



# Your Forests – Your Future

As Minister of State with responsibility for forestry, I am committed to the continued development of forestry in Ireland. I am sure that our common goal is a strong, vibrant forestry sector which means returns for growers, a continuous supply of material to the timber processing and energy sectors and sustained employment. Forestry already makes a valuable contribution to the economy and has the potential to contribute significantly to the achievement of the *Food Harvest 2020* targets.

*Food Harvest 2020* sets out the vision and targets for the agri-food, fisheries and forestry sectors to 2020. The growth targets for 2020 are to increase the value of primary output in the agriculture, fisheries and forestry sector by €1.5 billion, to increase value added in the agri-food, fisheries and wood products sector by €3 billion and to achieve an export target of €12 billion for the combined sectors.

An income stream for landowners, a supply of timber to the wood product sector and for construction, a provider of employment (both direct and indirect), carbon sequestration and a source of renewable energy are just a few of the benefits of forestry. I am sure that forest owners, while appreciating the overall benefits of forestry, also want, at a personal level, to maximise the return from their crop.

It has come to my attention, from my meetings with representatives from the forestry sector and attendance at the IFA Farm Forestry Conference earlier in the year, that one particular challenge in the sector is mobilisation of the private timber resource, that is, to get the timber from privately owned forest onto the market.

Based on the uptake of afforestation grants over the last number of decades and inventory data, a large number of privately owned forests in Ireland are now at or approaching first thinning. I understand that thinning, where and when appropriate, is one means by which an owner may improve the end value and quality of the timber crop. For this reason, I have asked the Forestry Development Department of Teagasc to provide some basic information on thinning for inclusion in this newsletter – I hope this information will assist readers who are considering thinning or wondering how to go about it. At the current market prices per tonnes, I want to stress the importance of managing



**Mr. Shane McEntee, T.D., Minister of State at the Department of Agriculture, Food and the Marine.**

thinnings effectively as an additional cash crop for farmers and landowners.

Another means of acquiring information and learning from the experience of others is participation in a forestry producer group. Over twenty such groups have been formed throughout the country over the last number of years, with assistance from the Teagasc Forestry Development Department in many cases. Some information on forest producer groups is overleaf so that you can learn more about their purpose and formation. While the focus of the groups may differ, the underlying principle is the same – forest owners coming together to pool knowledge and resources and to market their produce.

A market for our produce is essential in all sectors. Thinnings may go for use as stakewood, pulpwood or energy wood. Wood, as a source of renewable energy, continues to grow in importance with the emerging wood energy market presenting a timely opportunity for forest owners for the sale of thinnings. The purpose of this newsletter is to provide some information on forest management issues such as thinning and producer groups and I hope it will be of some assistance to forest owners.

While it is important to manage and harvest existing forests, it is also vital, in order to sustain production and processing of timber into the future, to have a well-balanced age structure at national level. The upward trend in the level of new forest planting over the last number of years is encouraging with

grants for new planting of 8,314 hectares paid in 2010. The Programme for Government sets a target for annual new forestry planting of 14,700 hectares. This is an ambitious target and I accept that a lot of factors affect the rate of afforestation of which the availability of funding is one. Funding for forestry in 2012 is, like every other item in my Department's budget, subject to the outcome of the Comprehensive Review of Expenditure and will be determined in the context of ongoing discussions on the framing of the 2012 Budget. I want to reiterate that I am committed to achieving the highest possible level of funding for forestry, to ensure a sustainable and viable industry. However, while we are all aware of the many benefits, both tangible and intangible, of forestry, we also have to acknowledge the budgetary pressures and the many competing demands for funding.

In view of the amount that has been invested to date in forestry, by the Government and individual forest owners, it is essential that not only do we maximise the return from it but also that we safeguard this investment. I was particularly concerned about the extensive losses this spring due to forest fires. My Department is currently working on a set of guidelines to inform and assist land owners who engage in the practice of burning upland vegetation each spring. The emphasis will be on the proper methods of controlled and legal burning. I want to take this opportunity to again condemn those who flagrantly disregard the law and put the lives and property of others in danger. All rural dwellers must be vigilant and report any suspicious activity to the Gardai, as well as reporting uncontrolled and unattended fires to the Fire Service.

In this, the UN International Year of Forests, it is an opportune time to appreciate our achievements to date including the increase in forest cover from 1% at the beginning of the last century to just under 11% and the consequential benefits. In that time, there have been, and will always be, challenges to be addressed but I hope that by working together we can deal with those challenges and continue to develop forestry for the benefit of all.

**Shane McEntee, T.D.,** Minister of State at the Department of Agriculture, Food and the Marine.

# THINNING YOUR FOREST

## Why thin?

In both conifer and broadleaf forests, after canopy closure, there is intense competition between trees for light, moisture and nutrients. The vigorous trees with the largest crowns become dominant and the weaker trees with smaller crowns become overcrowded and suppressed. Eventually these weaker trees will die, and potential timber production is lost. Smaller and crooked trees can be removed in thinning, before they die, and processed into timber products such as pulpwood and stakewood (see Figure 1 below), otherwise they are lost as deadwood. In broadleaf forests, some of these weaker trees can be retained to keep the stems of the better trees free of branches.

Conifer thinning removes trees to concentrate timber production on a limited number of the best trees in the plantation. This allows the remaining trees to better utilise the growing space, nutrients and moisture and accelerate their diameter growth. Broadleaf forests have greater variety in form and vigour than in conifer forests and thinning is focussed on selecting the best trees at an early stage and eventually removing the smaller trees that are competing with them. As a general rule, thinning results in a smaller number of better quality trees with larger diameters i.e. more sawlog, compared to unthinned forests.

**Figure 1: Timber volume categories (assortments).**



## To thin or not to thin?

While thinning gives the forest owner a regular income stream every time the forest is thinned, opening up the crop by thinning can increase the risk of trees blowing over (windblow). The decision to thin must take into account site conditions and the economics of thinning. If your forest is very exposed with poor drainage conditions, thinning may be unwise. If your forest is small and is not close to a public road, the cost of roading would probably exceed the returns from thinning, so it would be best not to thin. Unthinned forests will ultimately have a larger number of trees at clearfelling stage but these will be in the smaller diameter categories.

*Forest owners should seek professional advice when deciding to thin. Consult a Registered Forester or Teagasc forestry adviser, who will assess your site and advise you on the most appropriate decision for your forest.*

## When to thin?

A good rule of thumb for when to thin conifers is when the lower branches have died off and there is no longer vegetation under the trees, as the canopy has fully closed. The faster the trees are growing, the sooner the forest will be ready for thinning. In conifer plantations, thinning increases the risk of windblow on exposed and poorly drained sites as stability is reduced. The risk of windblow is increased as trees get taller therefore if thinning is delayed the risk of windblow is

increased. In conifer forests, thinning should be carried out when trees are 10-12 metres (m) tall and generally between 15 and 20 years of age. In exposed areas you should be thinking of thinning earlier when the trees are 8 to 10 m height to reduce the risk of windblow.

For broadleaf forests, thinning recommendations are different for each species and generally involve an initial "tending" operation when the crop is 8 m high, 3-4 years in advance of the first thinning.

## How to thin?

In conifer crops, the first thinning operation usually removes every 7th or 8th line of trees, to provide access for harvesting machinery into the crop. Additional trees are then removed from the 3 rows either side of the line, focussing on the inferior/smaller trees. In second and subsequent thinning operations, harvesting machinery uses the same access lines removed in first thinning.

In broadleaf forests, every 7th or 10th line is removed with selection of Potential Crop Trees (PCT's) in between. For more information on broadleaf thinning see [www.teagasc.ie/forestry/docs/research/Teagasc\\_silvicultural\\_guidelines\\_Broadleaves.pdf](http://www.teagasc.ie/forestry/docs/research/Teagasc_silvicultural_guidelines_Broadleaves.pdf)

In Ireland, thinning usually takes place every 3 to 6 years depending on growth rates, size of the plantation, and timber prices. In fast growing forests, the time between thinning operations is often 3 to 4 years. First thinning often involves removing a total of 30% of the trees and is achieved by removing 1 line in 7 (14.5%) and selecting 1 tree in 6 from between the lines (15.5%). For smaller plantations thinning over longer periods (i.e. every 5 years) and removing a larger volume may make more financial sense. For more detailed information on conifer thinning please see [www.teagasc.ie/forestry](http://www.teagasc.ie/forestry) (downloads)

## Returns from thinning

Research conducted by Teagasc indicates that thinning up to recommended levels is more profitable than not thinning, primarily because thinned forests have a higher proportion of more valuable large timber (i.e. sawlog) at clearfelling stage than unthinned stands (Figure 1).

As smaller trees are removed during thinning, the mean diameter, volume and potential value of the remaining trees is increased. In essence, thinning results in more valuable trees. Financial analysis carried out by Teagasc indicates that a greater rate of return can be achieved if forests are thinned. The faster the growth-rate of the trees, the greater the return from thinning. An analysis of two productive forests in Co. Laois and Co. Galway indicates that returns from thinned crops were up to 12% greater than returns in unthinned crops. The profitability of first thinning operations depends on the volume removed and obtaining a good price for first thinnings, the greater the total volume removed, the greater the profitability.

**Table 1: Final harvest volume (clearfelling volume), thinning volume output and Net Present Value (NPV)\* of each stand for thinned and unthinned forests.** Source: (Farrelly and Hynes, 2007)

Site	Rotation length	Clearfelling Volume (m <sup>3</sup> /ha)	Thinning Volume (m <sup>3</sup> /ha)	Total Volume Output(m <sup>3</sup> /ha)	NPV €/ha
Laois Unthinned	40	1,059	0	1,059	19,573
Laois Thinned	40	670	470	1,140	22,254
Galway Unthinned	36	1,035	0	1,035	21,889
Galway Thinned	36	681	413	1,094	24,634

\*Net Present Value (NPV) represents the net costs and revenues incurred throughout the rotation, expressed in today's money. NPV is calculated using 15 year historical average prices. In recent years, higher returns from thinning have been achieved as a result of high timber prices.

# Forest Owner Groups

As the number of forest owners thinning their plantations is growing every year, it is important to share experiences with neighbouring owners and explore the potential for working together as a forest owners group to talk, thin and market timber successfully.

With the active involvement of Teagasc forestry advisers, to date 23 forest owner groups have been set up and are active throughout the country. These owners are developing their forest management and timber marketing skills which will give them the confidence to make more informed decisions about their forests. The key to the success of each individual forest owner group is the active involvement of all the members; each forest owner needs to be committed to the process.

A forest owner group can achieve improved timber prices by offering a larger and more regular supply of thinnings for sale to timber buyers. The forest owner group structure is more attractive to timber buyers as a consistent supply of timber can be obtained without the complexities of dealing with numerous individual owners. The group structure can also help achieve economies of scale associated with the cost of harvesting, transporting and road construction.

For information on local forest owner groups or how to go about setting up your own local group, contact your local Teagasc forestry advisor.

## Maximising the returns

The success of forest owner groups to date has hinged on introducing many growers to the practical realities and potential returns from thinning. It is also opening their eyes to a range of business opportunities arising from the thinning of both conifer and broadleaf forests.

A number of forest owner groups are already stimulating business and employment in their localities by taking on some of the harvesting work themselves. Manual felling with chainsaw is generally not practical in large plantations but may be an option in smaller plantations. Despite the fact that it is demanding and labour intensive work there is a growing demand for chainsaw training courses, facilitated through Teagasc, among forest owner groups. The courses concentrate on efficient and safe chainsaw use and allows forest owners to reduce harvesting costs and maximise the returns from their forests.

A range of small scale harvesting and extraction options are becoming available including horse, quad, mini tractor and trailer, tracked dumper or mini forwarder. In recent years the most popular forestry events organised by Teagasc and the Forest Service have been small scale harvesting machinery demonstrations. The last two demonstrations alone were attended by over eight hundred growers and more events are planned for next year. These demonstrations showcase new equipment and also show how contractors and forest owners are modifying standard farm machinery for timber harvesting, extraction and firewood processing. The demonstrations also include a strong emphasis on best environmental practice to reduce damage to the forest, as well as health and safety best practice. Many forest owners see opportunities to undertake thinning and harvesting themselves, using and modifying existing farm machinery to optimise the income from their forests.

## Forest Owners Group Case Study – “Ash Growers Group”

This forest owner group consists of 8 members with ash forests, relatively near each other, varying from 2 to 24 hectares (ha) between 12 and 15 years old. As the ash approached thinning stage, the growers began looking at their options. This group felt that they would be in a position to keep a greater share of the money generated from the crop, if they co-operated together. The owners attended Teagasc training courses to learn how to mark and thin ash, and to get a better idea of what the crop should look like after thinning. They also availed of the €750/ha tending and thinning grant from the Forest Service.

The growers then marked and chainsaw harvested their crops, using their own machinery. Extraction was mainly by tractor and trailer or quad and trailer. The farmers found the most effective system involved teams of two or four working together. The cost of harvesting varied according to the site but averaged out at approximately €750 to €1,000/ha and produced 25 to 30 cubic metres (m<sup>3</sup>) of firewood/ ha (1 m<sup>3</sup> in volume is almost 1 tonne in weight at felling).

The value of the ash harvested depending on the amount of processing involved, for example;

- 30 m<sup>3</sup> of ash thinnings from 1 hectare realised €1500 when sold at roadside as logs for firewood
- blocking and bagging the timber to sell as firewood logs increased the return to the group by 40% to €2100. While selling firewood at outlets, farmer markets, etc. increased the financial return, the time and cost of the additional work has to be factored into the cost of selling the firewood logs.

Although the group felt that there was a considerable amount of organisation and work involved in thinning their forests and processing and marketing the firewood, they were happy that they retained as much profit and control of the crop as possible.

## Forest Owner Group Case study – “County Clare Wood Energy Project” (CCWEP)

In recent years, the County Clare Wood Energy Project has been working to stimulate first thinnings to ensure a supply of energy wood for wood chip boilers in the county. The main focus is around organising forest owners into “clusters” of forests ready for thinning that are located close to each other. Registered foresters can then offer group services to the clusters for inventory, road grant and felling licence applications. These clusters of thinnings can then be marketed together and are more attractive to harvesting contractors and timber buyers. Clusters can avail of the Wood Energy Shop Window on [www.ccwep.ie](http://www.ccwep.ie) to advertise work to be carried out and registered foresters/contractors can advertise their services.

Mary and Seamus O’Dwyer of Caher, Co. Clare thinned their forest two years ago, as part of one of the first clusters in the project. In Mary’s words, “I didn’t have any experience of forestry so I got my registered forester to organise and supervise the whole operation. We agreed a price in advance and he took care of everything. We were very happy with the price we received for our first thinnings.”

**For all your forestry advice and training needs**  
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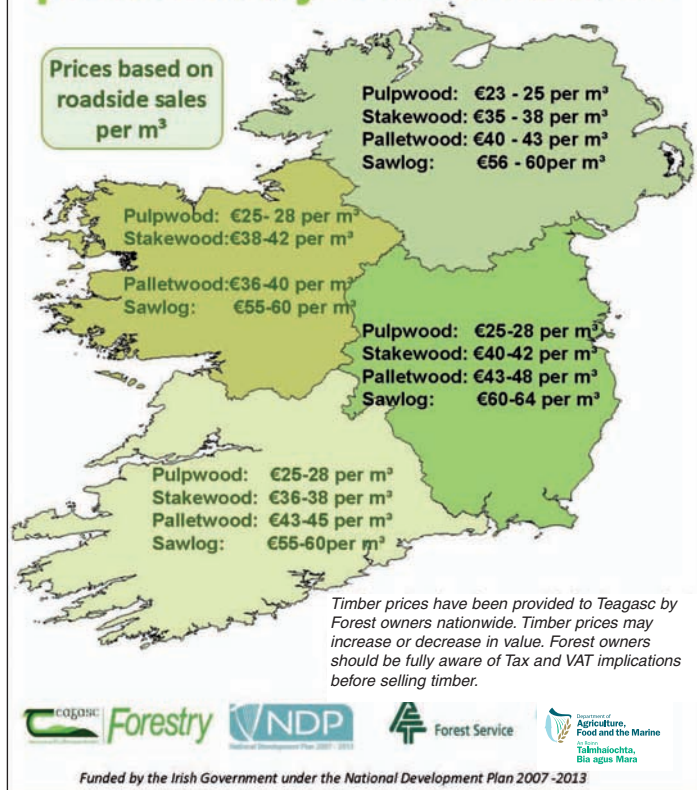
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## Regional Timber Prices provided by forest owners



**Figure 2: Regional timber prices**

As a forest owner it is important to be able to assess your trees and know what products will be harvested from your forest. If you feel you don't have enough knowledge, then get professional help. Teagasc and the Forest Service run training courses and demonstrations on many aspects of thinning throughout the country. Visit [www.teagasc.ie/forestry](http://www.teagasc.ie/forestry) for information on all aspects of forestry including lists of Registered Foresters, harvesting contractors and timber buyers.

## Legal Requirements For Tree Felling

The Department of Agriculture, Food and the Marine advise that, under Section 37 of the Forestry Act, 1946, it is illegal to uproot any tree over ten years old or to cut down any tree of any age (including trees which form part of a hedgerow), unless a Felling Notice has been lodged at the Garda Station nearest to the trees at least 21 days before the felling commences.

A Felling Notice may be obtained from any Garda Station or directly from the Felling Section of the Forest Service of the Department. A copy can also be obtained on the Department's Website.

The requirement for a felling licence for the uprooting or cutting down of trees does not apply where:

- The tree in question is a hazel, apple, plum, damson, pear or cherry tree grown for the value of its fruit or any ozier;
- The tree in question is less than 100 feet from a dwelling other than a wall or temporary structure;
- The tree in question is standing in a County or other Borough or an urban district (that is, within the boundaries of a town, borough, or city council area).

Other exceptions apply in the case of local authority road construction, road safety and electricity supply operations.

Penalties for illegal felling can be severe, ranging from fines of up to a maximum of €63.49 per tree to imprisonment for up to 2 years. In addition to any fine which may be imposed by the Court, the Minister may, by Order, require the person convicted to replant.

For further information, please contact Felling Section, Forest Service, Department of Agriculture, Food and the Marine, Johnstown Castle, Wexford.

Tel: (053) 9160170 / 9160174 / 9160175 / 9160181.  
Email: [info@agriculture.gov.ie](mailto:info@agriculture.gov.ie)  
[www.agriculture.gov.ie](http://www.agriculture.gov.ie)

## Steps to successful thinning

**From Year 12 onwards you need to start preparing for thinning as the planning process can take over a year so . . .**

### 1) Open Inspection paths

- cut once the trees have closed in
- remove the branches to head height between two lines of trees
- cut every 50th row of trees
- inspection paths should give an overview to potential buyers of both good and weak areas in the forests
- aerial map can be used as a guide

### 2) Join a Forest Owner Group

Check with Teagasc and other local development organisations for details of local forest owner groups

### 3) Inventory

- carried out when the crop is about 12 to 15 years
- completed by a professional forester
- information then used to compile a management plan
- keep a copy

### 4) Forest Roads

- illegal to stack timber on the side of the public road
- minimum requirement is a bell mouth entrance/loading bay
- larger sites may require the construction of a harvest road
- enquire about forest road grant availability

### 5) Felling Licence

Felling any trees is subject to the 1946 Forestry Act and will require a Felling licence – this also applies to thinning and cutting trees for a bell mouth entrance/road.

### 6) Timber marketing

Timber should be put on the market before harvesting to ensure that the timber is harvested and cut to the lengths required by the market. It is best to notify timber buyers well in advance (2 months) of upcoming timber sales; this will give them ample opportunity to inspect the site and assess the timber quality and consider harvesting options.

The owner or forester/contractor also needs to establish which log categories buyers require and in what quantity they will take the logs (a couple of loads per week or month). Start with local processors to keep the haulage cost to a minimum. Shop around to ensure you are getting the best possible price for your timber.

### 7) Timber sales Agreement

Before any thinning or timber sale commences a Timber Sale Agreement should be in place to cover all aspects of the sale e.g. agreed timber price, payment schedule, VAT rate, insurance, felling licence conditions, start/finish date etc.