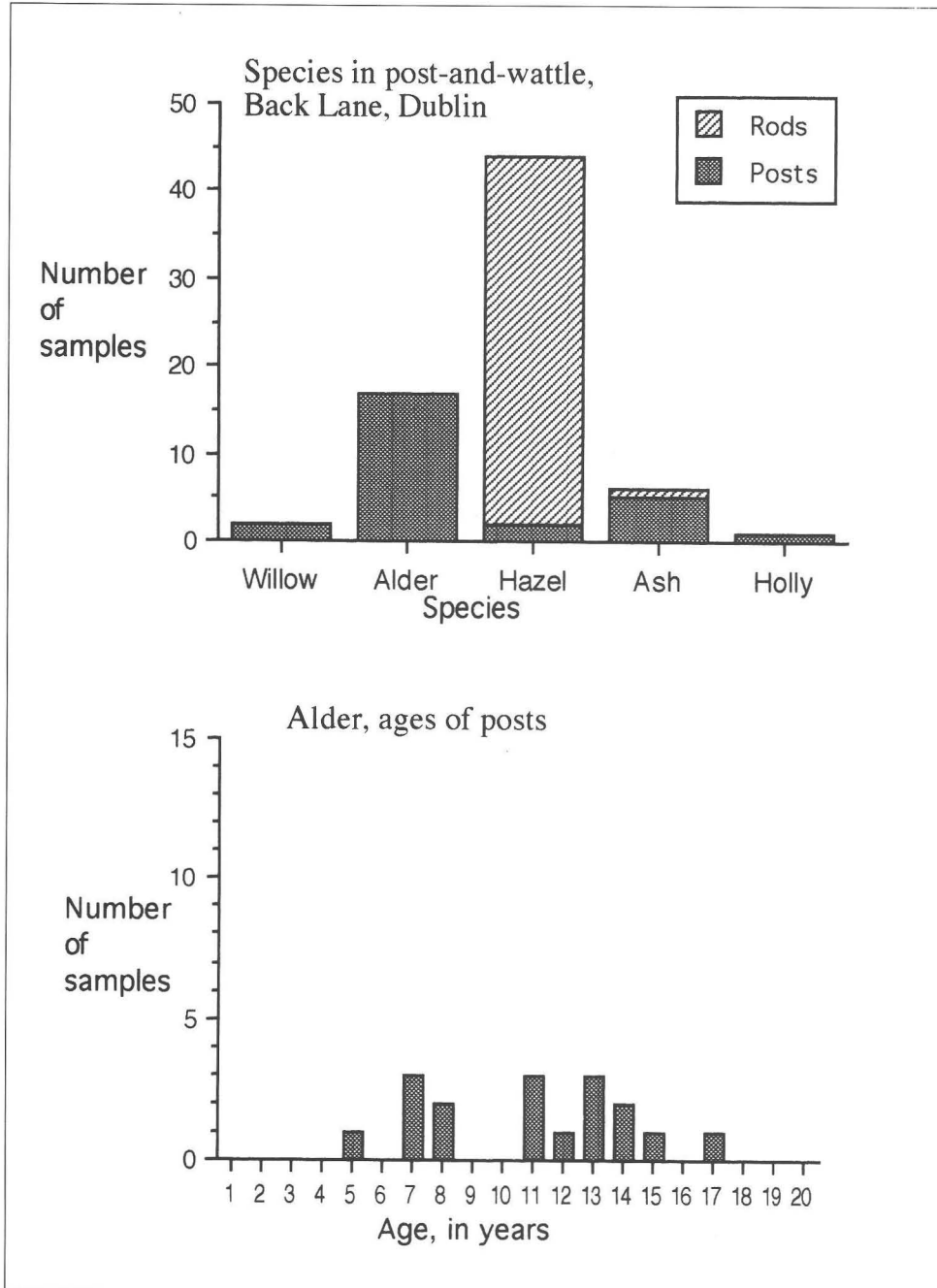
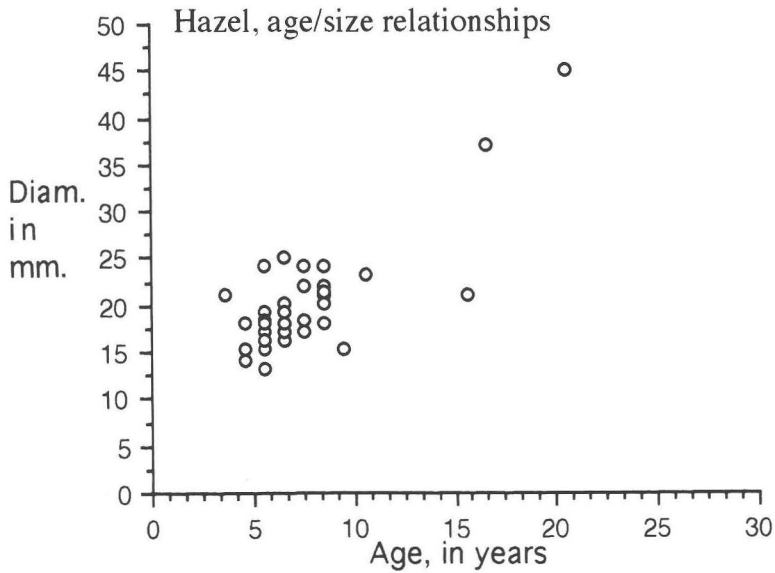
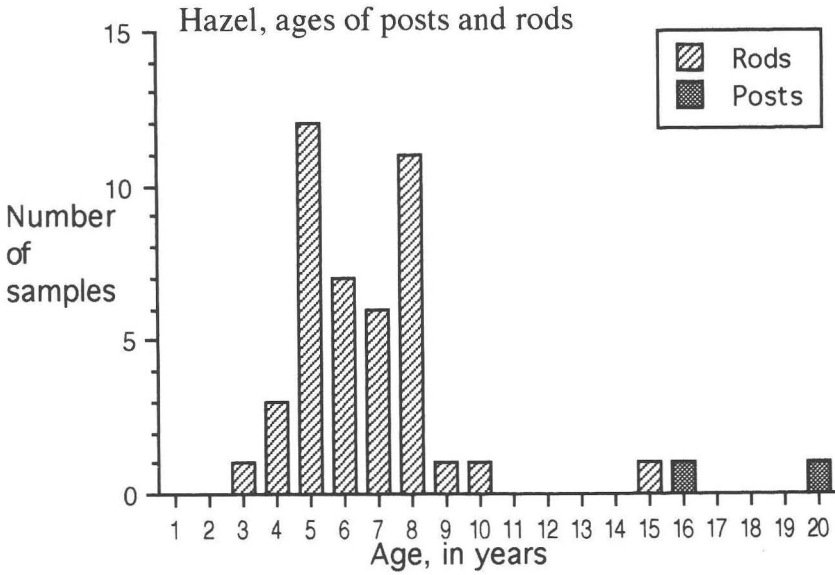


Figure 2  
Back Lane







necessary underwood (M. E. Neill, forthcoming, pers. comm.).

*Fergus estuary fishweir, Co. Clare*

It is also possible to trace the use of woodland growing on more marginal land. Recent intertidal archaeological surveys on the mudflats of the Fergus estuary have led to the discovery of early wooden fishweirs, one of which has been recently dated to the sixth-century AD (O'Sullivan, 1993, 1994). This structure comprised a sturdy post-and-wattle fence designed to guide fish swimming down with the tide into a net or trap. The predominant species used for the posts and rods in this structure have been identified as willow, alder and hazel (Figure 1), giving an insight into the original appearance of the surrounding landscape. The willow and alder would most likely have grown in a fen carr growing at the fringes of the salt-marshes. Tree-ring analysis of the wood suggests that immature willow, hazel and alder branches were simply being selected for size from adventitious growth. Such woodland would have produced sufficient raw material for such occasions, even without careful management.

*Back Lane, Dublin*

The evidence for woodland exploitation by urban settlements provides a contrasting picture. Huge amounts of wood were obviously needed daily for fuel, structures and specialist crafts. Recent excavations at Back Lane, in Dublin by Claire Walsh uncovered amongst other structures, a rectangular house dated to the early thirteenth century. Close attention was paid during the excavation by the author to the recording of the surviv-

ing post-and-wattle walls and preliminary analysis of the wood samples has been completed. The house can be classed as a Dublin Type 1 house, with internal roof supports and tripartite dividing walls. This is the classic house type from medieval Dublin, being built from the earliest Viking origins up to the Anglo-Norman period (C. Walsh, pers. comm.).

Clearly a range of species were being used for the upright posts, including willow, alder, hazel, ash and holly (Figure 2). When the tree-ring or age patterns of these various species were examined, no concentrations were apparent. Seemingly these posts were again simply being taken from suitably sized poles of any species from mixed woodland, although alder does predominate. In contrast, a clear preference for hazel was exhibited in the sample of horizontal rods. The distribution of ages in these hazel rods is also interesting, peaks can be seen at five and eight years, with over eighty per cent of the sample falling between these ages. The age/size distribution illustrated in the scatter diagram also suggests the rods were both of similar age and size.

The combined growth and age patterns indicates that hazel underwood, of a narrowly restricted size, was being cropped between eight and five years growth. The evidence would seem to suggest that some formal and complex system of woodland management was being carried out, of a shorter rotation than more recent practices (Rackham, 1982, pers. comm.; Crone, 1987). The Back Lane material confirms that the vast amount of underwood required by the settlement of early medieval Dublin was being supplied from areas of coppiced woodland.

## Timber

The second important use of woodland involved the growth, felling and conversion of large trees into timbers for making houses, trackways, water-fronts, watermills and a variety of other structures. Oak was the most preferred species in early medieval Ireland, the strength and durability of its wood made it especially suitable for loadbearing and architectural tasks. Indeed the eighth-century wisdom text "*Uraiccecht Bec*", describes the status of the 'accurate wright of oaken houses' as being equivalent to the lowest grade of nobility (Binchy, 1958, 48). But it is more difficult to say if standard oaks were being grown within a managed system. Indeed by the tenth century it appears that timber quality oaks were in widespread shortage (Mallory and Baillie, 1988) possibly explaining the preference for ash as a structural timber in the houses of Viking Dublin. Certainly the unique value of oak was recognised in the law-texts. Damages up to the value of two milch cows were due to the owner of a tree if its branches were removed or if it was felled without permission. Fines of a cowhide were imposed on anybody illegally removing oak bark for tanning leather.

### Woodmen

The felling and transport of timber from source to the medieval towns could have involved a class of specialised woodmen. The process of felling large trees by specialised craftsmen for use in timber seems to be described in one passage in Cogitosus's seventh-century *Vita Prima Sanctae Brigidae*. In the account, a large, tall tree was felled 'by those who used to ply their trade in a timber forest' and thereafter specialised equipment or

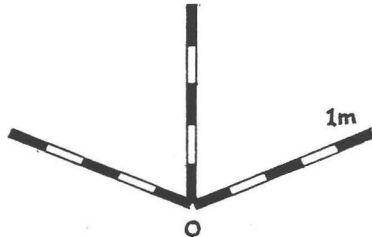
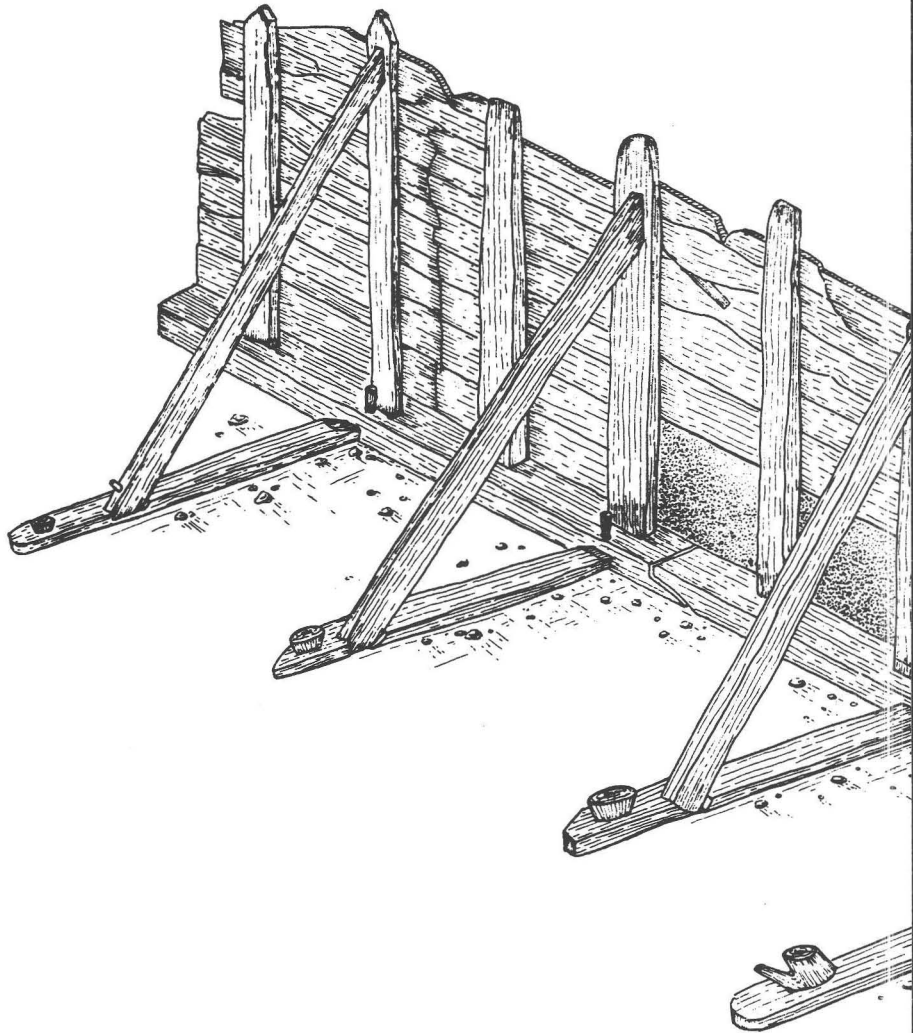
'skilled devices' were used to drag it out of the wood to the 'appointed place' (Connolly and Picard, 1987, 21). In the undated *Life of St Samthan*, carpenters are stated to have transported pine poles long distances home in carts drawn by oxen. Woodsmen would have been the first link in the chain of timber trade, involving vehicles and draught animals to transport roughly prepared planks and beams to a construction site. The conveyance of timbers across large distances could also have been accomplished by boats. Adomnán's seventh-century *Life of Columba* (Anderson 1961, 452) describes how pine was imported onto the island of Iona from mainland Scotland in the following terms, "*when dressed timbers of pine and oak for a long ship were being drawn overland, and timbers were conveyed from the great house, as well as for ships . . . with boats and cur-rachs to tow the timber through the sea*".

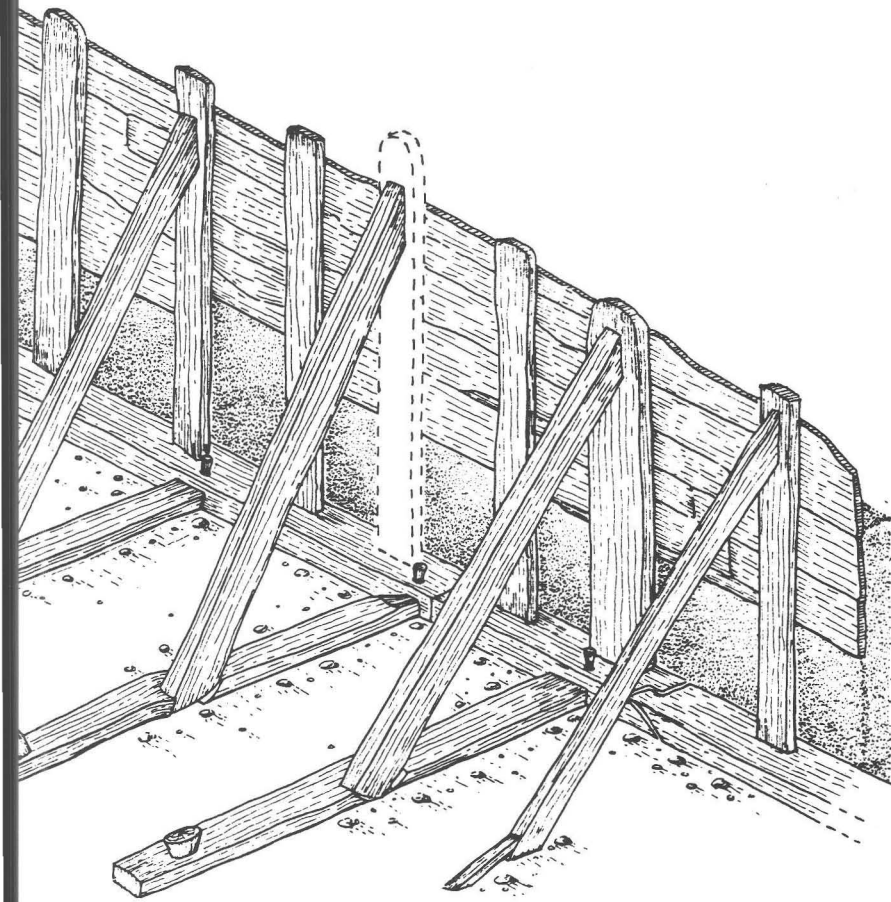
Bradley (1988, 53) has suggested that for early Dublin at least, Hiberno-Norse settlers in the countryside would have managed such trade. In later periods the trade of timber was managed by the native Irish. Indeed the Civil Regulations of Waterford implied that the "wode bote men" were troublesome, so much so that by AD 1458 an oath of loyalty was required from "*bene maistres of wod botes and bote-men*" (O'Neill, 1987, 99). The Holy Trinity Priory records in Dublin also account for the purchase for 20d of nine couples of oak for building a barn including nails, wattles and the hiring of a carpenter (Mills, 1891, 38)

### Anglo-Norman carpentry at Woodquay

The best evidence for the use of timber in early medieval Dublin are the wooden river waterfronts at Woodquay, the earliest of which has

**Figure 3.**  
*Reconstruction drawing of  
Anglo-Norman  
waterfront,  
Winetavern St.,  
Dublin.  
(Drawing by  
G. Rennie)*





been dated to 1210 AD. By this time native Irish carpentry styles were beginning to be used in an urban context, with the introduction of mortise and tenon joints, through-splayed scarfs and heavy hewn timbers. These structures have been well described by Dr. Pat Wallace and can be placed firmly within the north European tradition of front braced waterfronts (Wallace, 1982). Their construction involved a series of braced oak uprights in a horizontal baseplate supporting a vertical wall of planks which held back the estuarine clays, gravels and urban deposits dumped behind.

Excavations carried out recently on Winetavern Street by Andy Halpin

revealed further evidence for these waterfronts (Figure 3). These excavations have enabled an examination by this author of the timbers used in the waterfronts from the point of view of woodsmanship. Particular attention during the recording process was paid to species identifications, ages, growth rates, position of sapwood, knots and general appearance of the wood. With this information it is now possible to tentatively evaluate the types of trees used and the appearance of the original woodland (Figure 4).

The first thing to notice is the manner in which the largest timber possible was taken from each tree, there was little or no waste. Oak was probably

**Figure 4**  
Suggested  
parent trees for  
Winetavern St.  
waterfront  
baseplates,  
uprights,  
planking and  
ships timbers.  
(Drawing by  
A. O'Sullivan)



expensive and the carpenter had to get the most out of his raw material. The main baseplates were hewn from straight grained trunks, so only a few side branches had to be trimmed off. These trunks typically were aged between 80-150 years, and initially grew very fast for the first 20 years. The sapwood was left on the edges of the timbers therefore it is possible to estimate the size of the original trees. They were usually narrow, not much more than 40cms in diameter. These were possibly mature standard oaks, grown within a mixed hazel-oak managed woodland.

The subsidiary baseplates and uprights were taken from slightly smaller trees, aged 30-40 years, and had been half-split or radially split and hewn to a boxed heart section. The sapwood and even the bark was still present on the edges. These smaller timbers were probably taken from either fast-grown young oak saplings or mature coppiced oak-wood. Trees of this type are best found in periodically felled woodland. There were also a number of ships' timbers found in the excavations which came from different types of trees, with slightly wider trunks with heavy top branches. The complex 'stems' and 'knees' for the framing of the boats were taken from naturally curved and crooked side branches from the topwood of wide mature oaks. Such trees are typically found in hedgerows or in open land.

### Conclusion

In brief summary, woodland resources were important elements in the early medieval Irish economy. Woodland may have been valued, maintained and even included in land exchanges. Livestock such as cattle and pigs may have been foddered in

woodland. Fruit, nuts and mosses could have been gathered for sale in urban markets, while underwood and timber could have been coppiced and safe-guarded, felled at chosen times and transported over long distances for use in various types of structure. Further research in early Irish history, archaeology and environmental sciences will hopefully elucidate some of these questions.

### Acknowledgements

I would like to thank the Society of Irish Foresters for their invitation to present the Augustine Henry Memorial Lecture in the Agriculture Building, University College, Dublin, in March 1993. The lecture was entitled *The use of trees and woodland in early Ireland*. This article is a development of the main themes that were raised on that occasion. I would also like to thank Mary Deevy for carrying out wood-species identifications and for commenting on the text. I am also very grateful to Andy Halpin, Claire Walsh and Georgia Rennie who prepared Figure 3.

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