Champion and Heritage Trees of Ireland
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Abstract
Before humans settled in Ireland, the landscape was covered with trees, the climax of which was oak (Quercus robur). With the advance of agriculture, the forests were removed and tree cover was reduced to 1.2% over a century ago. During the 19th century, large numbers of species were introduced from the new world and because of the mild climate, some species such as Douglas Fir (Pseudotsuga menziesii) and Sitka Spruce (Picea sitchensis) grew several times faster than in their native habitat. As the new millennium dawned, The Tree Council of Ireland undertook the task of surveying “Champion Trees” in Ireland. These were specimens which were the tallest or the largest girth of their species in the country and its counties. The register included species from native woodlands, historic parklands and estates. Upon its completion, it became apparent that many species not large enough to be “champions” were nevertheless important for other reasons and this gave rise to the establishment of the register of “Heritage Trees”. A heritage tree may be defined as a tree of biological, cultural, ecological or historical interest because of its age, size or condition. The project was implemented in 2009 and continues into 2010.

Introduction
Ireland covers an area of 70,286 square kms. (including 14,144 sq. kms. in Northern Ireland) and is located on the western edge of Europe where its shape is constantly being modified by the powerful Atlantic Ocean. About 50,000 years ago, the island of Ireland separated from the land mass of Britain from which it is now separated by the "Irish Sea" by a distance of 17.6 kms. across at its narrowest point. Ten thousand years ago, Ireland was covered with glaciers and when they retreated, relatively few tree species (compared with the rest of Europe) were able to re-inhabit the island from across the Irish Sea. Therefore, the following are regarded as native species; Aspen (Populus tremula), Ash (Fraxinus excelsior), Blackthorn or Sloe (Prunus spinosa), Crabapple (Malus sylvestris), Silver Birch (Betula pendula), Downey Birch (Betula pubescens), Black Alder (Alnus glutinosa), Pedunculate Oak (Quercus robur), Sessile Oak Quercus petraea), Juniper (Juniperus communis), Rowan or Mountain Ash (Sorbus aucuparia), Hawthorn (Crataegus monogyna), Whitebeam (Sorbus hibernica), Wild Cherry (Prunus avium), Bird Cherry (Prunus padus), Scots Pine (Pinus sylvestris), Wych Elm (Ulmus glabra), Yew (Taxus baccata), and several Willows (Salix spp). One the other hand, Ireland is home to
a select number of species known as the “Lusitanean Flora” because their only other native habitat is in the region of the Iberian peninsula and the Mediterranean Ocean. Included in this list is the Strawberry Tree (*Arbutus unedo*) an attractive evergreen tree.

The climax forest was oak (*Quercus robur* and *Quercus petraea*) and these woodlands were first removed by Neolithic (new stone age) people who practiced "shifting cultivation" by removing a portion of forest, cultivating it for a few years and then abandoning it for another area of forest. By A.D. 300 the greater part of Ireland’s woodlands had disappeared. The earliest villagers probably evolved from the Christian monasteries which were built along the rivers during the 5th and 6th centuries. Between the 5th and 12th centuries trees were valued highly and there were fines for destroying trees. Many place names such as Derry (Doire - the Irish for Oak-Wood) were called after trees. By the 17th century approximately 12% of the land was under trees and the Tudor conquest caused exploitation which was so extensive that Ireland began importing trees a century later. The forests were also seen as a refuge for rebels and were therefore cut down for building ships, houses, fuel and the tanning industry. During the 19th century Ireland’s stock of broadleaved deciduous woodland was reduced to 1.2% of the country. However they form 20% of areas of scientific interest and are an important part of the Irish landscape especially in places like Killarney where there are remnants of ancient oakwoods.

The greatest amount of planting occurred since the Second World War encouraged by government and European Union grants. At present 10% of Ireland is forested, compared to the EU average of 36%. The current plan is to increase the percentage of Irish forests to 17% by 2035. Ireland’s planted forests contain 79% exotic conifers and 21% broadleaves. The exotic trees are mainly coniferous evergreens comprising Sitka Spruce (*Picea sitchensis*) and Lodgepole Pine (*Pinus contorta* var. *Latifolia*) which grow almost three times faster than on mainland Europe. Forests comprising these species were planted on the poor soils of peat and upland areas but in recent decades, the new forests have more broadleaved species and they are planted on the lower mineral soils as well as uplands.
Ireland has a heritage of houses, castles and gardens which are all over the country. These estates were planted with a range of trees from many parts of the world. Many of these trees are Champion and/or Heritage specimens.

In the 19th century, landlords in private estates undertook planting schemes to form new woodlands and to enhance their landscape. Many of these estates form the core of today’s national and city parks and some of the species used were introductions from the new world, especially North America. The National Botanic Gardens in Dublin was established in 1795 and is home for 25,000 species and varieties of plants including a number of important trees.

**Climate**

Ireland’s climate is described as a mild maritime climate with rainfall levels varying from 750mm annually on the eastern coast to 1500mm on the western coast with the Atlantic Ocean. Temperature levels are usually 15 to 20 degrees Celsius in the summer and 8 to 10 degrees in the winter. Because cloud cover is prevalent year round, the average hours of sunshine vary from 2 in winter to 7 in summer. Being an island on the west coast of Europe; means that Ireland receives a significant amount of wind from the Atlantic Ocean. Wind can sometimes persist for days, on average it has been recorded on 66 days per year on the north western coast. Although wind speeds are usually
low (12 to 30 km/h), storms occur from time to time; the highest ever speed recorded being 200km/h.

These factors combined means that some tree species usually do not grow as tall or as straight in Ireland as they do in warmer countries of mainland Europe. An exception are the coniferous evergreen species from North America which grow much faster and taller than in their native lands, hence their use in forest plantations. However, there is plenty of moisture for trees to thrive and the milder winters with less frost and snow compared with other countries at similar latitudes means that species from sub-tropical climates can be grown in gardens where they create an exotic effect.

**Surveying Trees**

Interest in surveying the size of trees in Ireland began during the early 20th century when John Henry Elwes & Augustine Henry published *“The Trees of Great Britain and Ireland”*. Their seven volumes and an index were published between 1907 and 1913.

Over the century their records were updated by H. M. Fitzpatrick, a Forest Officer with the Irish Government and Alan Mitchell, the well known English tree expert. Alan maintained records for 145 properties in Ireland.

In 1998, Andrew Morton published “Tree Heritage of Britain and Ireland; A Guide to the Famous Trees of Britain and Ireland”

A period of perhaps half a century followed when the records were not updated and in 1999, The Tree Council of Ireland and The Irish Tree Society jointly initiated the Tree Register of Ireland (TROI).
The Tree Council of Ireland is a voluntary non-governmental organisation which was formed in 1985, to promote the planting, care and conservation of trees in both urban and rural areas. It is the umbrella body linking together 50 organisations connected by their appreciation of trees, and it aims to foster a tree and wood culture among Irish people. The Irish Tree Society is an organisation comprised mainly of land owners who are concerned with the heritage of trees. Its chairman is the well known Thomas Pakenham who has travelled the world and written several books on remarkable trees. He owns the Tullynally Estate, Castlepollard, Co. Westmeath on which there are many fine tree specimens including “The Tullynally Oak” renowned for its erect form.

**The Tullynally Oak**

'The Squire's Walking Stick', as named by Thomas Pakenham. "Ireland's tallest oak tree", which stands in the grounds of Tullynally Castle and was planted 250 years ago as part of a scheme to provide timber for the British Navy. Today its acorns have been used as the basis for a new copse which will preserve its heritage. It is 34 metres high.


The aim of the project was to compile a database of significant trees throughout Ireland and to use a global positioning system (GPS) for each tree. During the period from 1999 to 2001, surveyors measured and recorded 5,200 trees and of these, 3,000 were recorded previously in the 1980s by Alan Mitchell on behalf of the Tree Register of Britain and Ireland (TROBI). The specimens recorded by Alan Mitchell were mainly in large private estates and public parks whereas the additional records were in private farmlands and gardens and in this task the public were of assistance.
The database was updated in 2004 to a total of 7,500 trees when Aubrey Fennel measured a further 2,300 trees and in May 2005, the Tree Council of Ireland with sponsorship from ENFO (Environmental Offices of the Government) and Bord Bia (the Irish Food Board) published a booklet entitled 'Champion' Trees'; it included information on 1,500 of Ireland's great trees.

Girths measurements were taken at 1.5m above ground level or at the most logical position where a stem was evident and the position was noted. Once completed, the database is of course dated and requires updating as trees grow, become damaged or die. The database is a valuable resource for government agencies and private developers in the planning of infrastructure such as new roads, housing and industrial schemes and avoiding the need for interfering with tree specimens which are listed as “Champions”

The records include the following:

- Many of the trees featured had been recorded as far back as the early 20th century, such as the Sweet/Spanish Chestnut (*Castanea sativa*) or John Wesley Tree near Ashford Co. Wicklow (Photos below).
• All of the species which exceed 50 metres in height are non-native and come from the west coast of North America. They include Abies grandis, Picea sitchensis, Pseudotsuga menziesii and Sequoiadendron giganteum.

• The east coast of Ireland experiences less wind than the western coast, so it is no surprise that the tallest tree measured by TROI is a specimen of *Pseudotsuga menziesii* (Douglas fir) growing in the well known Powerscourt Estate, Co. Wicklow. This tree is 57m high and has a girth of 5.09m.

• The largest tree with the greatest mass is a specimen of *Sequoiadendron giganteum* (Giant Sequoia) which is 48 metres tall and has a girth of 7.53 metres. It is growing in Caledon Estate, Co. Tyrone.

The tallest broadleaf species is *Populus x canadensis* ‘Serotina’ (Black Italian Poplar) which is 44 metres high and is growing in the estate of Borris House, Co. Carlow.
• *Fraxinus excelsior* (Common ash) is a native species and the tallest specimen is 40m high with a girth of 2.7 m growing in the grounds of Marlfield Farm, Clonmel, Co. Tipperary.

• Ireland was once covered entirely with oak forests and two specimens growing on the eastern part of the country share the maximum height of 37 metres. They are Quercus petraea (Sessile oak) growing in Shillelagh, Co. Wicklow (Pictured right) and Quercus robur (Common oak) growing in Co. Armagh.

Another species from the west coast of North America, *Cupressus macrocarpa* (Monterey cypress) has the widest girth, over 12 m; it is growing in Innishannon, Co. Cork in Southern Ireland (pictured left) and another specimen of similar size grows at Ringdufferin, Co Down in Northern Ireland. This species has the record for being the greatest girthed tree in 13 of the 32 counties of Ireland.

• Other tree species which are the most frequent big-girths throughout Ireland are
  - *Tilia x europaea* (Common Lime) with a girth of 10.71 metres in Florencecourt, Enniskillen, Co. Fermanagh,
  - *Quercus robur* (Common Oak) with a girth of 9.9 metres in Stradbally, Co. Laois,
Castanea sativa (Sweet/Spanish Chestnut) with a girth of 10.59 metres in Rosanna, Ashford, Co. Wicklow, and

Sequoiadendron giganteum (Giant Sequoia) with a girth of 10.38 metres in Charleville Estate, Co. Wicklow.

- Champion specimens are recorded for all tree species countrywide and for each county. Numbers of Champions in each county vary from the lowest of 29 for County Sligo in the west of Ireland to 1,063 in Wicklow on the east coast. Wicklow is well known for its attractive landscape and world famous gardens and is generally regarded as “The Garden of Ireland”

It is very difficult to attain exact ages of old trees. These trees are usually hollow in the centre and therefore the rings cannot be counted. Also, while carbon dating is the usual manner in dating old material, due to the hollow nature of these old specimens, the oldest wood material is long gone.

The Tree Register can be viewed at the National Botanic Gardens in Glasnevin, Dublin and provides the most comprehensive database of outstanding tree specimens in Ireland. The database is easy to navigate and allows you to search by county, species or champion categories. Many of the records have a photograph attached.
**Heritage Trees**

As the Tree Register of Ireland was being completed, it became clear that a number of important specimens were not being included in the survey because their height or girth was not particularly large compared with other specimens. These other trees had significance because of their age or link to historical events. This gave rise to another project, the recording of heritage trees which were defined as follows:

- A tree of biological, cultural, ecological or historical interest because of age, size or condition
- Giant, mysterious, sacred, curious, bizarre-looking and ancient trees
- Trees with a story – there are many.
- Trees of exceptional girth, height or age
- Trees associated with historical events, people or structures
- Trees of importance to a community
- Rag trees, hanging trees, trees at holy wells, military trees ……..

In 2008, the same partnership of the Tree Council of Ireland and the Irish Tree Society embarked upon an extension of the Tree Register of Ireland, developing an inventory of Ireland’s Heritage Trees and this time they were joined by Crann, a voluntary tree organisation dedicated to the promotion and protection of trees, hedgerows and woodlands. The Heritage Council of Ireland became a major partner by assisting with funding in 2009 and 2010. It is a semi-state organisation which seeks to protect and enhance the richness, quality and diversity of Ireland’s national heritage for everyone. It works with its partners, particularly at local level, to increase awareness of national heritage and to highlight its importance to public policy and everyday life. It was envisaged that the inventory once established would ….

- Inform and effect policy and legislative change in relation to conservation, protection and management of heritage trees
- Raise general public and professional awareness and appreciation for heritage trees
- Enable monitoring of trends and losses
- Inform decisions of local authority planners and engineers, landscape architects, property developers
- Inform interests of botanists, scientists, arborists, foresters, dendrologists, environmentalists and conservation groups
- Inform historical and tourism interests
• Provide an information source for the print and visual media

Part of Ireland’s heritage and trees includes the Ogham Alphabet. Its symbols denote letters, each of which represented a tree. These symbols are often carved on rocks.

Methodology

The work was done by Kate Crane and Aubrey Fennell over a six-month period in 2009. For the initial two months they did intensive desk top research to identify trees for recording; this included contacting professional organizations and local interest groups for information and consulting specialist subject books and other publications. Much has been written about Irish myths and legends associated with trees (Zucchelli, 2009, O’Toole, 1933, Morton, 1998, and MacCoitir, 2003). An appeal for information was promoted through several newspaper articles, magazines and websites. A database was designed to store, organize and enable access to information collected during the course of the survey. The fields in the database were created as follows:
<table>
<thead>
<tr>
<th>Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID Number</td>
<td>The identification number allocated to each tree</td>
</tr>
<tr>
<td>Species</td>
<td>Botanical name and each has a tree name ID number to increase accuracy and speed up field recording</td>
</tr>
<tr>
<td>Property Code</td>
<td>A code assigned to address of the property where the tree(s) is growing</td>
</tr>
<tr>
<td>Grid Reference</td>
<td>Taken using the GPS built in to the data logger</td>
</tr>
<tr>
<td>Recorder</td>
<td>The name of the person who recorded the tree(s)</td>
</tr>
<tr>
<td>Tree Category</td>
<td>A selection from the following - Individual Tree; Avenue; Parkland; Arboretum; Deer Park; Wood Pasture; Ancient Woodland; Hegderow; Riverside; Orchard; Other</td>
</tr>
<tr>
<td>Publications</td>
<td>Any books or papers that the tree(s) may already appear in</td>
</tr>
<tr>
<td>Reason for Inclusion</td>
<td>This section was broken down into various categories in order to describe why the tree(s) was important:</td>
</tr>
<tr>
<td>Age</td>
<td>Yes / No / N/A</td>
</tr>
<tr>
<td>Size</td>
<td>Height / Girth / Canopy Spread / Champion / N/A</td>
</tr>
<tr>
<td>Type</td>
<td>Arboricultural Curiosities / Landmark Trees / Unusual Location / Exceptional Specimen Trees / Trees with Character / Tree Collections / Named Trees / N/A</td>
</tr>
<tr>
<td>Historical/Cultural</td>
<td>Association with or contribution to a historic structure / Association with a noted person / Association with a historic event / Form part of historic landscapes /</td>
</tr>
</tbody>
</table>

Seven hundred and forty two heritage trees were recorded during this search between May and October 2009. The completed database is a stand-alone document, complete with instructions, photographs and maps that enable the user to find or view all of the trees recorded. The interface of the database is as follows
The second page of the search is copied below. This includes all the recorded details of the tree/s and the appropriate image of the tree/s is indicated.
There is also a facility to see where trees are located on a map of Ireland as illustrated below.
All of the trees recorded are remarkable in one way or another and some of the stories associated with the trees are quite interesting. One of the best-known examples is the ‘Hungry’ Tree at King’s Inns, Dublin, which is a London plane (*Platanus x Hispanica*) that appears to be consuming an iron park seat. The picture on the left below was taken by the author approximately 25 years ago. Compare it with Kate Crane’s picture taken in 2009 which shows that the rear of the seat is almost totally concealed within the bark of the tree.

Another well-known tree is the ‘Autograph’ Tree at Coole Park, Galway in the west of Ireland. A specimen of *Fagus sylvatica purpurea* (Copper Beech), it is famous because of the literary artists who carved their initials on the bark many years ago at the invitation of Lady Augusta Gregory, its owner. Lady Gregory was a legend in her lifetime as a dramatist, folklorist and co-founder of the Abbey Theatre in Ireland. The celebrities in their unique manner carved their initials in the bark. The first name to be carved was that of W. B. Yeats in the summer of 1898. Other names include his brother Jack, George Bernard Shaw, John Masefield, Sean O’Casey, John Millington Synge, Lady Gregory herself and other famous people of that period. The pictures below show the tree in 2009 with a steel frame protecting the bark from being damaged.
It is inevitable that the markings on the bark will become less noticeable as the tree grows and therefore it will be difficult to distinguish the carvings as evidenced by the close-up of the tree bark below on the left. An impression of the bark was taken during the middle of the 20th century before they began to fade and a cast of it is on display in the Abbey Theatre. A guide to the markings is on the right in the sketch below.
Conclusion

This project is being extended into 2010 when a further 300 records will be added, including some in Northern Ireland. They have already done a similar study entitled the “Ancient Tree Hunt”. The Champion and Heritage Trees of Ireland database will be accessible on line through the National Biodiversity data Centre (www.biodiversityireland.ie) and can also be viewed in the National Botanic Gardens, Glasnevin, Dublin.

In addition to the people already mentioned above, the success of this project is attributable to Mary Keenan, former President of The Tree Council of Ireland and now in the position of Director since earlier this year. Mary has chaired the TROI project team since its inception, guided the many years of work done and also assisted through her role as a board member of The Heritage Council. Her assistance to the author in the preparation of this paper is also hereby acknowledged. John McLoughlin, former President of the Tree Council and its former Director has also worked with the project team over the years and provided valuable direction and support.

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