

Heritage Council's Policy Paper on:

Forestry and the National Heritage

The Heritage Council

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Foreword

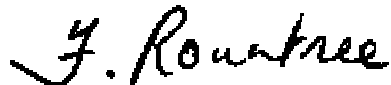
In proposing policies and priorities for the national heritage (The Heritage Act, 1995, Section 6(1)) the Heritage Council seeks to promote the coordination of all activities relating to its functions (The Heritage Council, 1995, Section 6 (3c)).

The activities of the forestry industry as detailed in the publication *Growing for the Future: A Strategic Plan for the Development of the Forestry Sector in Ireland* will have major impact on the national heritage.

The recommendations in this report seek to ensure the identification, protection, preservation and enhancement of the national heritage within the context of the *Strategic Plan*.

The report has been prepared in a spirit of cooperation with many agencies and public bodies and the Council thanks everyone who has contributed.

The acceptance of the recommendations will secure long-term benefits for our national heritage and for those communities in which the forestry will be developed.



Freda Rountree
Chairperson
The Heritage Council
March 1999

Introduction

The Heritage Council was established under the Heritage Act, 1995. It is an independent body which has a statutory responsibility to propose policies and priorities for the identification, protection, preservation and enhancement of the national heritage. This includes flora, fauna, wildlife habitats, geology and landscapes. Current forestry policy proposes a large increase in the area to be afforested over the next 30 years and as such, forestry was identified by the Heritage Council as one of the activities which has great potential to impact on Ireland's heritage.

There is now an acceptance that large-scale and inappropriate planting can cause considerable damage to Ireland's heritage. Current forestry policy makes efforts to ensure that these negative impacts are minimised, but there is an urgent need to integrate heritage issues at the strategic planning level of the forestry policy. Many of the key elements for addressing heritage concerns are still being developed, as is an effective regional planning mechanism, yet afforestation is continuing at a substantial rate. If forestry is to be truly sustainable, it is questionable whether planting should continue until such time as effective measures and structures are put in place to deal with the heritage concerns. The recommendations in this document propose how this might be achieved.

Forestry has considerable potential to enhance Ireland's biological and landscape diversity, to offer aesthetic and amenity benefits while at the same time safeguarding our existing heritage and providing real economic benefit to local communities. Historically, forestry policy arose out of a perceived need to become self-sufficient in timber. The area of land under forestry was so low that almost all structural timber was imported until recently. To address this shortage, fast maturing coniferous timber was the principal planting choice, and considerable areas were planted with lodgepole pine and Sitka spruce, mainly on land which was not profitable for agriculture. Areas which would not now be planted, either on economic or environmental grounds, were planted and a need arose to find end uses for timber which was only useful for pulp. However, as expertise developed both in growing and processing home grown timber, Irish timber has gained acceptance in the building trade.

The quality of land becoming available for forestry is improving. In light of the forthcoming review of Ireland's forestry policy there is now an opportunity to look at putting in place a forestry programme which is environmentally, socially and economically balanced. Such a programme has the potential to impact on the national heritage in a positive manner.

Economically, a proportion of conifers is desirable to support existing industries, but this in itself is not valid justification for having a forestry policy which is over-dependent on conifers. Just as Ireland once had a shortage of high quality coniferous timber, there is currently a considerable demand for high value hardwood timber. This must come from sustainable sources and there is potential in Ireland to develop such a source. The same research and development now needs to be put into hardwoods as was, in the past, put to developing softwoods. For example, Ireland's substantial

furniture industry almost exclusively imports hardwood timber, and there is currently, and will be into the future, a demand world-wide for good quality hardwoods.

In addition to addressing the country's economic requirement, forestry policy should seek to ensure that an expanded forestry programme integrates more sensitively into the Irish landscape where indigenous woodland comprises mainly broadleaved trees. Ireland's planting programme should strive to strike a balance between coniferous and broadleaved trees, and a forestry policy with targets for a 1:1 conifer to broadleaved ratio would be most appropriate.

1. Historical Context

After the last ice age a mixed deciduous woodland developed in Ireland, but since the Neolithic the area of woodland has continuously declined. By c.1900 only about 1% of the country was wooded. The origins of Ireland's state forestry date from 1903, but the major increase in afforestation dates from the post-Second World War years, when planting on peatlands became the dominant activity. Despite the fact that Ireland now has 8% of its land area under forestry, it is still the least wooded country in the European Union. Clearly there is immense potential to expand the forestry base in Ireland, but any expansion of the sector should be done in a manner that integrates into, rather than overwhelms, the social and landscape fabric of the country.

The increase in forested area, and the further planned forestry expansion, is often portrayed as being beneficial for contributing to the reforestation of Ireland. However, planting non-native, species-poor, conifer plantations, on habitats of conservation importance offers few of the benefits of indigenous mixed broadleaved woodland, particularly in terms of biological and landscape diversity.

2. Ireland's Forestry Policy

The first official government statement of goals and aspirations for future forestry development in Ireland, was published in 1996 as *Growing for the future: A Strategic Plan for the Development of the Forestry Sector in Ireland*. This document focuses primarily on the development of the forest sector up to 2015, but gives outline projections to 2035.

The Strategic Plan is a detailed forestry policy document, setting out clear policies for each sub-sector, supported by a set of direct actions for government. The broad policy thrust outlined in the Strategic Plan is:

- a target of a two and a half fold increase in the area forested over a 30 year period
- the continued dependence on short rotation conifers
- the continued planting of mainly single species stands of forest.

If targets are met, it will mean that 1% of the total land area of Ireland will be afforested every three years, a rate of landuse change which will have a great impact on the character of the countryside. It will also firmly place forestry as the second most important land use in Ireland, pitting [forestry and agriculture](#) in direct competition for land.

The Heritage Council would question the appropriateness in the Irish context of the model for forestry development that is outlined in the Strategic Plan, and considers the development of a forestry sector equally dependent on coniferous and broadleaved trees, with greater local community involvement than at present, as being more appropriate for Ireland. This is the essence of sustainable forest management.

3. Heritage Implications of the Strategic Plan

The following are some of the principal concerns for heritage, arising from the Strategic Plan:

- i. While heritage issues are addressed in the Strategic Plan, they are not covered in the same detail as the sections dealing with timber production and processing capacities. There is a need to integrate heritage issues into the strategic planning level of the Strategic Plan. Many of the key elements for addressing heritage concerns are still being developed, yet afforestation is continuing at a substantial rate. If forestry is to be truly sustainable, and if real value is placed on Ireland's heritage, it is difficult to see how such a large-scale expansion of the industry is allowed to continue without effective measures to protect and/or enhance Ireland's heritage being put in place.
- ii. The Strategic Plan is likely to lead to increased planting on marginal agricultural land and is unlikely to involve significant diversity of species, age or purpose of planting. Much of the new planting, relative to mixed broadleaved planting, will be of little biodiversity or landscape value and, in some cases, will cause further damage to Ireland's heritage. As much of Ireland's remaining wildlife and archaeological heritage occurs on marginal agricultural land, any significant land use change of this land category could have serious implications for Ireland's heritage.
- iii. The principal mechanism employed to ensure that future plantations do not impact negatively on Ireland's heritage is to not grant aid plantations that impinge on listed and designated sites. This is an important and welcome strategic policy, but the Strategic Plan places too great an emphasis on the current lists of designated areas and sites for achieving natural and archaeological heritage protection. The Special Areas of Conservation (SACs), Special Protection Areas (SPAs), National Heritage Areas (NHAs) and Record of Sites and Monuments should not be regarded as definitive inventories as they are far from comprehensive. In addition the Irish landscape is full of heritage interest of a general nature, an interest with its own value and significance beyond those "special" sites that have been listed or designated. Any large-scale land use change, such as the proposed expansion of forestry, must include detailed site level scrutiny to ensure that the landuse change does not diminish the heritage interest of the area planted.
- iv. Better baseline information is needed on landuse and soils, native species and the biodiversity of habitats, hydrology and the aquatic environment, and the impact of forestry on these aspects of our heritage. Without this information, a consistent strategic approach to managing the heritage implications of afforestation on different types of land is impossible. The Heritage Council would question the wisdom of progressing with such a comprehensive programme of landuse change without fully knowing the consequences of such change.

The establishment of multi-skilled units within all forestry bodies would ensure that these issues are effectively addressed. The units would advise the forestry sector on

the development of the industry within a model based on sustainable forest management. This model is considered in more detail under *Landscapes and Sustainable Forest Management* in section four.

4. Recommendations Securing Benefits for the National Heritage

The continued development of the forest sector in Ireland, as outlined in the *Strategic Plan*, has implications for our national heritage which need to be highlighted and addressed. These can be considered under the following headings:

- 4.1. Species and site suitability,
- 4.2. Biological diversity,
- 4.3. Hydrology and aquatic heritage,
- 4.4. Archaeological heritage,
- 4.5. Architectural heritage,
- 4.6. Landscapes and sustainable forest management,
- 4.7. Legislation.

Whilst each of these aspects is considered under separate headings, it must be stressed that a compartmentalised approach to heritage should not be adopted by the forestry sector.

Rather any response must recognise the need for the integration of heritage issues as a core component of the industry's development. The heritage units referred to earlier will play a major role in this work.

4.1 Species and Site Suitability

One of the overriding principles of any forestry policy should be the desire and ability of the policy to ensure that tree species and soil suitability are matched at a local, site specific level. This is of crucial importance to guarantee the success of a fully integrated forestry policy which safeguards our national heritage. At present there appears to be either an absence of, or inability to access, data on the precise tree species mix and site selection at a local level making it difficult, if not impossible, to monitor progress towards achieving some of the targets set out in the *Strategic Plan*. It also makes it impossible to demonstrate that current planting is making best use of local growing conditions. This in turn can impact on biodiversity and the natural heritage.

Recommendation: that tree species and soil suitability be more finely matched in future forestry planting.

This can be achieved by:

- Completing the National Soil Survey
- Providing advice on the correct species to plant, based on a site specific assessment
- Conducting localised trials and breeding programmes with native species
- Collating and assessing the quality and scale of data already collected and on future plantings to include species and number planted, spacing, location, etc.
- Targeting forestry grants to encourage a greater diversity of species mix on better agricultural land
- Undertaking a soil survey evaluation as a prerequisite of new plantings and replantings
- Encouraging the planting of native species

In the Strategic Plan no link is made between the sites likely to be afforested and the desired species mix, although species suitability is considered at the grant application stage. It is crucial that diversity be encouraged at the strategic level, otherwise there is a risk that species may be planted on inappropriate sites in order to fulfil policy targets.

Recommendation: that diversity of planting be encouraged at the strategic level.

4.1.1 Tree Species Selection

The Strategic Plan has a target of 20% of forests being comprised of broadleaved species reflecting demand in the U.K, Ireland's most significant market. However, global annual demand for industrial wood is set to grow to 2000 million m³ by 2015, with softwood accounting for 67% and hardwood 33%. This demand is not reflected in the annual broadleaved planting target, yet it provides valid economic justification for increasing the percentage of broadleaved planting in Ireland.

Ireland has the lowest percentage of broadleaved planting in the EU, where on average, 60% of all trees planted are broadleaved species. This demonstrates that Ireland is clearly out of line with its EU partners in terms of planting policy, and the proportion of broadleaved planting in Ireland is far too low. Even allowing for this major discrepancy in planting targets, trying to meet the low target of 20% will be difficult without some mechanism to encourage planting of high productivity soil with broadleaved species.

The current forestry practice makes little use of mixed stands despite their obvious silvicultural and heritage benefits. This situation should be addressed as mixed stands provide real opportunities to enhance biological and landscape diversity, and provide future opportunities to modify stand composition to suit future rather than current objectives. It is also well established that mixed stands are more resilient and greatly reduce the risk of windthrow, and biological disaster through disease or pest infestation.

Recommendation: that Ireland's forestry policy adopt a strategic planting target of 1:1 broadleaved species to conifer species.

To achieve this:

- Encourage the planting of mixed species stands to retain as much flexibility as possible, for as long as possible, in the utility of the woodland plot;
- Promote the benefits of mixed woodland stands, and native species;
- Define the secondary species to include broadleaved or native species;
- Introduce a requirement to plant broadleaved and/or mixed stands on more fertile sites.

The Strategic Plan highlights the fact that Coillte Teoranta is planting broadleaves on only 3% of the area they afforest. It is assumed that this area includes the land planted under the Coillte Farm Forestry Partnership Scheme. This low level of broadleaved planting is surprising since the scheme should in theory be making better land available. To overcome any reluctance to plant broadleaved species under current policy direction, and in order to radically alter the national conifer/broadleaved ratio of planting, a strategic decision could be taken for Coillte to plant primarily broadleaved species.

Recommendation: that the planting of broadleaved species becomes a strategic policy target for Coillte.

Only conifers are grown under Coillte's Farm Partnership Scheme. The reason cited for this is the perception that broadleaves cannot be grown commercially within the short rotation timescale currently used for conifers. In the opinion of the Heritage Council, there are many options for broadleaved plantings which would be appropriate under the Farm Partnership Scheme, and these would be more compatible with the objective of maintaining and enhancing biological and landscape diversity in the Irish countryside.

Recommendation: that the planting of broadleaved trees, suitable for short rotation cropping, is promoted under the Farm Partnership Scheme.

4.1.2 Seed Provenance

The genetic and potential economic resource of Irish seed is undervalued in the Strategic Plan. Local seed sources may prove to be better suited to local conditions than the imported seed that is frequently used, and the use of local seed provides an opportunity for local communities to become involved in the forestry industry. While efforts have been made to choose suitable seed provenance for Irish conditions from European sources, imported seed may also be selected because it is either cheaper or more easily available than local seed. The latter is poor justification for determining the operation of one key element of the forestry industry, and does little to develop the community base of an effective forestry policy. Any truly integrated, long-term forestry policy should make strenuous efforts to develop not just the harvesting element of the industry but also the seed provision element. The advantages, if any, of utilising local seed can only be assessed after considerable research and development, and resources will need to be allocated to this area.

Recommendation: that Ireland's forestry policy should encourage use of local Irish seed.

This could be achieved by:

- Putting greater research and development resources into utilising local native seed as the base for the forestry industry;
- Introducing higher incentives for native broadleaved species, rather than for all broad-leaved species;
- Incorporating native broadleaved trees in all future planting.

4.1.3 Forest Stand Diversity

Uniform, even-aged plantations are of limited biological diversity value. Forest stands with structural and spatial diversity provide the greatest opportunities for enhancing biological and landscape diversity and the greatest stability to woodland stands. The planting of structurally and spatially diverse stands of woodland should be a strategic target. Diverse woodland stands would encourage the development of selective felling techniques, thereby reducing many of the negative impacts of clearfelling.

Recommendation: that greater forest stand diversity be encouraged as part of promoting sustainable forest management.

4.1.4 Silvicultural standards

The Strategic Plan recognises that farm forestry is driven by afforestation grants and premium support, rather than by long-term commitment to growing a timber crop. Combined with the flat rate nature of the grants there is a strong likelihood that farmers would place greater emphasis on reducing costs rather than on enhancing the quality of the growing crop. This problem is exacerbated in the case of broadleaves where the grants are substantially higher and a greater level of maintenance is required over a longer period of time. Little research has been done to challenge the

view that broadleaves are uneconomic and this gap needs to be addressed. Clearly there is a paucity of research on broadleaved tree management and a lack of silvicultural skills amongst forestry owners. However, this does not justify the lack of development in this element of the forestry industry.

Recommendation: that substantial research and education effort be directed at developing broadleaved tree management and silvicultural skills amongst forestry owners.

4.2 Biological Diversity

In the past, much of Ireland was covered in woodland, but due to the clearance of woodland by humans and the expansion of bogs, very little semi-natural woodland remains. That which remains is of high nature conservation value as it could be considered a relict of what was once an extensive habitat. Approximately 5,000 ha of semi-natural woodland is now in State ownership in national parks and nature reserves, but there is a risk that the ecological importance of this resource could be diminished as a result of little, active management. There are no conservation reasons why these areas could not include limited commercial management, as active management has the potential to enhance the conservation value of woodland.

There is no systematic inventory of the extent and location of the remaining areas of semi-natural woodland in Ireland, but probably less than 15,000 ha remains. This is a resource which has hitherto been ignored but is now the subject of a millennium project supported by, amongst others, the Heritage Council, the Forest Service, Dúchas - National Parks and Wildlife and the Tree Council of Ireland. To maintain and enhance the biological diversity value of semi-natural woodlands, their active management must be encouraged both to highlight the resource potential, but also to protect their nature conservation value. The correct management and nature conservation of these areas of semi-natural woodland should form an integral element of a sustainable forestry policy.

Recommendation: that a complete inventory of the remaining areas of semi-natural woodland in Ireland is undertaken, and their active management and conservation is promoted.

Forestry expansion will continue mainly on enclosed land, and often on land which is unproductive from an agricultural perspective. This unproductive land is often the main area of nature conservation value within farm holdings, thus any trend to increase the rate of planting of these areas could have serious adverse implications for biological diversity in the Irish countryside. To ensure that the biological diversity of agricultural land is maintained, unproductive areas which are of nature conservation value should be identified and efforts made to ensure that farmers receive a sufficient level of payment to maintain these habitats, making planting a less profitable option.

Recommendation: that sites of high nature conservation value on farmland should not be planted, and that landowners receive sufficient payment to manage these areas for their continued heritage value.

Hedgerows are of such nature conservation importance in an Irish context that special measures for their protection are required under the terms of the EU Birds and Habitats Directives. However, hedgerows should also be viewed as a potential farm timber resource. At present Ireland's hedgerows are undervalued both in terms of their wildlife value and their timber potential, and not being considered an asset, they are consequently removed. This is a very undesirable trend in terms of maintaining biological diversity in the countryside. An effective forestry policy should include specific measures targeted at hedgerow management to demonstrate their importance as an on-farm resource, thereby enhancing their value, thus leading indirectly to their

maintenance on the farm. This would be a very important link between Ireland's forestry and nature conservation policies.

Recommendation: that current forestry policy should incorporate specific measures targeted at hedgerows to demonstrate their importance as an on-farm resource.

Many peatlands and other upland habitats of high conservation value have been damaged over the years as a result of inappropriate planting. Some of these plantations were so unsuitable for forestry that today the stands are little more than a tangle of useless timber which would be a loss-sustaining exercise even to remove. These sites should never have been planted and detailed consideration must be given to the most appropriate future management of the sites. The objective of the future management of these sites should be to restore or enhance their nature conservation value, and it must be acknowledged that repairing some of the past mistakes will require a substantial allocation of resources.

Recommendation: that peatland sites, where forestry has failed, be managed to restore or enhance their nature conservation value.

The Heritage Council welcomes the policy decision not to grant-aid forestry in sites designated for nature conservation, i.e., NHAs, SACs and SPAs. This is a positive action affording increased protection to many of Ireland's remaining nature conservation sites which have been identified for designation. However, the inventory of sites of nature conservation value, particularly upland habitats, is incomplete, so this policy alone is insufficient to ensure that future forestry development does not further damage Ireland's natural heritage. A comprehensive and systematic habitat survey of Ireland should be undertaken to ensure that the full range of sites of conservation value is identified, and protected. Until such time as this is completed, all areas identified for forestry development should be subject to full site assessment of their wildlife value to ensure that no further sites of high conservation value are damaged as a result of forestry. This site assessment should be carried out by qualified ecologists.

Recommendation: that a national survey of habitats be undertaken to identify the full range and precise location of Ireland's habitats.

Recommendation: that until there is a comprehensive network of sites of nature conservation importance, that a site-based assessment of the wildlife value of areas earmarked for forestry development be undertaken.

Increasing forestry cover in Ireland offers a great opportunity to enhance Ireland's biological diversity, but only if there is a move towards increased planting of broadleaved species. Unfortunately, the current forestry policy does little to enhance biological diversity. Indeed, due to extensive planting on sites of nature conservation value, it has contributed to local reductions in biological diversity. Due to the scale of land use change which this present forestry policy seeks to achieve, there has to be a recognition that forestry has functions other than commercial. In the Irish context, a balance should be struck between planting exotic conifers and broadleaved species to

ensure that biological diversity and commercial objectives of a forestry policy are evenly matched.

Recommendation: that forestry policy should strike a balance between planting coniferous and broadleaved species to ensure that biological diversity and commercial objectives of the forestry policy can converge.

If forestry is to contribute to maintaining and enhancing biological diversity, efforts must be made for the plantations to be of mixed species and to have increased structural and spatial diversity. The more plantations resemble the native mixed woodland, the greater the opportunities they provide for enhancing aspects of Ireland's indigenous natural heritage.

Recommendation: that forestry plantations have a greater mix of species, and are structurally and spatially more diverse.

This could be achieved by:

- Highlighting the important effect of tree species selection and management on populations of associated flora and fauna;
- Including broadleaved species in plantations;
- Using local species and provenances for broadleaves;
- Encouraging the growth of an understorey of shrubs by increased light penetration;
- The leaving greater areas of open space within plantations;
- Encouraging the planting of woodland plots with the greatest woodland edge;
- Encouraging ride lines which merge gradually with the wooded area;
- Providing different age classes of trees;
- Enhancing the habitat range of wooded areas by leaving some mature and dead wood; and increasing the number of water courses and ponds,
- Promoting selective felling rather than clearfelling as the dominant harvesting technique.

The identification and management of Ireland's natural heritage is diverse and complex and requires a high level of ecological and nature conservation expertise. In order to integrate the protection of Ireland's natural heritage into the forestry programme, there must be an input from professional ecologists at all levels of the programme. To do this effectively, a special ecological unit should be established as part of the overall heritage unit, to ensure that nature conservation becomes a key component of the forestry programme, both at policy and management level.

Recommendation: that a special ecological unit is established to integrate nature conservation into both the policy and management of the forestry programme.

4.3 Hydrology & Aquatic Heritage

Forestry can alter local hydrology and has the potential to impact negatively on freshwater systems. Possible negative effects of forestry include:

- Altering the hydrology of afforested catchments, and destruction of peatlands
- Changing water quality, including acidification and eutrophication
- Changing in-stream habitats, including sedimentation, shading and temperatures, and habitat structure, such as provision of large woody debris and bank erosion
- Changing aquatic ecology, including macro-invertebrate and fish populations

Research suggests that forestry causes changes in the hydrologic regime, altering the balance between baseflow and flood peaks in the annual hydrograph. Forestry, especially involving conifers, can also cause changes in water quality, particularly the critical load of acidity which ecosystems can tolerate. Hydrologic impacts have implications for in-stream habitats and hence indirectly for aquatic plants and fish populations. The critical load of acidity which the ecosystem can tolerate has more direct impacts on macro invertebrates and fish populations. In all cases the changes are complex with several variables involved and care must be taken in making generalisations. However current knowledge is a sufficient basis for some action to minimise the adverse implications of these interactions between forestry and hydrology and the aquatic environment, particularly as afforestation is currently progressing at such a rapid rate.

Recommendation: to take a cautious approach to planting forestry to avoid negative alterations to freshwater systems and catchments. Also large-scale new planting should only occur in areas where the risks of adverse impacts from afforestation are known to be acceptably low.

The Forest Service is currently reviewing the Forestry and Fisheries Guidelines, and the Heritage Council welcomes this action. The emphasis of the current guidelines is very much related to the risks of acidification associated with coniferous afforestation. However, the risk of acidification is only one issue in relation to hydrology and the aquatic environment. Other issues such as in-stream habitat protection, erosion and sedimentation risks need also to be addressed.

Recommendation: that the revised Forestry and Fisheries Guidelines include aspects such as in-stream habitat protection, erosion and sedimentation risks. As planting is continuing at present, these revised guidelines should be published as a matter of urgency.

The issue of a threshold of acceptable forest cover in catchments on poorly buffered geologies is not adequately addressed. The Forest Service does not yet address this issue systematically when assessing grant applications. However, the potential to develop a catchment planning system based on assessing the acidification potential of each proposal exists. Catchment planning approaches have been widely used in other countries, and could be relevant in the Irish context, particularly as this approach would fit well with the river basin management approach which is to be introduced in

all EU Member States following the implementation of the forthcoming EC Framework Water Directive.

Recommendation: that a strategic planning system be developed as the basis for identifying sensitive areas.

4.4 Archaeological Heritage

The protection of Ireland's archaeological heritage requires positive action to mitigate the damage already caused by forestry development, and to prevent further destruction of archaeological sites and monuments. In order to identify all possible archaeological sites, a pre-planting survey of all proposed afforested areas should be undertaken. This survey should be undertaken by professional archaeologists as a high level of expertise is required to identify all archaeological features.

Recommendation: that a pre-planting field survey is undertaken of all proposed forestry developments in order to identify the presence of archaeological sites.

A large number of archaeological sites occur within forested areas, all of which have common management issues related to forestry. An inventory of all sites in existing forestry would allow a complete assessment of the extent and nature of the issue, and it would assist in the development of management policies and plans for their protection. Such a systematic approach would also assist with the formulation of detailed forestry management and archaeology guidelines to guide the future planting and harvesting of forests. There needs to be an acceptance that if the long-term survival of archaeological sites in forestry is to be ensured, the sites require active management and maintenance.

Recommendation: that a full inventory of archaeological sites within forested areas be undertaken to assist the development of management plans for their protection.

To carry out pre-afforestation surveys on forestry proposals, and to co-ordinate individual assessments of proposed planting areas, a special archaeological unit should be established. In co-operation with the Forest Service, such a unit could be deployed to investigate areas targeted for afforestation by Indicative Forestry Strategies. This might follow the model of the relationship between the Irish Archaeological Wetland Unit and Bórd na Mona.

Recommendation: to establish an archaeological unit to carry out pre-afforestation surveys.

Often the individual archaeological sites form part of a larger complex, and their function can only be understood by reference to their setting in the landscape. In these cases, forestry has the potential not only to impact negatively on the specific site, but also to detract from the archaeological landscape. The current approach of listing individual sites does not adequately address the need to protect archaeological landscapes.

Recommendation: that the concept of archaeological landscapes be adopted in the context of forest planning.

Statutory protection is conferred on archaeological sites that are entered in the Record of Monuments and Places established under Section 12 of the National Monuments (Amendment) Act, 1994. This lists sites that have previously been identified, but

many more remain to be discovered. Over-reliance on the Record of Monuments must be avoided and its preliminary status must be emphasised.

To view the Record as a definitive list of archaeological sites in Ireland is to misinterpret its function. The Record is based on the Sites and Monuments Records which were compiled as the first stage in an on-going attempt to identify and ultimately protect sites. They collate the sites known at the time of publication and must be updated frequently to include newly identified sites. They are distributed to the Forest Service, the larger forestry companies, and those with control over agricultural/forestry activities in the different regions. It is essential, therefore, that before any large-scale development in a relatively unexplored landscape takes place, the area should be assessed by suitably experienced archaeologists for its archaeological potential.

Recommendation: that there should not be an over-reliance on the Record of Monuments for protecting archaeological heritage as this Record identifies only a proportion of all archaeological sites.

To ensure that the archaeological heritage is fully protected in the context of Ireland's forestry programme, there needs to be close liaison between forestry and archaeology personnel at all stages in the forestry programme.

Recommendation: that there should be closer liaison between forestry and archaeology personnel at all stages in the forestry programme.

This could be achieved by:

- the formation of heritage units within forestry agencies and the inclusion of at least one professional archaeologist within each unit;
- having an input from professional archaeologists in forestry training and education courses;
- having greater direct consultation between archaeologists and foresters during the planning and harvesting process;
- the appointment of regional or local authority archaeologists to facilitate assessment of planting proposals and site inspection at local level, and to provide information and advice to landowners;
- that Coillte would participate with Dúchas – The Heritage Service and the National Museum of Ireland in a management liaison committee, similar to that currently operating with Bórd na Mona;
- that Coillte employ at least one professional archaeologist to manage the archaeological sites on its property and to oversee compliance with the Forest Service guidelines. This archaeologist would be part of the heritage unit proposed earlier.

4.5 Architectural Heritage

Ireland's rich architectural heritage includes many smaller buildings throughout the country which currently are afforded no legal protection, but which should be preserved. These includes examples of Ireland's vernacular buildings, follies, lime kilns, mines, etc. These post-1700 features should be afforded the same degree of importance and protection as pre-1700 archaeological sites. In any pre-planting survey, architectural features should be identified, and measures taken for their protection. Also, forests should not be planted in a manner which would detract from the vistas of historic buildings.

Recommendation: that forestry carries out pre planting survey and design work to ensure it does not impact negatively on Ireland's architectural and industrial heritage.

All of the recommendations in the preceding section, when considered as a whole, point to the necessity to put in place a model which considers fully all aspects of the national heritage.

4.6 Landscapes and Sustainable Forest Management

Government policy is to convert annually 25,000 hectares of land to forestry until the year 2000, and 20,000 hectares annually until 2030. This will increase the area of the country which is forested from 8% at present to 19% by 2030. This average figure masks the fact that substantially larger percentages of some areas will be forested if the targets are met. This proposed large-scale and rapid expansion of forestry in Ireland will alter radically the landscape in many parts of the country. As woodland has been inextricably linked with landscape and natural heritage in Ireland until recently, increased woodland cover per se is not a negative trend. However, planting of non indigenous species in a matter which is inappropriate to the landscape can have significant impacts which should be avoided. Landscapes have evolved, and continue to evolve with time, making change itself an inherent element of landscapes. Yet there is a rate of change which is unacceptable to landscapes and local communities, and every effort must be made to ensure that this threshold is not exceeded. This applies equally to the planting and felling stages of the forestry cycle.

There are a number of elements which need to be considered when dealing with the landscape impacts of forestry, including altering the character and quality of the landscape, impacting negatively on scenic quality, and the influence of such changes on the local community.

4.6.1 Social impacts

Changes to landscape cannot be viewed purely in term of topography and terrain, but must incorporate the impact of such change on the local communities which inhabit the landscape. Afforestation in parts of the country has been viewed negatively by some local communities, as they feel it impacts negatively on the social/landscape fabric of the community. Negative perceptions of this kind are an undesirable attribute of the forest policy, and are a good indication of when the scale and rate of change is inappropriate in a landscape. Efforts must be made to ensure that forestry developments are welcomed by local communities. To achieve this, forestry developments need to be considered in a local socio-economic context. Aligning private and state-sector monetary objectives with local community-based objectives is a challenge and requires a considerable investment in time and resources, and effective local strategic planning. Having a mechanism in place to deal with this issue is likely to address the worst cases of inappropriate plantings in the landscape.

Recommendation: that future forestry planting is done in the context of local strategic planning. This will include:

- Actively involving communities in determining the rate of landscape change and afforestation in their areas;
- Encouraging local involvement in the planning, planting, management and ownership of forestry and related activities;

4.6.2 Visual impacts

Inappropriate or insensitively placed plantations and clearfelling operations have potential to impact negatively on the scenic quality of some landscapes. Efforts should be made to ensure that these negative impacts are reduced. Many of the negative visual impacts of forestry are the result of planting non-native conifer plantation on open expanses of peatlands; a clear case of inappropriate planting. Whether or not a particular plantation has a negative visual impact is a subjective question; however, many of the negative impacts can be reduced by using the existing vegetation to guide future planting policy. A move towards a forestry policy which encourages more mixed species stands, greater structural and spatial diversity within stands, and comprising a high percentage of native broadleaved trees, would help to reduce many of the negative visual impacts of afforestation. This would be particularly the case in planting of enclosed land.

Recommendation: that negative visual impacts of future forestry plantation be minimised.

This could be achieved by:

- Undertaking a landscape assessment to identify the character of planting in the area, and provide guidance on which species would be most suitable for the new plantation;
- Avoid the cumulative planting of private land which will result in a reduction of land traditionally used for agriculture and a change in landscape character;
- Ensure that broadleaved plantations are carefully designed to fit with landform and landscape character;
- Retain important views and vistas within the landscape;
- Avoid planting non-native species above the commons ditch in certain scenic landscapes;
- Avoid severe visual impact due to inappropriate planting and clear felling operations.

4.6.3 Socio-Economic Issues

Socio-economic and heritage issues associated with forestry are not easily separated. If increased forestry is to be fully integrated at the local level, and is to benefit the national heritage, forestry has to provide real benefit to local communities. The greatest opportunities for forestry to contribute to local communities arise where harvesting and down-stream processing is of a scale and nature to maximise local employment opportunities. Forestry development which gives rise to a diverse and local ownership and management structure is perhaps the most likely to stimulate local jobs.

In recent years multi-purpose forestry and sustainable forest management have become the dominant models of forest management elsewhere in Europe. These approaches have broadened forest management interests from a narrow focus on timber benefits to include environmental and social considerations, and in the process has increased the amount of management effort per unit area. They have been

successful in raising awareness of the environmental benefits that forestry can provide, and these benefits are often seen as central considerations, alongside silviculture, in developing forest management plans. However, the social benefits of forestry have been less well demonstrated, and there is a need to provide additional emphasis on the social benefits to balance current interest in economic and environmental benefits. It is for this reason that the sustainable forest management model of forest management has begun to be the dominant model in Europe. Sustainable forest management requires an on-going demonstration of the economic, environmental and social benefits of forestry, and demands flexibility in the forest services and products to meet changing social, economic and environmental circumstances. This is the most appropriate management model for Ireland's forestry.

Recommendation: that sustainable forest management be adopted as the model for forest management in Ireland.

Local employment opportunities are most likely to arise where the community feels included in forestry development, and where forest management is co-ordinated between owners in local areas. Individual forestry developments managed in accordance with the owner's interests are unlikely to require external labour. However, if the community were permitted to have a formal stake in the change of rural landscapes and characters, the focus of forest management could be adjusted and the potential for local employment increased. The current forestry model, which strives to achieve a critical mass, encourages mechanisation and the specialisation in larger non-locally owned firms, and processing in large plants remote from where forestry is grown.

Against this background, there are few direct opportunities for local community involvement and rural employment within the context of current forestry policy. The challenge in increasing employment opportunities is to identify opportunities for:

- Increasing the use of local employment in current forest management by emphasising the local benefits. This could include community schemes which train local people in simple forest management activities, such as thinning and stand maintenance, involvement in managing recreation and environmental benefits, etc.
- Taking a longer term approach to providing local employment opportunities from afforestation. This would require fundamental changes, by involving the community in developing local afforestation plans, and encouraging a form of forest management that emphasised the community's on-going involvement. It would require locally based, specialised value-added timber processing facilities to be developed, using local transport and labour.

There are considerable challenges in both the short term and long term scenarios for generating local employment opportunities. Both will require a change in forest management emphasis by recognising that local communities have a stake in the significant land use and character changes, on both publicly and privately owned land.

Recommendation: that local involvement in the planning, planting, management and ownership of forestry and related activities be encouraged.

Increasing the local employment opportunities in the longer term could be facilitated by establishing pilot forestry programmes with a local emphasis and a strong social development theme. This could lead to the social benefits of forestry becoming interwoven with the economic and environmental benefits, if the pilot programmes are successful and if changes in the economics oriented culture of the forestry sector are brought about. Forestry programmes with a social development theme which could be appropriate in the Irish context include:

- i. Rural Development Forestry - tested in Scotland, but used more typically in developing countries. The Scottish experience has found that the social development principles are equally relevant in developed countries.
- ii. The Pro Silva approach - this approach promotes a sustainable forest management system where there is a continuous output of forest products and a continuous demand for a low level of forest management inputs.
- iii. Co-operative venture opportunities - these present the possibility of future forest management on a more co-operative basis by getting those already involved in forestry to start working together. This would be particularly relevant to areas of contiguous small scale planting on marginal grazing land.

Recommendation: that forestry programmes which have a social development theme be promoted to increase local participation in the forestry industry.

4.6.4 Regional and Local Planning

Regional and local planning for forestry in Ireland is done in the context of a Geographic Information System-based Indicative Forestry Strategy (IFS), with involvement from both the Forest Service and local authorities. While it is accepted that the IFS approach is only now being developed, and will be improved as it develops, the Heritage Council would question the wisdom of proceeding with such a large-scale planting programme in the absence of effective local and regional planning.

If the GIS-based IFS is to be used (or indeed the recently announced Forest Inventory Planning System, FIPS) then there are a number of issues which should be addressed. These include:

- The IFS approach should be more balanced to identify areas suitable for particular
- types of afforestation, rather than identifying only those areas that are sensitive to forestry development;
- Local community involvement in the planning system should be increased;
- Greater transparency and clarity of the Forest Service's consideration and decisions on afforestation when granting planting application;
- Incorporating a greater range of socio-economic and environmental issues in the IFS.

These would include:

- water and catchment issues, including changes in hydrologic regime, water quality changes, and changes in in-stream habitat structure and quality.
- wildlife habitats,
- archaeological sites and monuments,
- landscapes,
- recreational potential.

Local authorities have, potentially, a very important contribution to make to strategic forestry planning in the regional and local context; consequently they should be given a more closely defined role. Formalising and extending the local authority's role in the process, and, within the context of an effective strategic planning scheme - providing it with enhanced decision making function, is one additional measure which could be employed to ensure that forestry does not impact on other local or regional strategic objectives. A formalised local authority role would also provide an additional mechanism for local community involvement in forestry planning.

Within an effective strategic planning system the responsibility for the range of forestry issues related to strategic regional planning should be shared between the Forest Service and local authorities. Local authorities are best placed to facilitate links between forestry and other rural development initiatives, they have a better local knowledge and have a more coherent vision for landscape, water and catchment planning. Responsibility for these elements of the forestry programme should reside with local authorities. Responsibility for silvicultural and related site productivity issues should be retained by the Forest Service. In this regard, all forestry planting should be carried out within the context of an effective strategic planning system. This could be achieved through a full statutory consultation exercise with all stockholders.

Recommendation: that responsibility for regional forestry planning be shared between the Forest Service and Local Authorities, and that Local Authorities within the context of an effective strategic planning system be given a decision making function on forestry developments.

4.7 Legislation

The 1946, 1956 and 1988 Forestry Acts should be reviewed and amended to ensure that the statutory requirements of forestry facilitate the introduction of sustainable forestry management. In particular, the statutory requirement under the 1946 Forestry Act to replant as a precondition of obtaining a felling license needs to be removed. At the time when this legislation was enacted, little was known of the adverse impact of forestry on water catchments and fisheries, or the nature conservation problems created by large-scale inappropriate plantings on deep peatland habitat. To rectify some of the problems created by inappropriate planting in the past, the requirement to replant as a pre-condition for a felling licence must be abolished.

Recommendation: that the 1946, 1956 and 1988 Forestry Acts be reviewed and amended to ensure that the statutory requirements of forestry facilitate the introduction of truly sustainable forest management.

4.8 Summary

Many of the recommendations made above are linked and require a concerted approach to ensure that the negative impacts of forestry are minimised and the benefits maximised. As a minimum the following practices need to be incorporated into forthcoming planting and forest management guidelines:

- i. Improve the generation of information on planting by soil type, land use, conservation value and species.
- ii. Review the incentives for planting on different types of land to ensure the use of more improved agricultural land suitable for broadleaved mix.
- iii. Use strategic planning tools more effectively to ensure that the right species are planted in the right places to optimise the benefits to biodiversity, landscape, archaeology and water resources.
- iv. Require greater site specific assessment before changes in land use are approved. In particular, site investigation is required for landscape, wildlife, archaeology and soil aspects.
- v. Improve the strategic approach to managing water catchment acidification to ensure that the thresholds and risks for different geologies, soils and altitudes are being fully taken into account.
- vi. Provide greater guidance on species, provenances and planting patterns for meeting specific objectives. In particular a more flexible approach should be taken to planting densities, mixed species stands, early thinning, late felling and creation of open space in order to maximise biodiversity, landscape and recreational benefits.
- vii. Greater guidance should be given to minimise potentially negative impacts from forest management, such as drainage, fertilisation, felling, etc.

5. Conclusion

This policy paper emphasises the relationship between forestry and our national heritage.

The long-term well being of both are inextricably linked. The recommendations contained in the paper present new challenges for us all and opportunities to examine all the issues. Consideration of the recommendations and in time, their acceptance, will strengthen and bring benefit to the communities in which our forestry sector will develop. Placing our national heritage as defined in the Heritage Act, 1995, within the context of the approach to be adopted by the forestry sector will secure a more integrated consideration of heritage issues as part of our national heritage.

Our forests should be appreciated and enjoyed. They are something in which we can have pride.

The Heritage Council welcomes debate and discussion on all aspects of this document.

The Heritage Council
March 1999